

Image source: WSB



Mini- Roundabout FAQs



Report 2024RIC03

July 2024



INTRODUCTION

Roundabouts have been effective at increasing safety and efficiency of vehicle traffic. Traditional roundabout design typically requires a larger “footprint” than a traditional four-way intersection. Over the past few years, more and more agencies are implementing “mini roundabouts,” a type of roundabout characterized by a small diameter that can include fully traversable islands (central island and splitter islands). Currently, there are over 40 mini-roundabouts in Minnesota.

The focus of this document was to help Minnesota agencies learn a little more about mini-roundabouts by addressing some of the following questions:

- What is the difference between roundabout (RAB), a mini-RAB and a compact RAB?
- Why do we have mini/compact RAB?
- What are the typical design features of mini/compact RAB?
- How do you decide whether to use a mini/compact RAB vs signalized intersection?
- How effective are mini/compact RABs with respect to safety?
- What is the typical diameter of a mini/compact RAB?
- What design features are best for large trucks and implements of husbandry?
- What design features can be used to encourage small vehicles to drive like they would through a full RAB yet allow trucks and implements of husbandry to drive over part of the transversable center island?
- What signing is necessary for mini/compact RABs?
- What lessons have been learned from other Minnesota local agencies when constructing mini/compact RABs?
- What are the best practices for winter maintenance of RABs?
- What resources are available to design and learn more about mini/compact RABs?
- Where are there mini/compact RABs in Minnesota and what are their design specifics?



1. What is the difference between roundabout (RAB), a mini-RAB and a compact-RAB?

In simple terms a mini- or compact-roundabout is mini-roundabout that fits within the dimension of a standard intersection; roundabouts require a larger footprint. Although similar, there are some slight technical differences between mini and compact; in general, some agencies prefer using compact because mini can have a negative connotation, especially when addressing concerns of how large vehicles navigate these smaller RABs.

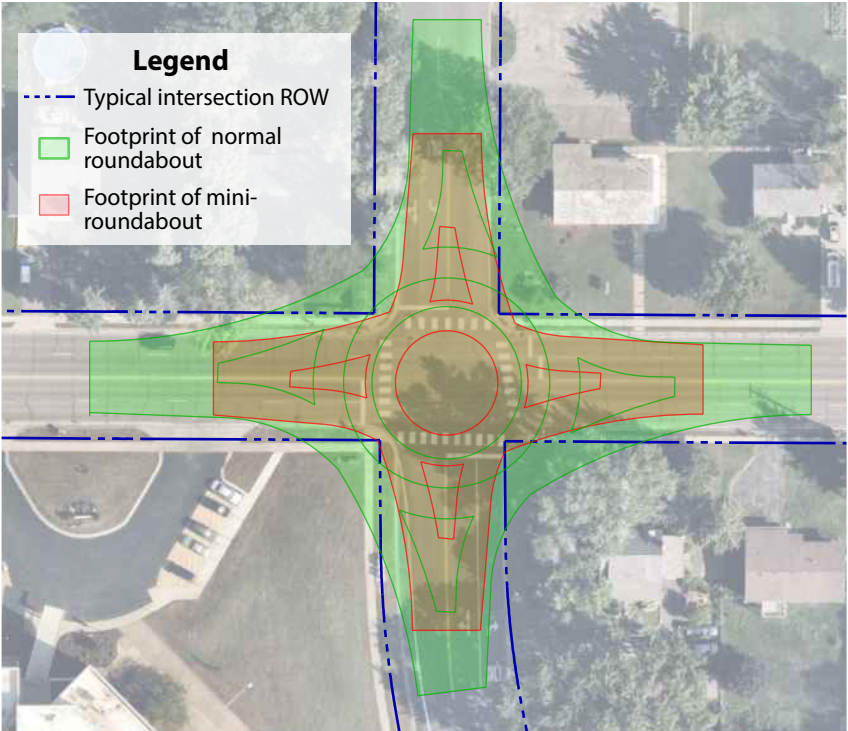


Table 1 Common Roundabout Characteristics
(from [NCHRP 1043](#) and [MnDOT Facility Design Guide](#))

Roundabout Feature	Mini RAB	Compact RAB	Single Lane RAB
Central Island	Traversable	Traversable	Non-traversable, includes truck apron
Splitter Islands	May be traversable with one-stage pedestrian crossing	Non-traversable with one-stage pedestrian crossing	Non-traversable with one-stage or two-stage pedestrian crossing depending on dimensions of pedestrian refuge
Common Inscribed Circle Diameter (ICD) range ^a	45 ft to 90 ft (NCHRP 1043) 70 ft to 100 ft (MnDOT FDG)	65 ft to 120 ft	90 ft to 180 ft (NCHRP (1043) 130 ft to 165 ft (MnDOT FDG)
Typical AASHTO Design Vehicle	SU-30 WB-62 (MnDOT)	BUS-40 WB-40 WB-62 or WB 67 ^b	BUS-40 WB-40 WB-62 OR WB-67

^a Assumes 90-degree angle between entries and no more than four legs. The list of possible design vehicles is not comprehensive.

^b Serving WB-62 or larger vehicles as through movements. Right turning may require other special considerations for approach and splitter island design.

2. Why do we have mini/compact RABs?

A traditional single-lane roundabout requires more right-of-way than conventional intersections. **In areas where the necessary right-of-way is not available**, mini or compact roundabouts can provide similar benefits as a traditional single-lane roundabout.



Image source: City of New Ulm

3. What are the typical design features of mini/compact RAB?

Mini and compact RABs are distinctive by their **smaller Inscribed Center Diameter (ICD)**. This reduced footprint is made possible by using a **fully traversable central island**. Because the center island is traversable (accommodating large trucks [swept path](#)) there cannot be signs placed in the central island.

Mini and compact RABs are best suited where roadway speeds are already low (25-30 mph). However, mini and compact roundabouts have been successfully applied on roadways with speeds greater than 30 mph; these locations need to incorporate speed management treatments (e.g., extra signs, rumble strips, raised pavement markers, delineators, flashers, longer splitter islands, as shown in the photo to right) on the roadway approaches.



