



WASHINGTON
EST **COUNTY** 1836
WISCONSIN

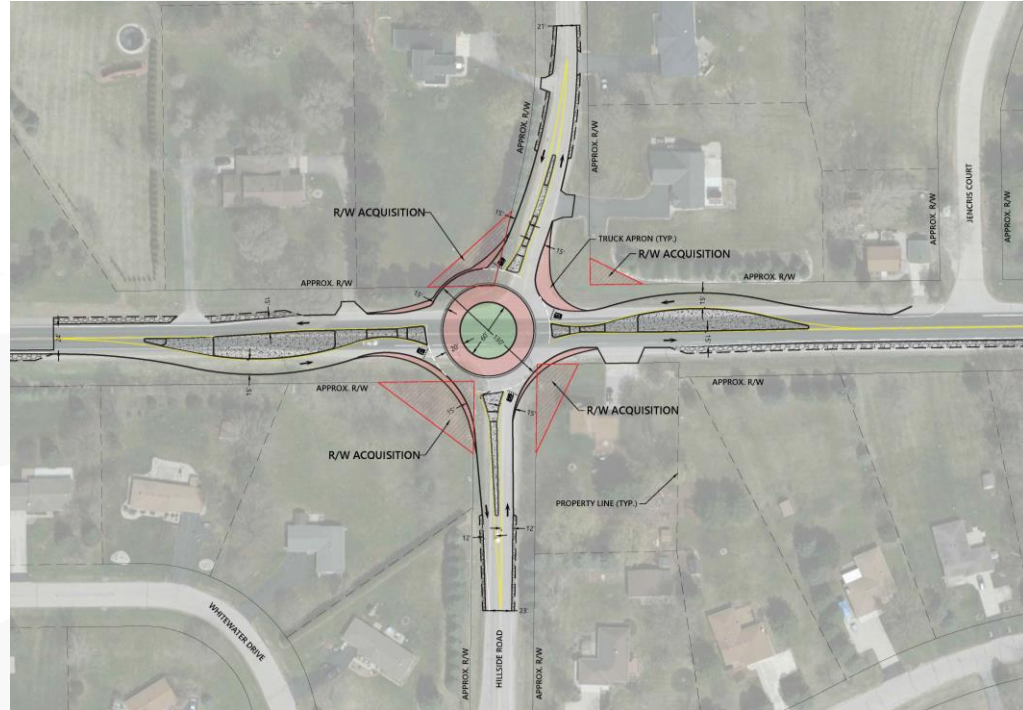
CTH Q and Hillside Road Intersection

Public Information Meeting
July 31, 2019

Introduction and Meeting Purpose



- Provide Information to the public
- Solicit Comments
- Washington County Project
- Funding



CTH Q and Hillside Road Intersection

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History and Past Improvements



Safety improvements were made in the area of the intersection in the fall of 2015 that included:

- Double “intersection ahead” signs being installed with proper spacing and flags attached
- Stop bar being painted on southbound Hillside Road.
- Re-alignment of southbound Hillside Road painting
- Previously, twin stop signs with reflective strips were placed on southbound Hillside Road and “cross traffic does not stop” signs installed
- Washington County radar trailer used to monitor speeds
- Vegetation trimmed near the intersection
- Intersection Sight Distances are above minimums
- Stopping sight distance are above minimums



CTH Q and Hillside Road Intersection

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Intersection Safety Analysis



- Included in the 2017-2019 Washington County Strategic Priorities
- Began the data collection in 2018
- Presented to the Public Works Committee in 2018 and 2019.
- Approved by the County Board in March of 2019 as “Traffic Safety Analysis Plan”
- Encompassed 472 intersection

County Highway Q (County Line Road) & Hillside Road

in the Village of Richfield

Current Traffic Control	Average Daily Traffic (ADT)		Speed Limit (mph)
Two Way stop	<u>Current</u> 11,200	<u>Projected (2050)</u> 16,020	50 on County Highway Q 40 on Hillside Rd

REPORTED CRASHES: 2013-2017					
Total Crashes		Crash Rate		Crash Severity	
<u>Number of Crashes</u>	<u>Rank</u>	<u>Rate</u>	<u>Rank</u>	<u>Severity Index</u>	<u>Rank</u>
30	4 th	1.468	11 th	2.37	16 th

Rankings listed are in relation to all county-controlled intersections in Washington County in terms of greatest hazard.

