

IN SUPPORT OF ROUNDABOUTS

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Sponsored by the East Norwalk Neighborhood Association, I recently attended a seminar in North Haven, organized by Bob White, founder of North East Area Roundabouts. The main presenter was Howard McCullough, who divides his time between private consulting and the NYSDOT, where he is an expert on roundabouts. A second presenter was from ConnDot, who described the construction of Connecticut's first roundabout in West Haven. I was cautiously in favor of them before I went, but now am an enthusiastic supporter.

Four years ago, people would not return Bob White's phone calls when he wanted to discuss roundabouts. Today, the demand for information is growing exponentially. Perhaps the most striking development is that New York State now mandates that roundabouts be the first option to be considered for a new intersection, and that signals be used only if roundabouts are proved to be impractical (because of the size of the road, unavailability of land, steep grades, or a few other impediments).

New York has taken this step for a good and simple reason. Recently, they completely rebuilt a dangerous signalized intersection at a cost of many millions. One week later, someone was killed at the intersection. This would not have happened if they had designed a roundabout (because of their extraordinary safety). Thus, the State's Corporation Counsel determined that if they continued this practice, the NYSDOT would sooner or later lose a lawsuit on account of negligence, because a safer option was available and was not considered. Hence, the safest option must be rejected for cause before the State's lawyers feel they have a comfortable legal basis for installing a much less safe alternative, a signalized intersection.

ConnDOT is considering roundabouts, but taking it very slowly. For example, it did not consider them in the design of the Merritt – Route 7 interchange. It is trying them on a limited basis (we have one). Currently, there are 1000 roundabouts in place across the country, with 400 projected for this year. In New York State, there are 12, with 50 in planning. France, which has 20,000, is currently removing every possible existing signalized intersection and replacing it with a roundabout.

Roundabouts are *not* traffic circles or rotaries. Unless you have driven in Europe, you may not have seen one. Roundabouts have several key features: they must slow traffic to 15 mph on entering the roundabout; entering traffic must yield; they almost always have "splitters" to guide entering and leaving vehicles; they must not allow pedestrians into the circle; and they must not have signals. Typical roundabouts are 110 to 200 feet in diameter, and they can be dogbone shaped to deal with somewhat separated streets (they fit nicely in the center of existing traffic circles). On streets where large trucks will definitely never drive (no big moving vans), a "mini-roundabout" can be set in the middle of an existing intersection (Boulder, Colorado, has many of these, and they are very attractive).

Roundabouts can be built at a 4% slope, and the entering roads can slope down toward the roundabout at up to 8%. When an entering road slopes up to the roundabout, a tall element is needed to announce its impending presence to an approaching driver, who can't see it over the crest of the hill. Roundabouts work fine on 65 mph roads. While two-lane roundabouts are trickier to design than one-laners, with proper signing and striping they work fine (a key element is a directional pavement arrow called a "fishhook" that successfully prevent undesirable land-crossing within the roundabout). All this knowledge has very recently

become state-of-the-art, as designers have begun to see how various ideas work out in the U.S.

There are some negatives: while dark roundabouts may work fine (no one knows), all examples built are well-lit, and are likely to be built well-lit in the near future, which might be problematic in certain residential neighborhoods. For a typical intersection, about 8 additional signs are required. ADA advocates, based on questionable "studies," are trying to insist on pedestrian signals at the entry to roundabouts, which will effectively kill them by making them unworkable. For this reason, it is unlikely that the ADA will prevail, but this controversy will cause trouble until it is resolved. A popularizer, Dan Burden, holds charrettes that generate terrific enthusiasm, but propose unworkable solutions that disappoint participants and often turn the community against roundabouts. The FHWA, while providing useful details in its manual, stubbornly insists on several very bad design features that are impeding the success of roundabouts.

Safety is always the basis for using a roundabout. Although roundabouts greatly improve traffic flow (often turning an LOS F intersection into an LOS A, as in the West Haven case), and greatly cut down on pollution from idling cars, they are never proposed for those reasons. With the exception of two intersections that were easily fixed with proper striping, the presenter McCullough has never encountered a roundabout that did not dramatically improve safety. Typical statistics are a 40-70% reduction in crashes, a 70-95% reduction in injuries (because what crashes take place are fender benders), and a one-third reduction in pedestrian accidents.

Dramatic and typically fatal high-speed "T-bone" collisions are eliminated. McCullough showed a video taken by a fixed red-light-runner-detection camera. Traffic was stopped on the main street. A PT Cruiser appeared in a vacant lane and ran the red light at 45 mph. It disappears out of the picture briefly, then immediately reappears being hit from the side by a car going through the green light at 45 mph, neither having slowed. The PT rolls over and over, in the process knocking down and severely injuring a pedestrian. It is a sobering video.