Image source: Minnesota Department of Transportation



Image source: Minnesota Department of Transportation

4. How do you decide whether to use a mini/compact RAB vs signalized intersection?

A roundabout can be an ideal application to reduce delay at stop-controlled intersections that do not meet signal [warrants](#). The major factor in deciding whether to use a standard single-lane RAB or a mini/compact RAB is typically the availability of right-of-way.

Another factor to consider is the volume of trucks. A high volume of trucks will significantly reduce the capacity of a mini/compact RAB as trucks will occupy most of the intersection when turning. Additionally, high volumes of trucks overrunning the central island may lead to rapid wear of the roadway markings. Mini/compact RABs are not recommended in locations in which U-turn truck traffic is expected.

5. How effective are mini/compact RABs with respect to safety?

[MnDOT reports](#) “Roundabouts in Minnesota have had over an 80% reduction in fatal and serious injury crashes” and:

Where roundabouts have been installed:

- 86% reduction in fatal crash rates
- 83% reduction in serious injury crash rates
- 42% reduction in injury crash rates

Where single lane roundabouts have been installed:

- 69% reduction in right-angle crash rates
- 83% reduction in left-turning crash rates
- 61% reduction in injury crash rates

Specifically for mini-roundabouts, a crash modification factor (CMF) for total crashes for All-Way Stop conversions to mini-RABs was developed and reported in [FHWA-HRT-22-109](#). The study, using data from multiple states, reported a CMF of 0.61 or a 39% crash reduction.

6. What is the typical diameter of a mini/compact RAB?

Per the referenced design guides, inscribed circle diameter range from:

- 45-90 ft ([NCHRP 1043](#))
- 70-100 ft ([MnDOT Facility Design Guide](#), Chapter 6)



Image source: Minnesota Department of Transportation

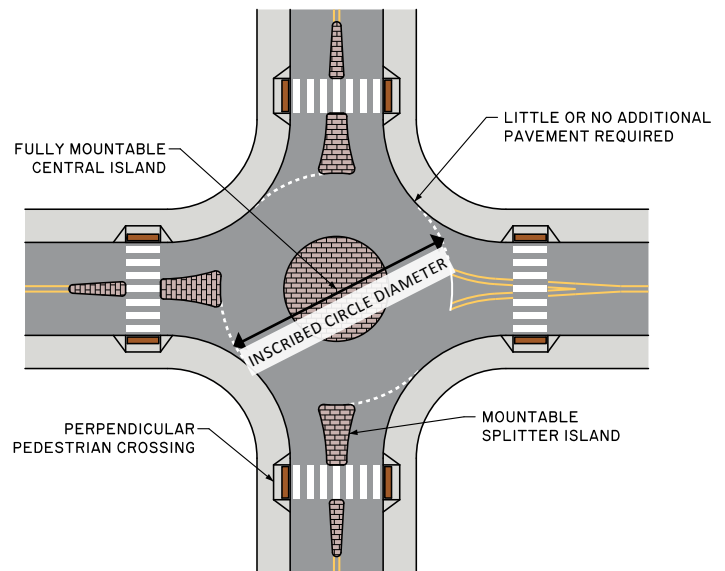


Image Source: MnDOT Facility Design Guide Exhibit 6E-6

7. What design features are best for large trucks and implements of husbandry?

Design vehicle can have a significant effect on the size of the roundabout. Roundabout configurations can be tailored to match specific patterns of truck movements, such as larger trucks for through movements along a major street and smaller trucks for turning movements.

Mini/compact roundabouts are designed to accommodate large trucks with **fully traversable central islands and splitter islands with a mountable curb and flat top** (MnDOT mountable curb type with a height of 3" or 4" is recommended, 2" curb height may be too low and risk driver non-compliance driving straight over the center island).

The use of 3D Autoturn movements within Civil 3D will help to confirm that low boy trucks will not scrape the traversable islands. Also, it is recommended to factor in "gutter-in versus gutter-out" and the slope of the island when analyzing the island height. Lastly, if trucks need to traverse the splitter islands, avoid placing signs within them.



8. What design features can be used to encourage small vehicles to drive like they would through a full RAB yet allow trucks and implements of husbandry to drive over part of the transversable center island?

Islands with a mountable curb are designed similarly to truck aprons at other roundabouts. Flush central islands are generally discouraged to maximize driver compliance but may be used on roadways with speeds of 25 mph or less and appropriate signs and pavement markings.

Although fully traversable and relatively small, **the central island needs to be clear and conspicuous**; painting with a contrasting paint provides a visual distinction.

A 3" or 4" mountable curb type is recommended. The circulatory lanes should slope away from the roundabout for maximum visibility.

