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Roundabout Position Paper

The Environmental Defenders of McHenry County (EDMC) recognize the need for transportation improvements and the fact that more and more Roundabouts are coming to McHenry County

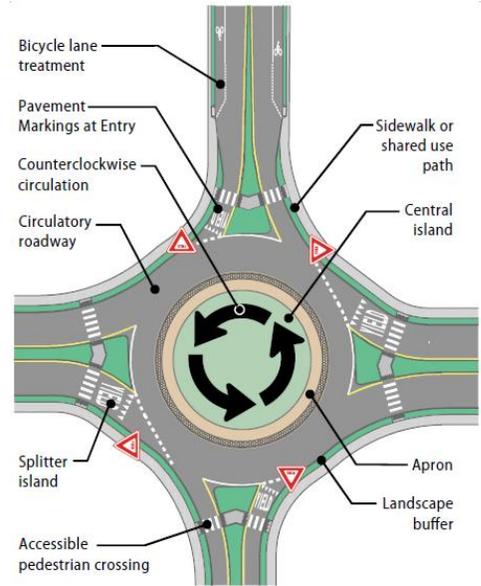


Image 1: Features of a modern Roundabout

What is EDMC's position on Roundabouts.

- ❖ **Definitions:** (For more definitions see image 1 and below)
 - A modern Roundabout is a circular intersection but not all circular intersection are modern Roundabouts. (E.g. a traffic calming circle in a neighborhood is not a Roundabout)
 - A modern Roundabout is an intersection where all the traffic moves counterclockwise (in the US). Drivers yield at entry and exit at their desired street.
- ❖ **Environmental and Economic Impact:**
 - Less fuel used on intersection (no idling, no start & stop), giving savings to drivers and resulting in less greenhouse gas (CO₂) emissions.
 - Less water pollution from oil drippings (stops) and from tire wear (braking & accelerating).
 - Less impermeable surface required for vehicles, thus allowing increased water infiltration for groundwater recharge, while at the same time improving traffic flow.
Can avoid road widening (e.g. keep road 2 lane) and still improve throughput.
- ❖ **Safety:** - 90% less fatalities, 76% less injuries, 35% less crashes (FHWA see references)
 - Fewer conflict points.
 - Less severe crashes, less fatalities.
 - No left turn conflicts, no left turn crashes.
 - No head on crashes.
 - No 90° side impact crashes, always under an angle which is less severe.
 - Slower traffic in Roundabout thus safer but at the same time increased throughput of the intersection, as vehicles do not stop.
Reduces Top Speeds in intersection (safer) but the increases average speed from Point A to B.
 - Suitable for pedestrians and bicyclist if properly designed.
 - Design reduces traffic speed (safety) but increases throughput. Several safe options for bicyclist to navigate and pedestrians to cross.
 - Ideal for safe U-turns. No need to cross oncoming traffic.
- ❖ **Cost:**
 - A modern Roundabout has a lower life cycle cost than a signalized intersection.
 - Sustainable design that reduces electricity and maintenance requirements.
(No traffic lights required)

❖ **Traffic flow:**

- A modern Roundabout can pass more vehicles than a 4-way stop and even beats most signalized intersections in vehicle throughput. (Fun link below, [Mythbusters](#))
- Can easily and safely accommodate 3, 4, 5, 6 roads, even under odd angles.
- Ideal for safe U-turns.

❖ **Frequently asked questions and concerns:**

- How do trucks get around a Roundabout? Long vehicles can use the truck aprons safely.
- Are they more dangerous under snow and ice conditions as one has to turn?
Roundabouts can be plowed like any other intersection, speeds are slower and the turning radius is less severe than at a 90° turn.
- Is it safe for pedestrians? Yes, Roundabouts have crosswalks and intermediate splitter island to stop and look. This way only one part of the lane gets crossed at a time and all vehicles came from the same direction.
- Most sceptics or opponents of Roundabouts will become supporters once they are built and have been tried out. (If you have doubts, check out the ones existing in the County).

❖ **Conclusions:**

- The Environmental Defenders of McHenry County are in favor of modern Roundabouts for the following reasons:
 - Increased Safety, Reduced emissions, Improved traffic flow, Lower cost, Improved community livability, Less environmental impact, More sustainable.

❖ **References:** (National Roundabout week: <https://safety.fhwa.dot.gov/NRW/>)

- Federal Highway Administration, Roundabout Safety Clearinghouse:
 - Check out video for safety and Conflict Points
https://www.youtube.com/watch?v=uhHzly_6lWM
 - General information on Website:
<https://safety.fhwa.dot.gov/intersection/innovative/roundabouts>
- Roundabouts: Designed for motor vehicles, Walking & Bicycling. See AASHTO guide. (AASHTO American Association of State Highway and Transportation Officials. Chapter4: 4.12.11 Bicycle Travel in Roundabouts: <https://www.transportation.org/>)
- CITYLAB article about Carmel, IN: (Most Roundabouts in the country)
<https://www.citylab.com/solutions/2016/12/a-chat-with-the-mayor-of-roundabout-city-usa/511466/>
- Wisconsin DOT: Roundabout Webpage:
<http://wisconsindot.gov/Pages/safety/safety-eng/roundabouts/default.aspx>
- Mythbuster Video on Roundabouts:
<https://www.wimp.com/mythbusters-four-way-stop-vs-roundabout/>.

❖ **Existing and anticipated Roundabouts in McHenry County:**

- Already existing in McHenry County:
Johnsburg Rd / N. Chapel Hill Rd, Charles Rd / Raffel Rd.)
- In construction of planned:
2018: S. River Rd / Dowell Rd
2018: US20 / Harmony Rd
2019: Lake Ave / South St / Madison St (Woodstock)
2019: US20 / Marengo Rd / Union Rd / Beck Rd
 - 2019-2020: IL23 at I-90 interchange - 2 Roundabouts
 - 2019-2020: Harmony Road / IL23
 - 2020. Cary Rd. / Main St. (Algonquin)
- Longer future: 5 intersections along IL47 in Woodstock,
(Lake, McConnell, Judd/Irving, Ware & Charles).

❖ **More Definitions:**

- **FHWA:** Federal Highway Administration.
- **Truck Apron:** Allows large vehicles, trucks, buses, and recreational vehicles to navigate the roundabout or turn without striking fixed objects or other road users.
- **Throughput:** The amount of vehicles that can pass an intersection without causing unreasonable backup.



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Example: Charles Rd / Raffel Rd, before and after, Constructed 2017.

Image 2: **Charles Rd / Raffel Rd, before.**



Image 3: **Charles Rd / Raffel Rd, after.**



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Example: Woodstock Roundabout, (South, Lake & Madison Street)
before and after, expected construction spring 2019.

