

# Comments on SMTC Roundabout Study 2016

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## Summary

The locations of the suggested roundabouts all seem very worthwhile for roundabout treatment. While the Thompson Rd / Springfield Rd roundabout seems properly sized, the Onondaga Circle roundabout seems much too large, and the Comstock Ave / Colvin St 2-lane roundabout seems a bit chaotic in design, and perhaps a 1-lane roundabout might be more appropriate for this location.

There are many different types of successful roundabouts in existence, from complex highly structured designs to very loosely structured or relaxed designs. The rigidity of design is dependent on location needs. A tiny roundabout consisting of a medallion in the middle of an intersection may suffice for a small low-traffic urban location; a highly engineered 2-lane turbo roundabout may be appropriate in a higher speed and higher traffic suburban location. The European experience in roundabout design is very informative (See: [Roundabouts in Germany: Lessons Learned](#)).

## Onondaga (Leavenworth) Circle



Figure 1: Reference: SMTC Onondaga Circle roundabout proposal.

This intersection of W Onondaga St, Onondaga Ave, Delaware St, and Tallman St should benefit greatly from a roundabout solution. However, the suggested roundabout, at 150ft outside diameter, seems too large for a 1-lane roundabout. The location is primarily residential with modest traffic. A 110ft roundabout should be sufficient for all traffic including Interstate class tractor trailers. A larger roundabout would increase speed, which is neither useful nor desirable in an urban residential setting where connecting streets have 30 mph speed limits. Moreover, a larger roundabout will appear out-of-place and less attractive in such urban setting. A right-sized roundabout will feel more cozy, have narrower street crossings, and lend itself to function as a local “square”, attracting pedestrian and small retail activity (if generous pedestrian space is included).

Here are some of the considerations used to guide the alternative design (Figure 2) below :

- One might assume that a 5-leg roundabout would require a slightly larger than 110ft diameter (perhaps an extra 10ft) to accommodate the extra leg. However, this does not appear to be the case, as the design attempt (Figure 1) below seems to bear out.
- Given the 1-lane each way connecting streets, a 1-lane roundabout with 1-lane entries and exits and no slip lanes of any kind seems appropriate. This will make the roundabout right-sized for the neighborhood and cozy.
- In the existing intersection, the sharpest turn (~15ft inner radius) is from Tallman St immediately to W. Onondaga St east. Today, a W50 class truck has to overshoot it’s lane to make that turn. Apparently, this is not a problem, perhaps because few such trucks make this turn, and traffic is light enough to give trucks extra space when needed (as happens at many intersections). In any case, a roundabout, even a modest sized one, can increase the smallest existing radius turn significantly.
- With 1-lane entries and exits, the street will be narrow enough for pedestrians to cross without the need for a raised center median (pedestrian island) for safety.
- By eliminating raised medians, large trucks will be able to overshoot their lane—if ever necessary. In any case, the design below resolves this problem of the current intersection.
- This location, being residential and with modest traffic, lends itself to a simple relaxed-design roundabout. In fact, the original dimensions of Onondaga Circle (est. ~45-50ft center island, 25-30ft over-sized lane, minimal road markings) could be largely replicated to advantageous, practical, and aesthetic effect.
- The optional over-sized travel lane, as depicted in Figure 2, provides extra turning flexibility/convenience for all vehicles, can be more aesthetic, and also makes it more comfortable for car and cyclist to share space. (1-lane roundabouts are universally considered safe for cyclists).

Following is a (non-professional) sketch design of a modest sized 110ft roundabout that, despite having 5 legs, has large enough entry/exits radius curves to allow large trucks to negotiate all turns.<sup>1</sup>

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<sup>1</sup>Design note: the two southern legs of the roundabout can easily be made straighter as a further optimization. I was too lazy to make the revision.



Figure 2: Onondaga Circle concept – 110ft diameter, 50ft center island, 30ft travel lane. Placed on assumed original location. This configuration provides abundant building and pedestrian space for creating a mixed-use public square environment for the neighborhood.



Figure 3: Onondaga Circle concept – Angled view.