9. What signing is necessary for mini/compact RABs (i.e. lessening sign pollution/unnecessary maintenance)?

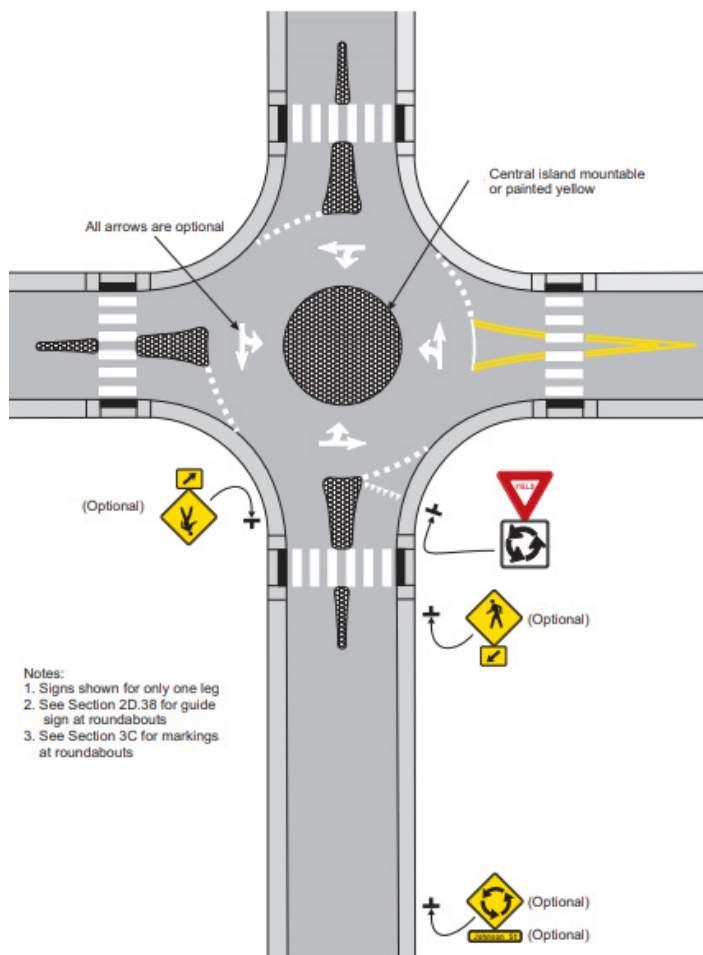


Figure 1 [MUTCD 2024](#) Edition Part 2 Figure 2B-21)

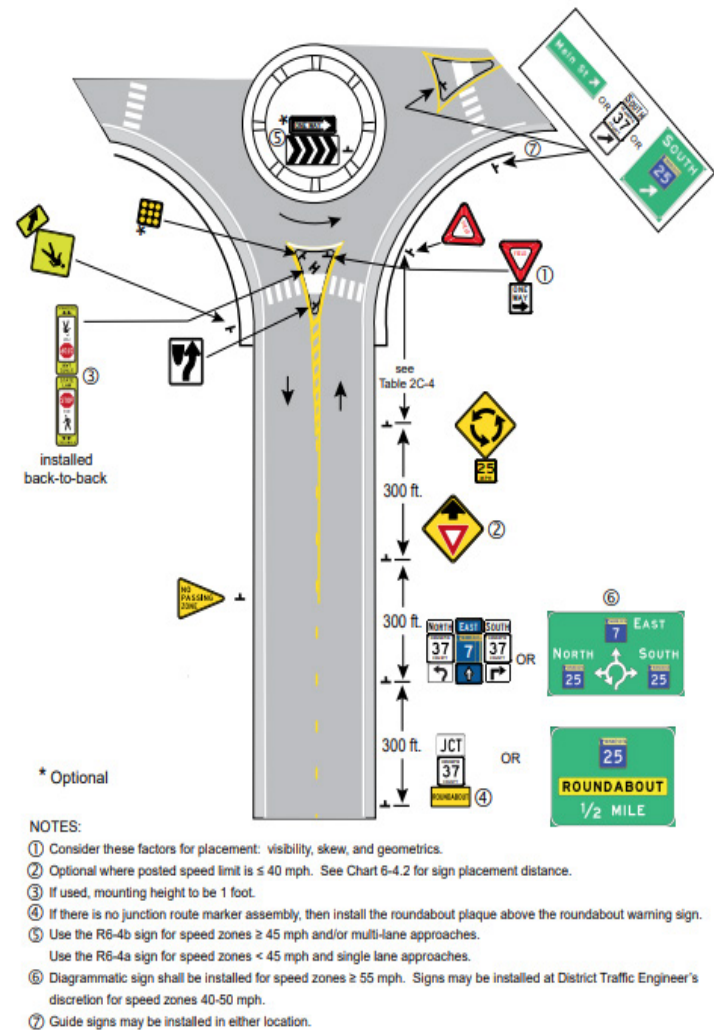


Figure 2 [MnDOT Traffic Engineering Manual](#) figure 6-8.1

In some cases, the pedestrian crossing signs on the approaches can block the yield sign. In these instances, agencies have opted to remove them, or use a shorter sign in the splitter island if turning movements allow.

LESSONS LEARNED

Listed later in this document are technical resources that should be used/referenced when designing mini-roundabouts. The following are comments received by Minnesota local agencies and are shared as lessons learned. These are not intended to replace technical information within the design resources; they are offered as shared knowledge/experience from those who have built mini-roundabouts.

These opinions are based upon the context from a specific mini-roundabout. Contextual elements vary from project to project, such as: neighborhood type (urban vs. rural), ADT (low vs. high), truck volumes and size, design vehicles, posted speed, available right-of-way, etc.

Design

- The functionality of mini-roundabouts improves when vehicles are entering at the same speeds. Mini-roundabouts generally fit within the dimensions of a typical intersection (66' x 66'); the MnDOT FDG lists an inscribed circle diameter (ICD) range of 70-100 feet. Although keeping the ICD smaller saves on ROW (cost), elements such as larger ICD, skewed splitter islands, raised islands, chicanes, etc. help to create more consistent speeds resulting in higher efficiencies and less crashes.
- Smaller diameters (80') are better suited for urban, lower speed lower volume roadways; smaller diameters do require slower speeds.

Curb/islands (splitter and central)

- By design (fitting a roundabout within typical intersection) mini-roundabouts are designed to have the center island partially transversable. With flush islands (not raised/no curbs), vehicles will often drive straight through; painting the center island (contrasting color or high visibility yellow) improves compliance (i.e., cars driving around vs. through).
- 3-4 inch high central and splitter islands discourage cars from driving straight through the center island. Consider the slope of the curb and the gutter (gutter out vs. gutter in) when factoring height of the islands -- too short or too gradual is ineffective, too high or too harsh is difficult for trucks.
- Deflected approaches (and splitter islands) alert motorists of an upcoming roundabout.