THE PROBLEM: HIGH NUMBER OF CRASHES AND CRASH RATE

INTERSECTION DESCRIPTION

- Four-legged intersection
- 2-way stop with stop signs on Hillside Road
- ADT projected to increase by 43.0% by 2050

POTENTIAL CAUSES OF HAZARDOUS TRAVEL

- The northern leg (Hillside Road) connects to the intersection at an angle
- Apparent trend of traffic from the north failing to stop/yield for through traffic on CTH Q

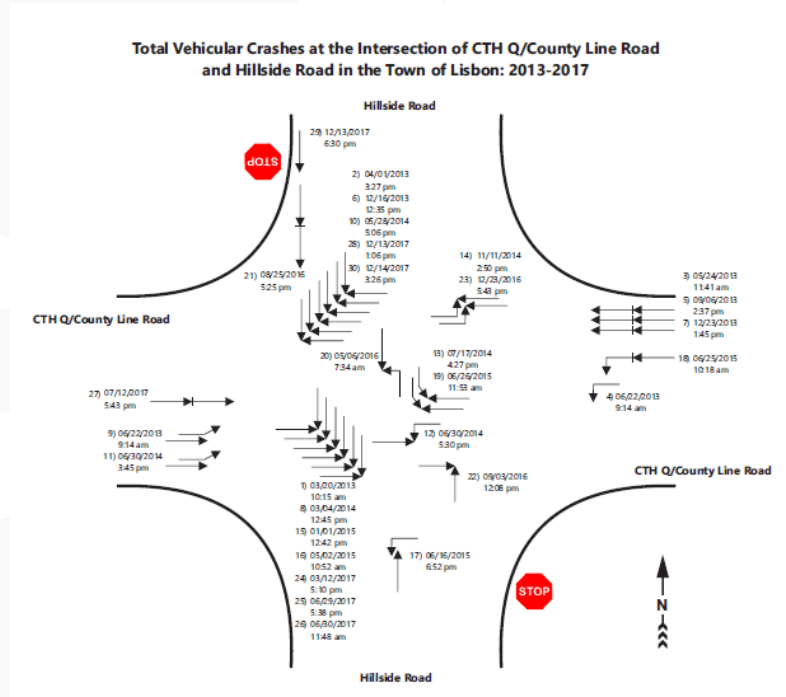
NARRATIVE



Intersection Safety Analysis



A Crash Diagram was completed by SEWRPC which depicts the crash date, location, and type of crash



Intersection Safety Analysis



Total Vehicular Crashes at the Intersection of CTH Q/County Line Road and Hillside Road in the Town of Lisbon: 2013-2017

A tabular listing of the crashes was also created by SEWRPC that included additional data on the crashes

Year	Number on Figure	Date	Time	Type	Severity*	Driver Cause	Other Causes
2013	1	March 20	10:15 am	Angle	PDO	Failure to Yield	--
	2	April 1	3:27 pm	Angle	C	Failure to Yield	--
	3	May 24	11:41 am	Rear-end	B	Following Too Close	--
	4	June 22	9:14 am	Single	PDO	Inattentive Driving	Wet Road
	5	September 6	2:37 pm	Rear-end	PDO	Following Too Close	--
	6	December 16	12:35 pm	Angle	B	Failure to Yield	--
	7	December 23	1:45 pm	Rear-end	PDO	Too Fast for Conditions	Wet Road
2014	8	March 4	12:45 pm	Angle	B	Failure to Yield	Wet Road
	9	May 21	10:46 am	Sideswipe, Same Direction	PDO	Following Too Close	--
	10	May 28	5:06 pm	Angle	C	Failure to Yield	--
	11	June 30	3:45 pm	Sideswipe, Same Direction	PDO	Inattentive Driving, Improper Overtake	--
	12	June 30	5:30 pm	Angle	PDO	Failure to Yield	Rain
	13	July 17	4:27 pm	Angle	B	Failure to Yield	--
	14	November 11	2:50 pm	Angle	PDO	Failure to Yield	Wet Road
2015	15	January 1	12:42 pm	Angle	A	Failure to Yield	--
	16	May 2	10:52 am	Angle	C	Failure to Yield	--
	17	June 16	6:52 pm	Bike	C	Inattentive Driving	--
	18	June 25	10:18 am	Rear-end	B	Inattentive Driving	--
	19	June 26	11:53 am	Angle	B	Failure to Yield	--
2016	20	May 6	7:34 am	Angle	C	Failure to Yield	--

