


Kenosha County
Administrative Proposal Form

1. Proposal Overview

Division: Highway Division Department: Public Works

Proposal Summary (attach explanation and required documents):

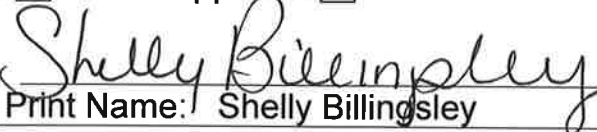
Ordinance to ordain a 4-Way Stop control intersection at County Trunk Highway "F" and County Trunk Highway "O".

Dept./Division Head Signature:  Date: 02/20/2023
Print Name: Clement Abongwa

2. Department Head Review

Comments:

Recommendation: Approval Non-Approval

Department Head Signature:  Date: 3-6-23
Print Name: Shelly Billingsley

3. Finance Division Review

Comments:

Recommendation: Approval Non-Approval

Finance Signature:  Date: 3-6-23
Print Name: _____

4. County Executive Review

Comments:

Action: Approval Non-Approval

Executive Signature:  Date: 3/8/2023
Print Name: _____



BOARD OF SUPERVISORS

ORDINANCE NO. _____

Subject:	
Original <input checked="" type="checkbox"/> Corrected <input type="checkbox"/> 2 nd Correction <input type="checkbox"/> Resubmitted <input type="checkbox"/>	
Date Submitted: March 13, 2023	Date Resubmitted:
Submitted by: Clement Abongwa	
Fiscal Note Attached <input type="checkbox"/>	Legal Note Attached <input type="checkbox"/>
Prepared by: Clement Abongwa	Signature: <i>Clement Abongwa</i>

The County Board of Supervisors of Kenosha County, Wisconsin does hereby ordain:

Kenosha County Ordinance, Section 7.025 on TRAFFIC CONTROLS is hereby amended by creating Section (2) (hh) as follows:

(hh) Four-Way Stop at the intersection of County Trunk Highway (C.T.H.) "F" and County Trunk Highway "O". Traffic from all directions shall stop at the intersection of C.T.H. "F" and C.T.H. "O", and a Stop sign shall be placed at each corner of the intersection. This intersection is in Kenosha County, Wisconsin located partially in the Town of Randall and the Village of Twin Lakes.

Respectfully Submitted:

Committee:

	Aye	Nay	Abstain	Excused
<hr/> Mark Nordigian, Chairperson	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<hr/> Zach Stock, Vice Chairperson	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<hr/> Supervisor Laura Belsky	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<hr/> Supervisor Aaron Karow	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<hr/> Supervisor John O'Day	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<hr/> Supervisor Tim Stocker	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<hr/> Supervisor Brian Thomas	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>



COUNTY OF KENOSHA

Shelly Billingsley, Director
Department of Public Works & Development Services

Clement Abongwa, Director
Division of Highways
19600 75th Street, Suite 122-1
Bristol, Wisconsin 53104
(262) 857-1870
Fax: (262) 857-1885

To: **Members,
Public Works/Facilities Committee**

From: **Clement Abongwa, Director
Division of Highways**

Date: **March 13, 2023**

Subject: **CTH 'F' and CTH 'O' Intersection 4-Way Stop evaluation in the Town
of Randall and Village of Twin Lakes.**

Background Information

The CTH F and CTH O intersection initially was a 3-leg intersection that was reconfigured into a 4-leg intersection with 2-Way Stop control for eastbound and westbound traffic on CTH F. Despite the intersection being fully operational for the last two years, the travelling public has not been able to fully adjust to the new traffic pattern. We have received numerous complaints regarding confusion and challenges that the travelling public experience while navigating the intersection. The Supervisor of the District is requesting the installation of a 4-Way Stop on behalf of his constituents. The travelling public believes that a 4-Way Stop would eliminate the confusion experienced by the travelling public and would significantly reduce the number of crashes at the intersection.

The County's protocol to evaluate these types of concerns is to implement the recommended guidelines outlined in the "Manual on Uniform Traffic Control Devices" (MUTCD). The MUTCD is a Federal manual that defines the standards used by road managers nationwide to install and maintain traffic control devices on all public streets, highways, bikeways and private roads open to public travel.

A formal review of this intersection was conducted using the guidelines stipulated in the MUTCD. The attached report outlines the observations and determinations of the investigation as well as staff's recommendations. The Executive Summary that follows highlights the key elements from the report.

Executive Summary

A comprehensive review of the said intersection indicates that 4-way stop control is merited at the CTH F and CTH O intersection. The findings of the study include the following:

- Due to the large functional area of the intersection, a 4-Way Stop would effectively and efficiently control traffic.
- The approaching traffic volumes, on the major approaches, were above the threshold values required to merit a 4-Way Stop Control
- It was observed that the values/conditions of other criteria that include sight distance, daily traffic volume and annual crashes were not enough to warrant a 4-Way Stop

Based on a comprehensive investigation and engineering analysis of this intersection, staff recommends 4-Way Stop control at the intersection of CTH F and CTH O.

4-WAY STOP CONTROL EVALUATION AT THE RECONFIGURED COUNTY TRUNK HIGHWAY F (CTH F) AND COUNTY TRUNK HIGHWAY O (CTH O) INTERSECTION

Study Timeframe: November 2020-January 2023

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I. Purpose of the Study

The purpose of this study is to evaluate the need for 4-way stop control at the CTH F and CTH O intersection which was reconfigured in 2020. This study was carried out at the request from the Supervisor of the District where the intersection is located. The Supervisor made the request, on behalf of his constituents, who believe that the intersection would operate better and safer as a 4-way stop controlled intersection. Since the supervisor made the request, there have also been numerous phone calls, from the public, pertaining to the travelling public experiencing challenges when navigating through this intersection.