Image source: Minnesota Department of Transportation



Image source: WSB



Image source: Minnesota Department of Transportation

Signs

- Should signs be placed within transversable splitter island?
As mentioned above this depends on the context. Since the islands are sometimes transversable, they are designed to be driven on and potentially could be hit by large turning vehicles. Placement of signs should be outside vehicle movements. If posted speeds entering the mini-roundabout are relatively slow (i.e. 25 mph) signs (i.e. **Keep Right**) may not be necessary.
- Consider placing roadway signs on the back side of the trail if possible or in a wider boulevard area not to hinder snow storage.
- Enhanced signage may be needed, especially in winter conditions where drivers are likely to drive over the center of the roundabout.
- In following the guidance of MNMUTCD for mini-roundabouts, the **Pedestrian Crossing** sign may block the **Yield** sign (as illustrated in photo above, left). Make sure sign placement is adjusted to fit the context of the site; using the [vertical Pedestrian sign](#) may be an alternative (as shown in photo above, right).
- **Yield** signs can get clipped by larger trucks while circumnavigating mini-roundabouts; adjust location if necessary and possible.
- There is opposing opinion as to whether advanced warning reduced speed advisory signs (shown below, right) should be used. The MNMUTCD does not include them; the [MnDOT Traffic Engineering Manual](#) does.

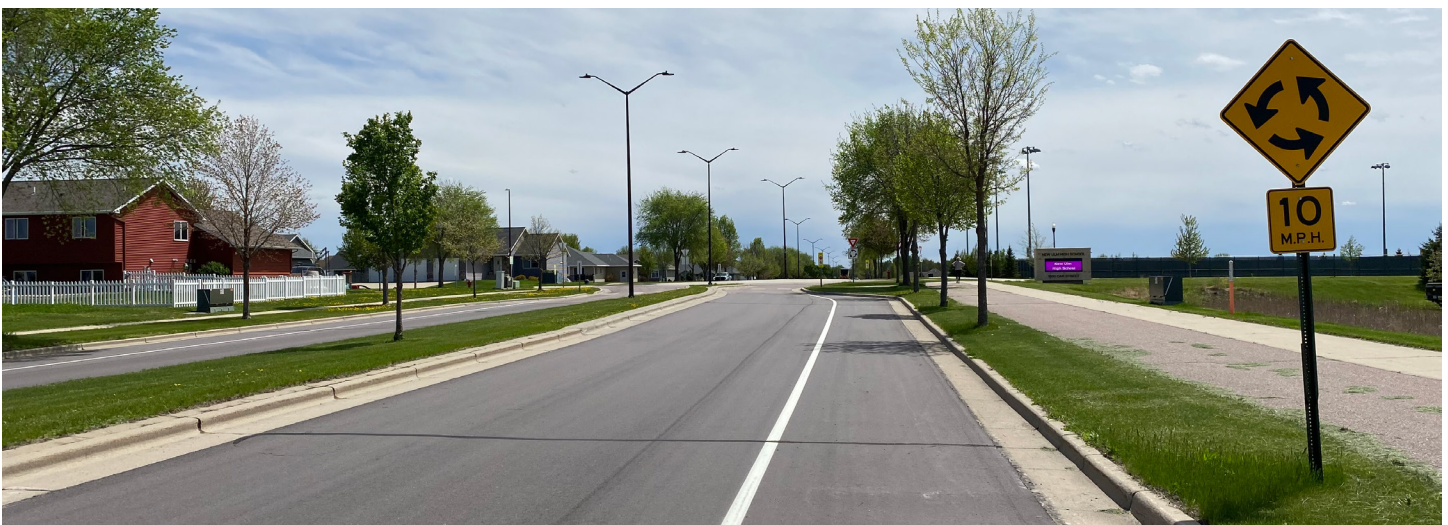


Image source: City of New Ulm

Pedestrian

- Communities like rectangular rapid flashing beacons at all roundabouts, including mini-roundabouts.
- When next to a school, work closely with the school district to discuss walk/bike safety and crossings during drop-off/pickup times.
- Install sidewalk around the entire roundabout even if there is no sidewalk on side roads.



Education/Outreach

- Outreach/education is critical. Start early and continue during and after construction.
- Education is needed to inform the public that larger trucks are intended to traverse the center island; cars are NOT.
- Consider implementing a four-way stop ahead of construction to help educate and change habits.
- Mini-roundabouts may feel different to public; remind them of the general RAB driving guidance (yield, look left, etc.)



10. What are the best practices for winter maintenance of RABs?

Regarding winter maintenance, no best practice was found. The following is a compilation of what Minnesota local agencies provided as lessons learned/common practices:

- Because of the radius of mini-roundabouts, it is recommended to use equipment with tighter turning radius (wheel loader, loader/wing combination, articulating plow), skid steer or a pickup truck.
- Clear snow from the approach lanes and circulatory lane in a similar manner as a standard intersection, with the addition of a few extra passes around the circulatory lanes.
- For center islands, agencies typically do not clear them until about 4-6 inches of snow accumulates. Smaller amounts of snow can be navigated by a truck; once it builds up most agencies clear the truck apron and central island with a bobcat or similar vehicle.



Image source: Steele County

One suggested process for snowplowing mini-roundabouts includes:

- During a storm, clear the roundabout and approaches using tandem snowplows.
- Leave the mini-roundabout covered in snow until after the event is over (due to setup, tandem snowplows can cause damage to mini-roundabout).
- Lift the one-way snow plow up and use the underbody and wing to scrape the roadway (this helps to maintain turning capabilities and to be able to navigate the roundabout without hitting the curb with the one-way plows).
- Treat the roundabout with salt and liquid deicer at the same rates as the mainline roads.
 - » Fan the deicing material out to cover the road surface of the roundabout to provide better traction until melting occurs.
- Within a day or two after the storm, return and clean the truck apron, divider islands, and outside curb of the roundabout using a skid steer, broom or loader with a push blade/box attachment.
- Have a snowplow follow the cleaning operations to scrape any snow off and retreat the drive lanes with deicing material if needed.