Intersection Safety Analysis



2018 had 7 crashes

Year	Crash ID	Date	Time	Angle	Injury	Failure to Yield	Other
2016	20	May 6	7:34 am	Angle	C	Failure to Yield	--
	21	August 25	5:25 pm	Rear-end	PDO	Following Too Close	--
	22	September 3	12:08 pm	Angle	C	Failure to Yield	--
	23	December 23	5:43 pm	Angle	PDO	Failure to Yield	Snow
2017	24	March 12	5:10 pm	Angle	C	Failure to Yield, Disregarded Traffic Control, Inattentive Driving	--
	25	June 29	5:38 pm	Angle	B	Failure to Yield, Failure to Keep Vehicle Under Control, Disregarded Traffic Control, Inattentive Driving	--
	26	June 30	11:48 am	Angle	B	Failure to Yield, Disregarded Traffic Control	--
	27	July 12	5:43 pm	Rear-end	PDO	Failure to Yield, Following Too Close, Failure to Keep Vehicle Under Control, Inattentive Driving	--
	28	December 13	1:06 pm	Angle	PDO	Too Fast for Conditions, Failure to Yield	Snow
	29	December 13	6:30 pm	Single	PDO	--	Snow
	30	December 14	3:26 pm	Angle	B	Failure to Yield	--

^a A fatal injury is indicated by "K," an incapacitating injury is indicated by "A," a non-incapacitating injury is indicated by "B," a possible injury is indicated by "C," and a property damage only crash is indicated by "PDO."

Note: Crashes involving deer are not included in this analysis.

Source: Wisconsin Traffic Operations and Safety (TOPS) Laboratory and SEWRPC

Intersection Safety Analysis



Conclusions for CTH Q and Hillside Road intersection:

- Inexpensive options are no longer effective.
- Washington County reached out to SEWRPC engineers and DOT safety engineers for recommendations.
- Decision was made to hire a consultant to review the data, obtain additional data, and provide a recommendation on possible improvements.
- Traffic Analysis and Design Incorporated (TADI) selected for further review of the intersection.

Safety and Operational Analysis



Traffic Count and movements completed in February and March of 2019
Crash Data compiled 2013-2017 for County report, 2014-2018 for TADI report

Options:

- Two way stop controlled with left turn lanes on CTH Q (2019 LOS D, 2029 LOS D)
- Four way stop controlled (2019 LOS F, 2029 LOS F)
- Traffic signal control with left turn lanes on CTH Q (2019 LOS B, 2029 LOS B)
- Roundabout (2019 LOS A, 2029 LOS A)

TADI report conclusions



The all-way stop control option does not provide acceptable operations for Year 2019 or Year 2029 despite the all-way stop control warrants being met by the crash frequency criterion. Traffic signals are not warranted under Year 2019 or Year 2029 traffic volumes. Therefore, the two-way stop control with modified geometrics and the roundabout options are viable alternatives for this intersection.

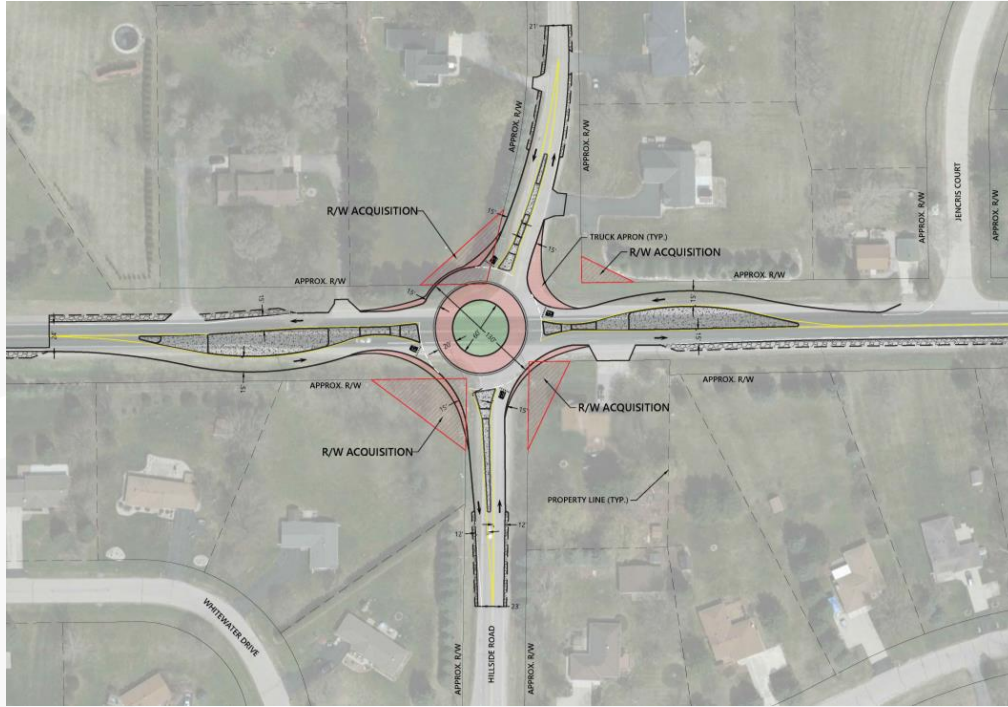
While modifying the two-way stop control with left-turn lanes could improve the safety of the intersection for left-turning vehicles, it does little to better accommodate vehicles trying to cross or turn onto CTH Q from Hillside Road. Therefore, the overall crash reduction resulting from a geometric modification of the two-way stop control is expected to be minimal.