II. Problem Statement and Study Justification

CTH F and CTH O is a reconfigured intersection that was completed in November 2020 as part of the CTH F realignment project. The intersection was converted from a 3-leg intersection, with a stop control on the west approach to a 4-leg intersection with a 2-way stop on the west and east approaches. The public is still adjusting to the new traffic pattern, at this modified intersection, two years after the reconfiguration of the intersection was completed. The County Supervisor, from the district, in which the intersection is located, is requesting for 4-way stop control to mitigate confusion experienced by the traveling public as well as to reduce the number of crashes. This request was made, due to the public's perception, that the modified intersection would function better as a 4-way stop controlled intersection. The County has completed its investigation and this report summarizes the findings of the 4-Way warrant investigation.

III. Study Methodology

The study was completed using guidelines outlined in the Manual on Uniform Traffic Control Devices (MUTCD) as the basis for evaluating the intersection merits for 4-way stop control. The MUTCD is a federal manual that defines the standards used by road managers nationwide to install and maintain traffic control devices on all public streets, highways, bikeways and private roads open to public travel. This study utilizes the following MUTCD criteria to verify whether a 4-Way Stop is merited; intersection geometry, annual crashes, traffic volume, sight distance and engineering judgement.

IV. Intersection Geometry

The current intersection at CTH F and CTH O is a 4-leg intersection with 2-way stop control on CTH F east and west approaches. The lane configuration, of the said intersection, consists of a dedicated left turn lane and a through lane, on the north and south approaches, the east and west approaches comprise of a shared left turn/through lane and a dedicated right turn lane. The east approach is also defined by an approximately 7% slope which reduces the westbound traffic vision of oncoming eastbound traffic until the traffic is at the intersection. A geometric layout of the intersection is illustrated in Exhibit I below. Due to the multiple lanes on each approach, the functional geometry of the intersection is too wide to be effectively controlled by just a 2-Way Stop. Hence, a 4-Way Stop is warranted at this intersection due to the large size of the functional area of the intersection and the steep vertical curve of the east approach.

Exhibit I: CTH F and CTH O Intersection Layout



V. 4-Way Stop Warrant Review

The intersection was evaluated for 4-Way Stop control using guidelines recommended in the MUTCD. The determination of the evaluation is summarized in the matrix below in Exhibit II: 4-Way Stop Warrant Matrix.

Exhibit II: 4-Way Warrant Matrix

SN	CRITERIA DESCRIPTION	WARRANT	FIELD CONDITIONS	DETERMINATION
1	ANNUAL CRASHES	≥ 5	3	Not met
2	VOLUME: measure as follows:			
	a) Major approach average vehicular volume per hour for any 8 hours	≥ 300	271	Not met

	b) Minor approach average counts for peds/vehicular/cyclists per hour for any 8 hours	≥200	190	Not met
	c) Delay at highest hour	≥30 sec	Not measured	Not measured
3	"85TH PERCENTILE SPEED" - DOES 85% SPEED OF OBSERVED TRAFFIC ON MAJOR ROAD EXCEED 40 MPH	85% speed of traffic > 40 MPH then measure volume	50 MPH (S. app.) 47 MPH (N. app.)	Measure volume per standard
	a) Major approach average vehicular volume per hour for any 8 hours	≥210	271	Met
	b) Minor approach average counts for peds/vehicular/cyclists per hour for any 8 hours	≥140	190	Met
4	INTERSECTION SIGHT DISTANCE OBSTRUCTIONS	At least one corner	No obstruction identified	Not met
5	ENGINEERING JUDGEMENT - ANY UNSAFE CONDITIONS APPARENT TO THE MOTORISTS	Any observed unsafe conditions	Occasional challenges in motorist decision making due to geometric size of the intersection	Met

a. Annual Crashes

Crash data collected from November of 2020 to January of 2023 indicates that an average of 3 crashes occur annually which is lower than the MUTCD threshold value of 5 crashes. The annual crash criterion is not met for a 4-Way Stop due to low crash levels.

b. Volume

Generally, the intersection capacity is adequate to accommodate the overall average daily traffic volumes on all approaches. The approaching traffic volumes were found to be less than the required volumes to warrant a 4-Way Stop. However, it was observed that the approaching traffic volumes were above the threshold values when considering the approaching 85th percentile speed on the major approaches. It was also observed that the 85th percentile speeds on the major approaches were 50 MPH for southbound and 45 MPH for northbound which are greater than the 40 MPH threshold speed. The approaching traffic volumes were

also above the minimum traffic volumes required for a 4-Way stop. Based on the approaching traffic volume, a 4-Way Stop is warranted at this intersection.

c. Intersection Sight Distance

After a comprehensive sight distance review of the four corners of the intersection, no obstruction of the driver's line of sight was identified. The intersection sight distance warrant for a 4-way stop control is not met. The corresponding sight distance review data are attached as Appendices A through J.

d. Engineering Judgement

The traffic flow at this intersection was monitored for two years and it was observed that some motorists assume that the intersection is a 4-Way stop. Staff believes this confusion is due to the large size of the functional area of the intersection. Converting this intersection to a 4-Way Stop would mitigate the confusion as well as reduce some of the crashes at the intersection. Staff recommends a 4-Way Stop at this intersection based on engineering judgement.

VI. Conclusion

In conclusion, the determination of the study denotes that a 4-Way Stop is warranted at the intersection of CTH F and CTH O due to the approaching traffic volumes and the large size of the functional area of the intersection.

VII. Recommendations

Based on the findings of the study, staff recommends a 4-Way Stop at the intersection of CTH F and CTH O.