Resources for Winter Maintenance

- [Roundabout Maintenance Manual](#) (IN LTAP)
- [Techniques for Plowing Complex Intersections](#) (Clear Roads Video)
[Best Practices and Techniques for Clearing Intersection Layouts](#) (Clear Roads Manual)
- [NCHRP 672 Roundabouts - An Informational Guide – Chapter 10](#)
- MnDOT captured [video of snowplowing the mini roundabout in St. James](#).

TECHNICAL RESOURCES

Design Resources

- [MnDOT Facility Design Guide – Chapter 6](#)
- [NCHRP 672 - Roundabouts: An Informational Guide](#)
- [NCHRP 1043- Guide for Roundabouts](#)

General Information/Outreach

- [National Association of City Transportation Officials – Mini Roundabouts](#)
- [FHWA Brochure](#) on Mini-Roundabouts
- [Manual on Uniform Traffic Control Devices for Streets and Highways](#)
- [Developing Crash Modification Factors for Mini-Roundabouts](#)
- [Roundabout U](#) (Washington County, MN)

Videos

- [MnDOT Mini Roundabout – St. James](#) (video)
- [Navigating Shakopee's' Mini Roundabout](#) (video)

Minnesota Mini-Roundabouts

Agency/Contact	Location	Latitude	Longitude	Year	Posted speed	ADT	New or Retrofit Existing	Previous traffic control?	Primary purpose of installing?	Design resource
Anoka (city) Ben Nelson bnelson@ci.anoka.mn.us	4th Ave/Washington St/ Military Rd	45.19165	-93.385372	2017	30	1700	New	N/A	Capacity/flow	FHWA staff
Baxter Trevor Walter twalter@baxtermn.gov	Forthun Road and Isle Drive	46.347429	-94.250899	2022	30	2000	Retrofit existing	Side street stop	Safety and capacity	MnDOT FCD, Chp 6, NCHRP 672
Crow Wing County Rob Hall Rob.Hall@crowwing.gov	Mapleton Road and Knollwood Drive	46.325306	-94.275869	2020	30	2022 7039	Retrofit existing	Side street stop	Safety and capacity	MnDOT FCD, Chp 6, NCHRP 672
Crow Wing County Rob Hall Rob.Hall@crowwing.gov	Mapleton Road and Jaspewood Drive	46.325252	-94.271074	2020	30	2022	Retrofit existing	Side street stop	Safety and capacity	MnDOT FCD, Chp 6, NCHRP 672
Detroit Lakes Jon Pratt jpratt@cityofdetroitlakes.com	Washington Ave/Willow St Washington Ave/N Shore Dr	46.811332	-95.845682	2021	30	5100 5100/2550	Retrofit existing	Signal	Capacity/flow	NCHRP 672
Edina Chad Millner cmillner@edinamn.gov	Eden Ave/ Arcadia Ave	44.909591	-93.352346	2022	25	7000	Retrofit existing	All-Way Stop/Yield	Safety	MnDOT FCD, Chp 6
Edina Chad Millner cmillner@edinamn.gov	Blake Road/ Interlachen Boulevard	44.91395	-93.383447	2023	30	5500/3500	Retrofit existing	Side street stop	Safety and capacity	MnDOT FCD, Chp 6, NCHRP 672
Edina Chad Millner cmillner@edinamn.gov	Double RAB Eden Ave/ Grange Rd Eden Ave/ Wilson Ave	44.9106, 44.910466	-93.348938 -93.348374	2023	25	8500	Retrofit existing	All-Way Stop/Yield	Safety	MnDOT FCD, Chp 6
Elk River Justin Femrite jfemrite@elkrivernm.gov	Railroad Dr./3rd St NW/Irving Ave NW	45.304193	-93.565454	2013	30	850	Existing	One/Two-Way Stop	Capacity	None
Golden Valley Jeff Oliver joliver@goldenvalleymn.gov	TH 55 Service Road and Douglas Drive	44.984198	-93.360198	2023	30	3500	Retrofit existing	2--way stop	Safety and capacity	MnDOT FCD, Chp 6, NCHRP 672
MnDOT Metro - South Area (Hastings) Bryant Ficek Bryant.Ficek@state.mn.us	STH 316 (Red Wing Blvd.) / Tuttle Dr.	44.70771	-92.83692	2021	35 (design 30)	7500	Existing	One/Two-Way Stop	Improve access, increase safety, better bike/ped facilities, slow vehicle speeds	None
MnDOT Metro - South Area (Hastings) Bryant Ficek Bryant.Ficek@state.mn.us	STH 316 (Red Wing Blvd.) / Tiffany Dr.	44.71337	-92.84315	2021	35 (design 30)	14150	Existing	One/Two-Way Stop	Improve access, increase safety, better bike/ped facilities, slow vehicle speeds	None

Minnesota Mini-Roundabouts

Design vehicle	Inscribed diameter	Truck apron/central island height	Splitter islands?	Are splitter islands traversable?	Height of the splitter islands?	Modified signs or markings	Specialized lighting?	Context around RAB					Education / outreach					Bike/Ped Concerns	Do you feel the mini/compact RABs achieved the desired goals?
								Residential	Commercial	Trails/walks	School (2 blocks)	Park (2 blocks)	On regional trail	Flyer	Newspaper	Website	Council/Board Mtg	Newsletter	
School Bus	90-100	3-4"	No	--	--	A		X		X	X	X					X		Created safer crossing for students and removed stop signs
WB62	94	3-4"	Yes	Yes	3-4"	B,C	N		X	X					X	X	X	X	Yes, Eliminated stop sign, delays and stacking issues. Increased future capacity of the intersection and street.
WB62	94	3-4"	Yes	Yes	3-4"			X			X	X				X	X		
WB62	94	3-4"	Yes	Yes	3-4"			X			X	X				X	X		
WB-67	72	3-4"	Yes	Yes	3-4"	B			X								X		Yes. Eliminated a signal and saved cost and also nearly eliminated delay and stacking issues
WB62	90	3-4"	Yes	Yes	3-4"				X	X	X					X	X		Slowed traffic, improved traffic operations and provided more pedestrian space.
WB62	96	3-4"	Yes	Yes	3-4"			X		X		X				X	X	X	Slowed traffic, improved traffic operations and provided more pedestrian space.
WB62	85	3-4"	Yes	Yes	3-4"				X	X	X					X	X		This is two back to back mini's, slowed traffic, improved traffic operations and provided more pedestrian space.
	50'	4"	Y	N	6"	Y	N		X	X				X		X	X		Yes
WB-50	94	4"	Y	Y	4"					X	X		X			X	X	X	Yes, provided better flow and queue length to signal at TH 55
S-Bus-36, WB-62	90	2"	Y	Y	2"	G, H	N	X		X		X	X		X	X	X	X	Yes, follow-up study will be completed in summer 2024
S-Bus-36, WB-62	90	2"	Y	Y	2"	G, H	N	X		X			X		X	X	X	X	Yes, follow-up study will be completed in summer 2024