A single lane modern roundabout, however, would be expected to address the severe angle crashes observed at this intersection. WisDOT currently reports a 50 percent reduction in injury and fatal crashes when two-way stop control intersections are converted to modern roundabouts. WisDOT reports an expected increase in property damage only crashes of 16 percent, but the benefit/cost of reducing severe crashes substantially outweighs the addition of property damage only crashes. Therefore, a single lane roundabout is recommended as the best option to improve traffic safety.

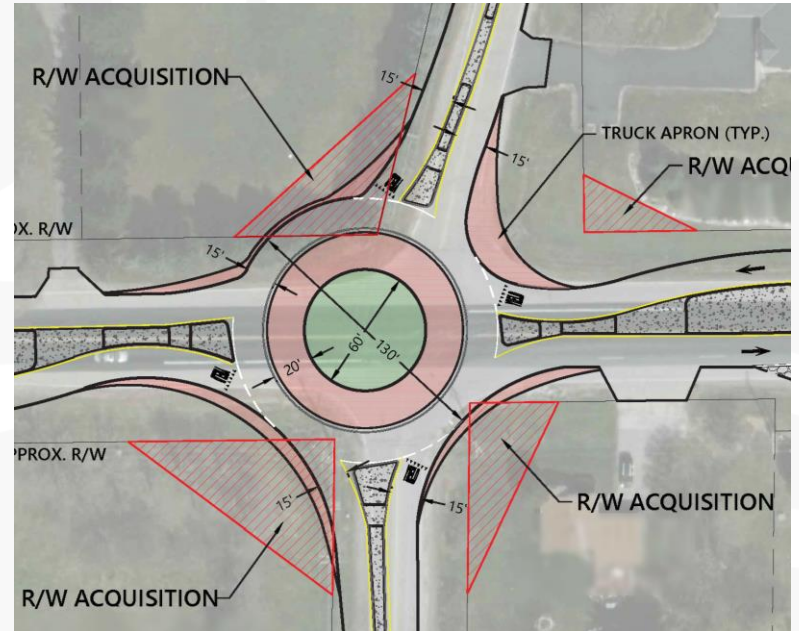
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Conceptual Roundabout



CTH Q and Hillside Road Intersection



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Roundabouts – Ruekert & Mielke Inc.



Roundabouts can have major advantages over a traditional stop sign or signal-controlled intersection. These benefits include **an increase in driver safety, a more efficient traffic flow, a more aesthetically pleasing intersection, lower construction and maintenance costs, and a positive environmental impact.**

SAFETY FIRST

The greatest benefit of roundabout implementation is the increase in motorist safety. Reasons for this advantage include:

- Drivers are approaching the intersection at a reduced speed and typically drive slower around a curve.
- Drivers aren't speeding up to beat a yellow traffic light.
- The geometry of roundabouts prevents the possibility for T-bone or head-on collisions, which are the most fatal.
- Fewer turning directions results in fewer potential contact points between vehicles and pedestrians.

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Roundabouts - Ruekert & Mielke, Inc.



[Studies](#) by the Insurance Institute for Highway Safety (IIHS) and Federal Highway Administration have shown that roundabouts typically achieve:

- 37% reduction in overall collisions
- 75% reduction in injury collisions
- 90% reduction in fatality collisions
- 40% reduction in pedestrian collisions

Washington State DOT reports replacing traditional traffic signals and 4-way stops with roundabouts resulted in the following environmental benefits:

- 32% reduction of carbon monoxide emissions
- 34% reduction in nitrous oxide emissions
- 37% reduction in carbon dioxide emissions
- 42% reduction in hydrocarbon emissions

Nevada DOT that without the necessary start and stop used at traditional intersections, **vehicles use up to 30% less gasoline** as traffic moves more efficiently through roundabouts. At 10 intersections studied in Virginia, this savings amounted to more than 200,000 gallons of fuel per year.

Project Schedule



- Public Information Meeting July 31, 2019
- Solicit comments until August 8, 2019
- Submit for HSIP grant funding by August 15, 2019
- Hope to hear back on application by end of 2019 (Facebook posting)
- If approved, construction in 2021 or 2022 or **2023**
- Next Public Information Meeting roughly 12-18 months prior to construction

Questions?



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Comments due August 8, 2019

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