

NCITE Geometric Design Committee

4/20/2017 Meeting Minutes

8:30 AM – 10:00 AM

Location: Stantec
2335 Highway 36 West
St. Paul, MN 55113

Committee Chair:
Kelly Besser, Stonebrooke Engineering
952-540-4848
kbesser@stonebrookeengineering.com

Committee Co-Chair:
Tom Jantscher, HR Green
651-659-7769
tjantscher@hrgreen.com

Meeting Minutes:

I. Introductions

- See attached sign in sheet.

II. Presentation and Roundtable Discussion:

MnDOT Roundabout Steering Committee Design Guidelines Presentation and Roundtable: Part II

- A roundtable discussion topics list was provided at the meeting. See attached for notes on topics discussed.

III. Next Meeting: Thursday, June 22, 2017, same time and location.

- Topic will be Part III of today's discussion.

NCITE Geometric Design Committee

Roundabout Design Roundtable Discussion Topics - Meeting Notes

4/20/2017

1. Phi angles – What is the preferred method of determining this measurement? When is it appropriate to use $2(\phi)$ instead? Will this measurement be required on L1 layouts in the future?
 - MnDOT requires a phi angle exhibit on the layout.
 - 25 degrees is optimal.
 - Not a controlling factor, but should be considered to avoid an uncomfortable angle to look backward for entry into the roundabout, and for ease of entry to the right.
 - $2\phi/\phi$ is used for “ideal”, squared up intersections. Guidelines for how to measure this will be provided in the updated Chapter 12 of RDM.
 - Path overlap is important to check for multilane entries.
2. What is approach leg deflection and effect on reducing speeds entering roundabouts?
 - Some deflection is good, but too much results in large amount of R/W impacts.
 - Splitter island length can be determined by the SSD from approach to entry. MnDOT is backing off this slightly to try to reduce lengths as appropriate.
3. Design speed on approach legs versus design speed approaching/within roundabout – at what point does the design speed no longer apply on approaches/exits?
 - Each situation is different, but the goal is to slow vehicles. Superelevation should be provided up to the splitter island nose, but beyond that any super provided will allow the driver to continue at a higher speed versus slowing them down. Consider supering for a lower speed than the approach leg design speed.
4. What are commonly used inscribed circle diameter ranges and impact on safety, volumes, etc? When would a non-traditional shaped central island be used?
 - 150'-165' are typical for single lane, 180'-200' for multi lane.
 - An ellipse-shaped central island might help with acute entry angles.
5. Tangential exit geometrics can be beneficial for large vehicles exiting roundabouts. Does this impact speed differentials through the roundabout?
 - R2-R3 is usually limited by acceleration and there is no strict adherence to speeds for this value.
 - R1 and R2 differential is the most important relationship.
 - To control R values, keep the outside curbs as close to the ICD as possible.
 - To accommodate larger vehicles, the splitter island end can be pulled away from the alignment, which doesn't affect fast path.
 - Make signs removable on the splitter island ends so they can be removed when OSOW vehicles need to traverse the intersection.

6. ADA/bicycles and roundabouts – discuss design guidance for slip ramps and splitter island cut-throughs. Trail runout into shoulder on departure sides – how has this been working?
 - Slip ramp designs should be simplified as much as possible.
 - Limit the amount of curb used - the curb can end in a rural setting once the slip ramp ties to the roadway.
 - Free rights need to be considered for ped accommodations so they aren't too confusing for users.
7. What are some common “mistakes” you see during your reviews?
 - Overdesign and not having sufficient data to support more than a 1x1 roundabout.
 - Medians too long/large.
 - Unnecessary truck aprons.
8. What are some rules of thumb for different design parameters that MnDOT has or prefers?
 - Left offset approaches.
 - 13'-14' truck aprons.

The discussion ended after topic 8. We will continue the remaining roundtable topics along with additional topics TBD at the next GDC meeting scheduled for June 22, 2017.

9. Any suggestions/considerations for designing a single-lane roundabout to allow for conversion to a multi-lane roundabout in the future?
10. Signalized pedestrian crossings.
11. Signing – optional vs required from the MUTCD figures (roundabout ahead warning signs).
12. Rigid fast path adherence in all situations (small odd-shaped rdbts and very large roundabouts).

NCITE GEOMETRIC DESIGN COMMITTEE MEETING

Thursday, April 20th, 2017, 8:30 AM to 10:00 AM

Name	Representing	Phone Number	Email Address
Jim Rosenow	MnDOT	651-366-4673	james.rosenow@state.mn.us
Jamal Love	MnDOT	651-366-4688	Jamal.Love@state.mn.us
Tom Fidler	Stattec	651 604 4810	tom.fidler@stattec.com
Ben Hbsett	SRF	651.492.7609	BHBSSETT@SRFCONSULTING.COM
Matt Fowler	STANTEC	(651) 604-4722	MATT.FAWLER@STANTEC.COM
Jake Duppeny	Stonebrooke Engineering	651 431 1986	Jduppeny@stonebrookeengineering.com
Brett Johnson	HR Green	651-659-7775	bjohnson@hrgreen.com
Tom Jantscher	HR Green	(651) 655-7769	tjantscher@hrgreen.com
Ken Johnson	MnDOT OTST	651-234-7386	ken.johnson@statemn.us
Kelly Besser	Stonebrooke	952-540-4848	kbesser@stonebrookeengineering.com