A Center colored concrete

B Crosswalk signs were short/custom, standards signs would have blocked view of yield signs. Also added signs that stated "Yield to traffic from left"

C 2-30' LED Cobra

D Decorative/cobra

E MnDOT Type 9-30

F Concerns have been raised by public and council. Vehicles don't see peds crossing.

G Painted center island (yellow)

H Fewer signs compared to standard roundabout design

Minnesota Mini-Roundabouts

Agency/Contact	Location	Latitude	Longitude	Year	Posted speed	ADT	New or Retrofit Existing	Previous traffic control?	Primary purpose of installing ?	Design resource
MnDOT Metro - South Area (Hastings) Bryant Ficek Bryant.Ficek@state.mn.us	STH 316 (Red Wing Blvd.) / Spiral Blvd.	44.71779	-92.84744	2021	35 (design 30)	12300	Existing	One/Two-Way Stop	Improve access, increase safety, better bike/ped facilities, slow vehicle speeds	None
Hennepin County Jessa Trboyevich Jessa.Trboyevich@hennepin.us	Territorial Road and Brockton Lane	45.165803	-93.521372	2021	45	10500	Retrofit existing	Side street stop	Capacity	MnDOT FCD, Chp 6, NCHRP 672
Hutchinson Mike Stifter mstifter@hutchinsonmn.gov	S Grade Rd SW/ (parking lots)	44.878046	-94.377096	2020	30	5800	Retrofit existing	One/Two-Way Stop	Safety & Flow	Consultant
Mankato Michael McCarty mmccarty@mankatomn.gov	Shalom Ave/ Dancing Waters Dr	44.150004	-93.960344	2015	30	500	New	N/A	Safety	MnDOT FCD, Chp 6
Maple Grove Chris LaBounty clabounty@maple-grovern.gov	Fernbrook Lane and Territorial road	45.142926	-93.462137	2022	40	8500	Retrofit existing	Side street stop	Safety and capacity	MnDOT FCD, Chp 6, NCHRP 672
New Prague/Scott County Chris Knutson cknutson@sehinc.com	7th St NE/ Columbus Ave.	44.550875	-93.573776	2019	40(N), 30(S) 35 (W/E)	2550 4950	Retrofit Existing	All Way Stop	Safety and Capacity	Consultant
New Prague/Scott County Chris Knutson cknutson@sehinc.com	12th St NE/ Columbus Ave.	44.557905	-93.574131	2019	40 (S), 30 (N/E/W)	4350 4950	Retrofit Existing	All Way Stop	Safety and Capacity	Consultant
New Prague/Scott County Chris Knutson cknutson@sehinc.com	Main St. E (TH19)/ Columbus Ave.	44.54358	-93.57342	2021	30	7748 2450	Retrofit Existing	Side Street Stop	Safety and Capacity	MnDOT/ Consultant
New Prague/Scott County Chris Knutson cknutson@sehinc.com	Main St. E (TH19) / 1st Ave. NE-1st Ave. SE	44.543588	-93.575592	2021	30	7748 1562	Retrofit Existing	Signal	Safety and Capacity, Eliminate Signal	MnDOT/ Consultant
New Ulm Joseph Stadheim joes@newulmmn.gov	North Highland Ave/ Oak St	44.316286	-94.486	2019	30	3450 1700	Retrofit existing	Thru-Stop/ Yield	Safety and capacity	Consultant
Plymouth Mike Payne mpayne@plymouthmn.gov	Vicksburg Lane/ Gleason Lake Drive/ Co. Rd. 15	44.978864	-93.481473	2023	35	9000 6600 5100	Retrofit existing	All-Way Stop/ Yield	Safety and capacity	Consultant

Minnesota Mini-Roundabouts

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								Residential	Commercial	Trails/walks	School (2 blocks)	Park (2 blocks)	On regional trail	Flyer	Newspaper	Website	Council/Board Mtg			Newsletter
S-Bus-36, WB-62	90	2"	Y	Y	2"	G, H	N		X	X			X		X	X	X	X		Yes, follow-up study will be completed in summer 2024
WB62	96	3-4"	Yes	Yes	3-4"			X	X							X				This was put in as a temporary traffic control for 94 Design Build, left in as permanent
S-Bus-40	80	D-4 mod to 2"	Yes	Yes	2"		C		X	X					X		X		X	Made ped crossings safer, went from 5 lanes to 2. It works and it's safer.Due to its 'mini' nature, we heard a lot of negative comments about it initially, but those have subsided.
Truck	55	3-4"	No	--	--			X												Provided some traffic calming and safety in neighborhood.
WB62	96 ellipti- cal	3-4"	Yes	Yes	3-4"			X	X							X				Yes, it aided in capacity and safety improvements in the current interim condition.
WB-62, School Bus	98'	2"	Y	Y	2"	A	N	X		X	X	X					X	X	X	Yes. Traffic previously would back up at stop signs before/after school. Flows much better now. Pedestrian crossings are also improved.
WB-62, School Bus	90'	2"	Y	Y	2"	A	N	X		X	X	X					X	X	X	Yes. Traffic previously would back up at stop signs before/after school. Flows much better now. Pedestrian crossings are also improved.
WB-67, Low boy (Vertical)	80'	4"	Y	Y	3"	A	N	X	X	X	X	X			X	X	X	X	X	Yes, traffic moves well through town and side streets cross easier. Splitter islands reduce crossing distance for pedestrians with some refuge.
WB-67, Low boy (Vertical)	80'	3"	Y	Y	3"	A	N	X	X	X	X	X			X	X	X	X	X	Yes, traffic moves through down- town well. Splitter islands reduce crossing distance for pedestrians with some refuge.
S-BUS-40	92	3-4"	Yes	Yes	3-4"			X		X	X			X	X		X			Yes, improved traffic flow at the New Ulm High School.
WB-62 & School Bus (w/low boy-house mover on Gleason Lake)	Ellipse 118'- 94'	3-4"	Yes	No	4"	A	D	X			X					X	X	X		Handled the peak volumes of the school traffic with a unique existing intersection

