



MEMORANDUM

TO: Angela Gemmer – Senior Planner

FROM: Jesse Hannahs, P.E. – Traffic Engineering Manager

DATE: December 14, 2022

SUBJECT: PA 21-039 – Marysville 10 Degrees

I have reviewed the Roundabout Designs for the proposed Marysville 10 Degrees Project west of Twin Lakes Blvd. and north of 156th ST NE and have the following comments:

- 1) The review is limited in scope to Roundabout Design only.
 - a. No other elements of submitted plans were reviewed as part of this submittal.
 - b. Roundabout shall be constructed as part of subject development.
- 2) Roundabout design shall be per WSDOT Design Manual Chapter 1320:
 - a. Roundabouts shall be designed as Compact or Single Lane with:
 - i. Inscribed circle diameters meeting recommended practices per 1320.04(2)(e).
 1. Compact = 65' to 120'
 2. Single Lane = 80' to 150'
 - ii. Median splitter islands meeting recommended practices including island length per 1320.04(2)(d).
 1. Minimum island length to be considered shall be 30' at minimum.
 - iii. Plans shall clearly designate Roundabout style to be proposed.
 - b. 30% Roundabout design is strongly encouraged at 1st Civil Construction submittal and shall be required at 2nd civil construction review.
 - i. 30% Roundabout review shall include:
 1. Full layout of roundabout including median islands.
 2. Full turning templates of design vehicles including plan identification of curbing/aprons necessary to accommodate such design vehicles.
 3. Proposed roundabout channelization.
- 3) ROW Necessary:
 - a. 19th Ave NE & 164th ST NE Roundabout:
 - i. Inscribed circle diameter per submitted plans approximately 120'.
 - ii. Median islands with refuge are significantly less than minimum length of 30'.

- iii. Pedestrian refuge island for multi-use trail is significantly smaller than necessary to provide refuge to multi-use trail users such as a bicycle with bike trailer.
 - iv. Additional ROW is likely necessary for acceptable design, especially to accommodate median islands with pedestrian refuge.
 - b. 19th Ave NE & 30th Ave NE Roundabout:
 - i. Inscribed circle diameter per submitted plans appears to be greater than 150'
 - ii. Median islands lengths at best appear to be near minimum length of 30'.
 - iii. Pedestrian refuge island for multi-use trail is significantly smaller than necessary and/or not present to provide refuge to multi-use trail users such as a bicycle with bike trailer.
 - iv. Additional ROW is likely necessary upon all approaches for acceptable design to accommodate median islands with pedestrian refuge.
- 4) 19th Ave NE & 164th ST NE Roundabout:
 - a. Design Vehicle Turning Templates shall be run through roundabout and provided as part of Roundabout Plan review process.
 - i. Design vehicle(s) shall be a Community Transit Bus and a WB-40 truck.
 - ii. Center island details shall be provided to clearly designate whether island is fully drivable or is to have aprons where turning templates indicate necessity.
 - b. Median islands:
 - i. Shall be installed on all approaches.
 - 1. Median island with marked crosswalk shall be added upon east leg of roundabout and serve as pedestrian refuge with pedestrian pathway cut through island.
 - a. Given that multi-use paths continue north/south through roundabout, pedestrian refuge island shall be wide enough to accommodate multi-use trail traffic including at a minimum the length of a standard bicycle with bike trailer.
- 5) 19th Ave NE & 30th Ave NE Roundabout:
 - a. Design Vehicle Turning Templates shall be run through roundabout and provided as part of Roundabout Plan review process.
 - i. Design vehicle(s) shall be a Community Transit Bus and a WB-40 truck.
 - ii. Center island details shall be provided to clearly designate whether island is fully drivable or is to have aprons where turning templates indicate necessity.
 - b. Median islands:
 - i. Shall be installed on all approaches.
 - 1. Median island with marked crosswalk shall be added upon west leg of roundabout and serve as pedestrian refuge with pedestrian pathway cut through island.
 - a. Given that multi-use paths continue north/south through roundabout, pedestrian refuge island

shall be wide enough to accommodate multi-use trail traffic including at a minimum the length of a standard bicycle with bike trailer.

2. Median island with future modification to pedestrian refuge and marked crosswalks shall be added upon north and south legs of roundabout.
 - a. Given that multi-use paths will be present through roundabout, future pedestrian refuge island shall be wide enough to accommodate multi-use trail traffic including at a minimum the length of a standard bicycle with bike trailer.
 - b. Islands shall be designed in a manner that will easily provide for future modifications to install crosswalk and pedestrian refuge such as refuge construction with removable curbing install through opening.
- 6) Channelization and signing plan shall be required for proposed roundabouts as part of civil construction plans.
 - a. Channelization:
 - i. Channelization Plan for roundabouts is critically important to the full review of any roundabout.
 - ii. Yield lines shall be installed upon all approaches to roundabouts.