If a signaled intersection first cost is \$150,000, a roundabout might cost \$250,000 to \$300,000. But in every case McCullough knows of, the roundabout has a lower life-cycle cost than the signaled intersection. Unless the road is definitely never going to be used by the largest trucks, he recommends designing for a WB-67 semi. This is easily done by providing a ride-up apron around the center island. He showed a picture of a modest-sized roundabout being negotiated by a 13' wide by 70' long mobile home section, with no problem. One of the major costs of a roundabout is the apron, which can't be made of concrete (because of the long wait until it can be driven on). NYS uses an expensive stamped asphalt system developed in England. Granite curbs are much preferred, despite the cost. Typically, the roundabout can be built in sections, preserving traffic flow during most of construction, with only 2 or 3 days of shutdown for completion.

Communities typically have strong objections to the first roundabout. NYSDOT often listens to evening after evening of negative public hearings, then decides to go ahead, because no one has offered substantive objections. From a typical ratio of 2 to 1 against, a typical community will soon be 4 to 1 in favor, and will from that point insist on roundabouts whenever possible. Roundabouts sell themselves after you put the first one in. Presentation to the public needs to be a carefully organized sales presentation focusing on safety.

A roundabout is an excellent solution to 5-point intersections. An ideal first candidate in Norwalk (in my opinion) would be the East Avenue/Park Avenue/Hubbell Lane/Morgan St./Wall Street intersection. This will have to be enhanced to deal with the traffic from the

new condos on the river, and a roundabout would be an ideal solution. While Tod Bryant is against closing Smith Place at Wall Street, Steve Cecile makes a good case that it would be a bad intersection if allowed to remain. With a roundabout, the Hubbell Lane traffic could easily make the circuit and head down Wall Street for points west with little delay. Today, the cycle when Hubbell Lane is included is almost 3 minutes, and turns into and out of Morgan are a nightmare.

It typically takes an individual about 6 months to digest the idea and take it seriously, although I suspect as the idea gains momentum, this period will shorten. There are various options for moving ahead. One is to hold public information sessions of no more than 2 hours, led by an experienced engineer, would be a good first exposure. Later, it might be a good idea to hire McCullough to do a presentation for key personnel. This could be organized by Neighborhood Organizations. Norwalk could spread his \$1,000 consulting fee by collaborating with neighboring towns. Presentations might be done through SWRPA, and might be done by other engineers looking for work for no cost (but then you wouldn't have McCullough's broad experience). I am told by a relative who is an experienced planner in Virginia that Glatting Jackson, a traffic engineering firm based in Florida, is highly knowledgeable on the subject, website <http://www.glatting.com/>. I can provide a contact.

I gained a smattering of knowledge about roundabout design in the seminar (which was aimed at traffic engineers) and can at least sketch how they would work in various situations. Bob White could get someone to look at the designs (they are very straightforward to design).

An important tool for designing the intersection is the right computer program for predicting the flow through the intersection. McCullough had much to say about the various programs, and showed that no one program is sufficient to do a good job. An important aspect of the switch to roundabouts is to select the right traffic design and analysis programs. McCullough would be glad to share his experience through NYSDOT. He says that the design of a single-lane intersection can be sketched and the numbers run in a morning, while a two-lane design might take a day or two. I gained enough knowledge about roundabout design in the seminar (which was aimed at traffic engineers) to be able to sketch a design for simple configurations.

My target list of intersections in the middle of town includes:

- East Avenue/Wall Street/Hubbell/Morgan/Park
- Park/France/North
- Cross/North/Main
- Belden/Cross/Byington
- West Avenue/off ramp from I-95
- West Avenue/Belden Avenue/Wall Street
- Exit 16
- Stroffolino Bridge/Water/Washington
- Seaview/Fort Point
- Main St/Main Av/New Canaan Ave

I suspect that Connecticut Avenue traffic could be vastly relieved using roundabouts in association with a "road diet," to reduce its ridiculous width.

And, as opposition to the Merritt Interchange seems headed for a lawsuit and consequent delays, it might make sense to look at roundabouts to improve the flow and greatly reduce accidents at the Main Avenue ramps.

While turning on a dime is not what Governments do routinely, I feel in this case that ignoring roundabouts just as they are about to become the standard solution, would be a

grave error. Taxpayers can help by becoming familiar with these intersections and helping to promote their use. In arguing for roundabouts, two points are very important:

- They are extremely safe compared with an intersection with traffic signals; and**
- They are not rotaries or traffic circles!**

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