A Center colored concrete

B Crosswalk signs were short/custom, standards signs
would have blocked view of yield signs. Also added
signs that stated "Yield to traffic from left"

C 2-30' LED Cobra

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F Concerns have been raised by public and council.
Vehicles don't see peds crossing.

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Prior Lake Andy Brotzler abrotzler@cityofpriorlake.com	Village Lake Dr. SE / Duluth Ave. SE	44.705568	-93.429796	2019	30	4500/4700	Retrofit existing	One/Two-Way Stop	Capacity/flow/ accessibility	NCHRP 672/ consultant
Ramsey County Nick Fisher nicklaus.fischer@co.ramsey.mn.us	Lexington Ave Montreal Ave	44.91271	-93.146332	2023	30	4100/8800 5800/1600	New	T w/stop on approach; converted to 4-leg RAB	Safety and capacity	MnDOT FCD, Chp 6 NCHRP 672
Richfield Joe Powers JPowers@richfieldmn.gov	Lyndale Ave. S / W 68th St.	44.879846	-93.287895	2019	30	9331	Retrofit existing	One/Two-Way Stop	Safety and capacity	Consultant
Richfield Joe Powers JPowers@richfieldmn.gov	Lyndale Ave. S / W 67th St.	44.881786	-93.287366	2019	30	9331	Retrofit existing	Signal	Safety and capacity	Consultant
Rochester Dillon Dombrovski ddombrovski@rochestermn.gov	18th Ave. NW / 48th St. NW	44.071677	-92.488785	2018	40	9900	Retrofit existing	One/Two-Way Stop	Safety and capacity	Consultant
Rochester Dillon Dombrovski ddombrovski@rochestermn.gov	36th Ave. NW / 4th Pl. NW	44.028569	-92.519062	2022	25 20 (school)	2150	Retrofit existing	Signal	Safety and capacity	Consultant
Rochester Dillon Dombrovski ddombrovski@rochestermn.gov	Bella Terra Rd. NE / Shannon Oaks Blvd. NE	44.03676	-92.41353	2023	25	1000	Existing	None (new)	Identified mitigation method to meet traffic service standards	None
Savage Seng Thongvanh sthongvanh@cityofsavage.com	S Park Dr. Louisiana Ave. S	44.739326	-93.369059	2016	35 45	5500 4500	Retrofit existing	One/Two-Way Stop	Flow	MnDOT FCD, Chp 6 NCHRP 672
Scott County Tony Winiecki TWiniecki@co.scott.mn.us	Vierling Dr. (E-W) CR 79 (Spencer St. S) (N-S)	44.783351	-93.520165	2014	30 45 S leg	3700 7000	Retrofit existing	All-Way Stop	Safety and capacity	Consultant FHWA
St James - MnDOT Zachary Tess zachary.tess@state.mn.us	1st Ave. S / 7th St. S	43.982469	-94.627128	2017	30	3350 4300 2550	Retrofit existing	Signal	Safety & Mobility	Consultant

Minnesota Mini-Roundabouts

Design vehicle	Inscribed diameter	Truck apron/central island height	Splitter islands?	Are splitter islands traversable?	Height of the splitter islands?	Modified signs or markings	Specialized lighting?	Context around RAB					Education / outreach					Bike/Ped Concerns	Do you feel the mini/compact RABs achieved the desired goals?	
								Residential	Commercial	Trails/walks	School (2 blocks)	Park (2 blocks)	On regional trail	Flyer	Newspaper	Website	Council/Board Mtg			Newsletter
school bus	96'	3"	Yes	Yes	4"				X	X										Yes, it worked to allow entrances adjacent to be right-in/right out by providing U-turn capabilities
School Bus (SU 30) WB 62 control vehicle	100	2"	Yes	No	6"			X	X	X							X	X		Yes, manages access and operations safely and efficiently.
School Bus	80	3-4"	Yes	Yes	4"	A		X	X	X		X		X	X	X	X	X		Yes, helped address a safety concerns and vehicle speeds. Greatly improved pedestrian and bike accommodations.
School Bus	90	3-4"	Yes	Yes	4	A		X	X	X		X		X	X	X	X	X		Yes, helped address a safety concerns and vehicle speeds. Greatly improved pedestrian and bike accommodations.
WB-62	90	3-4"	Yes	Yes	3-4"			X	X	X		X		X		X	X	X		Yes, provides for safer intersection operations and crossings between neighborhoods. Better connectivity to walking/biking.
WB-62 & School Bus	75	3"	Yes	Yes	3"			X		X	X	X				X	X			Adjacent to an elementary school and is functioning well. However, we've only allowed a ped crossing on one leg to the school and has created some challenges for crossing guard to ensure people only use north leg during school times.
WB-62 & School Bus	72'	3"	yes	yes	3"			X		X		X					X			Yes, helps with traffic calming and intersection control per the traffic study that was required for the subdivision.
School bus WB-62 (control)	90	3"	Yes	Yes	3"		X	X		X	X	X				X	X	X		Yes, improved safety especially for young drivers (Prior Lake-Savage High School)
Large Fire Truck	80	<6"	Yes	No	4"			X		X	X		X						X	The intersection still has a high crash rate (32 crashes in the last five years, including 1 serious injury and 1 minor injury). Majority of crashes are property damage. Compact nature of roundabout does provide significant gaps
WB-62	"Ellipse - 73' 7' tangent btw ctr pts"	2"	Yes	Yes	2"	A,G			X	X		X		X	X	X	X			Yes, improved safety and traffic flow.

