Traffic Safety Improvement Program

Traffic Control Devices Category
FY 2025

Applications Received by August 16, 2023

Applications listed in alphabetical order by applicant.

Page No.	Applicant	Title/Subject	$ $ $	
			Project	Request
4	Appanoose County	Portable Temporary Traffic Signals	$62,195	$62,195
14	City of Dike	Replace Signs	$7,926	$7,926
34	City of Dysart	Speed feedback signs	$26,845	$26,845
49	City of Popejoy	Solar Flashing Beacons	$1,475	$1,475
58	City of Waterloo	Bike lane relocation	$47,429	$47,429
72	City of Waucoma	Speed feedback signs	$12,500	$12,500
85	City of West Des Moines	Programmable Signal Heads	$90,000	$90,000
107	City of West Des Moines	RRFBs	$80,000	$60,000
123	Clay County	Portable Temporary Traffic Signals	$68,750	$68,750
138	Clay County	Reflective sign posts	$5,617	$5,617
148	Davis County	Portable Temporary Traffic Signals	$63,500	$63,500
168	Guthrie County	Upgrade curve and warning signs, new posts, and battery packs	$41,356	$41,356
180	Hamilton County	Portable Changeable Message Signs	$40,150	$40,150
193	Hancock	Portable Rumble Strips	$13,596	$13,596
203	Hancock	Solar Flashing Beacons	$25,141	$25,141

262	Humboldt County	Portable Temporary Traffic Signals	$55,400	$55,400
273	Humboldt County	Solar Flashing Beacons	$19,323	$19,323
281	Jefferson County	Portable Temporary Traffic Signals	$59,000	$59,000
299	Local Systems	Sign Replacement Program	$200,000	$200,000
301	Mills County	Portable Temporary Traffic Signals	$62,200	$62,200
311	Pottawattamie County	Activated Warning Light Systems	$120,579	$106,237
331	Story County	Portable Temporary Traffic Signals	$61,100	$61,100
344	Van Buren County	Solar Flashing Beacons and Reflective strips	$40,084	$40,084
367	**TOTAL**	**Applications**	**$1,204,166**	**$1,169,824**

Application for TRAFFIC CONTROL DEVICE
TSIP FUNDS

GENERAL INFORMATION **DATE:** August 7, 2023

Location / Title of Project: Appanoose County – Temporary Traffic Signals

Applicant: Appanoose County Secondary Roads Department

Contact Person: Brad Skinner Title: Engineer

Complete Mailing Address: 1200 Hwy 2 West
Centerville, IA 52544

Phone: (641) 856-6193 (Area Code) E-Mail: bskinner@appanosecounty.net

If more than one highway authority is involved in this project, please indicate and fill in the information below (use additional sheets if necessary).

Co-Applicant(s): _____

Contact Person: _____ Title: _____

Complete Mailing Address: _____

_____

Phone: _____ (Area Code) E-Mail: _____

PLEASE COMPLETE THE FOLLOWING PROJECT INFORMATION:

Funding Amount

Total Safety Cost	$	63,195.00
Total Project Cost	$	63,195.00
Safety Funds Requested	$	63,195.00

Does this project appear on a Safety Improvement Candidate List or is there a safety study recommendation for this project?

☐ Yes – Explain

_____

☒ No

APPLICATION CERTIFICATION FOR PUBLIC AGENCY

To the best of my knowledge and belief, all information included in this application is true and accurate, including the commitment of all physical and financial resources. This application has been duly authorized by the participating public agency(ies). I understand the attached resolution(s), where applicable, binds the participating public agency(ies) to assume responsibility for any additional funds, if required, to complete the project. In addition, the participating public agency(ies) agrees to maintain any new or improved public streets or roadways for a minimum of five years.

I understand that, although this information is sufficient to secure a commitment of funds, a firm contract between the applicant and the Department of Transportation is required prior to the authorization of funds.