## E. Colvin St & Comstock Ave

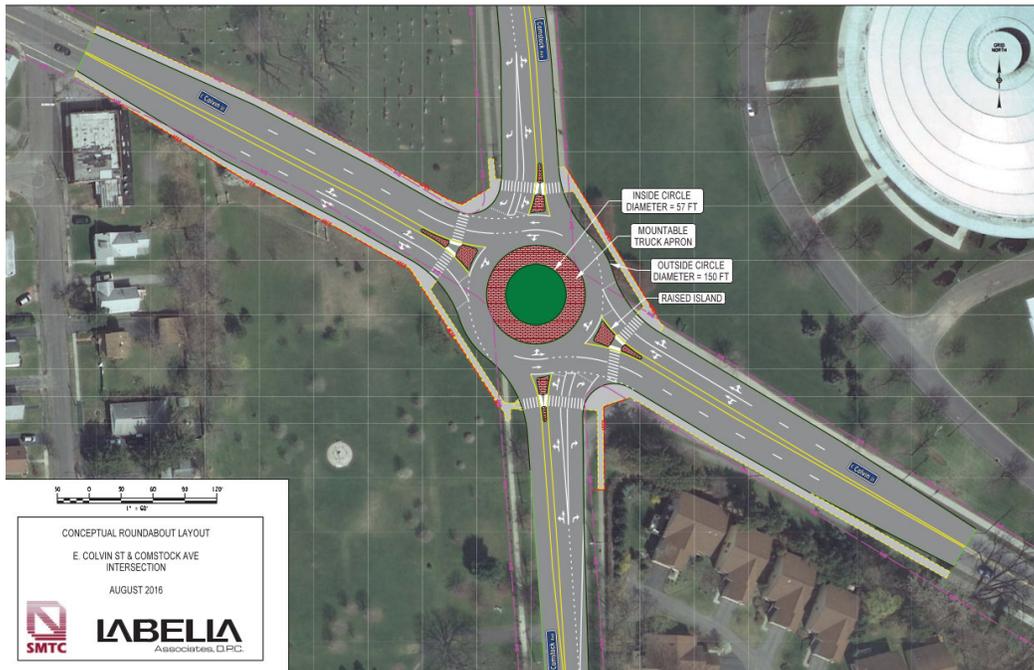


Figure 4: Reference: SMTC Comstock/Colvin roundabout proposal.

This intersection should benefit nicely from a roundabout solution. The SMTC roundabout concept has two lanes. This is presumably due to the existing 2-lane approaches. However, all four legs of the roundabout are 1-lane each way; they widen at the current intersection to add turning lanes, an optimization strategy for lighted intersections. But this is an artifact of lighted intersections, and is not needed or desirable in a roundabout solution where traffic flow is continuous and capacity is nearly double that of a lighted intersection. Normally, a roundabout connected to roads with one lane each way will have one lane as well.

Understanding that it is just an initial concept, the roundabout has one major design detail of concern: traffic on Comstock Ave (either direction) that turns immediately right on Colvin St negotiates what is (for lack of better terms) virtually an integrated slip lane (vehicle never enters the circle proper); and it faces roundabout exit traffic at 90 degrees, which appears to be a traffic hazard. Separately, in order to increase the smallest turn radii of the unfortunately aligned streets, consider moving the roundabout slightly eastward toward Manley Field House and re-aligning E Colvin St and N Comstock Ave accordingly. A single lane roundabout solution would resolve both issues.

Given that the connecting streets have one lane each way, a 1-lane roundabout seems more appropriate for this location. The benefits of a 1-lane roundabout are several: it can be smaller ( $\leq 120$ ft vs 150ft diameter); it is easier for pedestrians to cross (narrow 2-lane street); it is suitable for cyclist to use; it is less imposing and fits better in a residential/mixed-use setting; and it will be somewhat safer and less expensive to build. I urge SMTC to review its rationale for a 2-lane roundabout and to take a further look at a 1-lane roundabout solution.

# Thompson Rd & Springfield Rd



Figure 5: Reference: SMTC Thompson Rd / Springfield Rd roundabout proposal.

This intersection should benefit nicely from a roundabout solution. Overall traffic is modest and only feels congested at times due to the current All-Way Stop design. Given that all three connecting streets are 1-lane each way, the proposed 1-lane roundabout and its diameter of 105ft seems ideally sized (i.e., no bigger than necessary).

Based on first impressions, the geometry may benefit if the roundabout is shifted slightly westward and southward, with the Springfield Rd connecting head on, and the Thompson Rd legs connecting head on or shifted slightly further still to the east, all to reduce to a minimum any excessive degree of “roundaboutness” a driver will experience. Also, the truck apron diameter could be reduced substantially in favor of an over-sized lane so as to **not** discourage cars from making a more compact and convenient turn.

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<http://arsteca.net/i81>