A Center colored concrete

B Crosswalk signs were short/custom, standards signs would have blocked view of yield signs. Also added signs that stated "Yield to traffic from left"

C 2-30' LED Cobra

D Decorative/cobra

E MnDOT Type 9-30

F Concerns have been raised by public and council. Vehicles don't see peds crossing.

G Painted center island (yellow)

H Fewer signs compared to standard roundabout design

Minnesota Mini-Roundabouts

Agency/Contact	Location	Latitude	Longitude	Year	Posted speed	ADT	New or Retrofit Existing	Previous traffic control?	Primary purpose of installing?	Design resource
St James - MnDOT Zachary Tess zachary.tess@state.mn.us	1st Ave. S / Armstrong Blvd. N	43.982058	-94.628323	2017	30	4100 5400 4300	Retrofit existing	Signal	Safety & Mobility	Consultant
St. Michael Steve Bot steveb@stmich-aelmn.gov	MacIver Ave/ Frankfort Pky	45.21743184	-93.6441879	2023	45	4000	Retrofit existing	Thru-Stop/Yield	Safety	MnDOT FCD, Chp 6
Steele County Paul Sponholz paul.sponholz@steelecountymn.gov	CSAH 19 Rose Street Grove Avenue	44.087925	-93.22098	2020	30	6100/6900 4950/5500	Retrofit existing	All-Way Stop/ Yield	Capacity/flow	NCHRP 672
Steele County Paul Sponholz paul.sponholz@steelecountymn.gov	CSAH 34 (26th Street) CSAH 1 (Cedar Avenue)	44.109779	-93.226723	2021	30/55 45/45	10000/8000 4750/2750	New	N/A	Capacity/flow	NCHRP 672
Winona Brian DeFrang bdefrang@ci.winona.mn.us	Gilmore Ave. / W Service Dr. / US 14 Connector	44.048784	-91.678892	2016			Retrofit existing	One/Two-Way Stop	Eliminate confusing intersection	Consultant
Wright County Chad Hausmann Chad.Hausmann@co.wright.mn.us	CSAH 30/ Tiger Drive (Delano)	45.050038	-93.776832	2021	30	1843	Retrofit existing	Thru-Stop/Yield	Safety and capacity	MnDOT FCD, Chp 6 NCHRP 672
Wright County Chad Hausmann Chad.Hausmann@co.wright.mn.us	CR 119 (45th Street) / Jansen Ave (St. Michael)	45.217196	-93.688496	2022	40	4637	Retrofit existing	Thru-Stop/Yield	Safety and capacity	MnDOT FCD, Chp 6 NCHRP 672
Wright County Chad Hausmann Chad.Hausmann@co.wright.mn.us	CSAH 8 CSAH 57 Elm Avenue (Maple Lake)	45.229551	-93.994378	2018	30	1900 1100 <300	Retrofit existing	One/Two-Way Stop	5-legged mini to address safety/speed concerns	MnDOT FCD, Chp 6 NCHRP 672
Wright County Chad Hausmann Chad.Hausmann@co.wright.mn.us	CSAH 18 (50th St)/ CSAH 22 (Naber Avenue)	45.224439	-93.623971	2018	45	5000	Retrofit existing	All-Way Stop/ Yield	Safety and capacity	MnDOT FCD, Chp 6

Minnesota Mini-Roundabouts

Design vehicle	Inscribed diameter	Truck apron/central island height	Splitter islands?	Are splitter islands traversable?	Height of the splitter islands?	Modified signs or markings	Specialized lighting?	Context around RAB						Education / outreach					Bike/Ped Concerns	Do you feel the mini/compact RABs achieved the desired goals?
								Residential	Commercial	Trails/walks	School (2 blocks)	Park (2 blocks)	On regional trail	Flyer	Newspaper	Website	Council/Board Mtg	Newsletter		
WB-62	85	2"	Yes	Yes	2"	A,G			X	X		X		X	X	X	X			Yes, improved safety and traffic flow.
WB 67	90	3-4"	Yes	No	--		D	X												
WB-62	74	1-2"	Yes	Yes	1-2"			X	X	X							X			Design is more suited for a resi- dential street; not a CSAH. Crash rate has exceeded expectations, 13 crashes/yr on average since opened (vs 4 crashes with a allway stop). Operations has improved.
WB-62	89	3-4"	Yes	Yes	3-4"		E		X	X			X							The CSAH 1/CSAH 34 RAB is designed similar to CSAH 19 and functions similar to full sized with deflected approaches.
WB-62	86	4"	Yes	Yes	4"	X			X	X					X	X	X			Yes, seems like the best option for this strange intersection
School bus WB-62 (control)	90	3-4"	Yes	Yes	3-4"			X		X	X	X					X			Yes! The safety and traffic flow issues near the school in Delano were improved.
School bus WB-62 (control)	100	3-4"	Yes	Yes	3-4"			X		X	X	X					X			Yes! Provided for a safer crossing in a speed transition area in St. Michael near a park.
School bus WB-62 (control)	Ellipse 110'- 82'	4"	Yes	Yes	4"		X	X	X						X		X			Yes, helped address safety concerns and speed transition area from exiting TH55 traffic into residential area
WB 67	96	3-4"	Yes	Yes	3-4"						X					X	X			Yes, much safer, less severe crashes.

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Image source: WSB



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