Representing the Appanoose County Secondary Roads Department

Signed: _____ 8/7/23
Signature Date Signed

BRAD SKINNER
Printed Name

Attest: Mackenzie Milani 8/7/23
Signature Date Signed

Mackenzie Milani
Printed Name

RESOLUTION FOR TRAFFIC SAFETY IMPROVEMENT PROGRAM
Grant Application for PORTABLE TEMPORARY TRAFFIC SIGNALS

APPANOOSE COUNTY RESOLUTION No. 2023-40

WHEREAS, the Iowa Department of Transportation Traffic Safety Improvement Program operates under the rules of Iowa Administrative Code 761- Chapter 164; and

WHEREAS, said program allows for the distribution of traffic safety funds to cities, counties, and the Iowa DOT for eligible traffic safety improvement projects; and

WHEREAS, Appanoose County has determined that providing portable temporary traffic signals will aid in improving the safety of flaggers, road crews, and the traveling public during road maintenance activities; and

WHEREAS, the County Engineer recommends a TSIP application for funding of the above mentioned traffic control devices.

NOW THEREFORE, BE IT RESOLVED, that we, the Board of Supervisors of Appanoose County do hereby declare support for and endorsement of the Grant Application for said portable temporary traffic signals. The Board further endorses the submittal of such application for grant funding and assures that the County will adequately maintain such improvements within the Appanoose County Secondary Roads system; and directs the County Engineer to pursue available funding for said project.

Passed and Adopted this 7th day of August 2023.

Chairman Board of Supervisors
Appanoose County, Iowa

ATTEST:

Kelly Howard
Appanoose County Auditor

Narrative

The Appanoose County Secondary Roads is applying for the Traffic Safety Improvement Program with the intent to purchase a set of Portable Traffic Signals with the funds. If the county maintenance crew had these available, we would have safer work zones by reducing exposure of flagging personnel and be more visible to traffic.

Appanoose County Roads Department is responsible for the engineering, construction and maintenance of the county's secondary road system. The secondary road system in Appanoose County consists of 765 total miles with 115 of those miles being hard surface. In addition, there are over 170 bridges maintained by Appanoose County. The traffic volumes on a typical road range from 25 vehicles per day on local roads to 1900 on Farm to Market, with posted speed limits ranging from 35 mph to 55 mph. During the summer, many roads traffic volumes increase two and three times the state AADT due to traffic related to Rathbun Lake.

Currently, when county maintenance crews are on a brush cutting project, a spotter is used to let the operators know of traffic. This tool would remove that spotter from the shoulder and allow them to assist with the labor workload of the maintenance project. We plan to utilize the temporary traffic signals in many maintenance options such as brush cutting, patching, bridge repair, guardrail etc.

The primary use of the temporary traffic signals would be in a work zone with a temporary lane closure, two-way traffic project. MUTCD Standard Part 6 has guidance and standards for the use of traffic signals in these types of work zones. In addition to providing safer work zones for County maintenance crews, below are few more examples of the benefits of the temporary traffic signal:

- Signals provide a better visual for motorists than a flagger
- Eliminates a having a worker in the clear zone or in traffic lanes
- Being understaffed, it frees the traffic control flaggers to have them work on the labor crew of the project
- Allows for the option to have overnight lane closures for road and bridge repairs

In conclusion, Appanoose County is requesting TSIP funding to purchase JTI PTS-2000 Traffic Signals in the amount equal to the cost of one set. The referenced traffic signals are MUTCD approved with two signals, solar charging, multiday batteries, and on a towable trailer. These features will provide safer and more efficient traffic operations in work zones day and night. Additionally, these signals would benefit other County Departments, local cities and surrounding counties if requested.

Itemized Breakdown of Cost

1560 LOVETT DRIVE, DIXON, IL 61021

6/26/2023

00006885

Prepared for:

Account Name	Appanoose County	Phone	(641)856-2018
Contact Name	Mackenzie Milani		
Billing Address	1200 Highway 2 West Centerville, IA 52544		
Project State, County or DOT	Appanoose County Grant		

Product Code	Product Description	Quantity	Sales Price	Total Price
PTS2000N	ADDCO PTS 2000 Solar Powered Portable Traffic Signals - 1 Set (2 Trailers, with 2 three section heads), which includes: Galaxy Operating System:10 Day Split programming, Ability to control up to 16 traffic phases, Dynamic Clearing Function.	1.00	$55,865.00	$55,865.00
Battery Upgrade	AGM Deep Cycle Maintenance Free Battery Upgrade	8.00	$360.00	$2,880.00
013-0109	Directional Doppler Radar Vehicle Motion Detector	2.00	$975.00	$1,950.00
Flagger Remote PTS	Flagger Remote Control	1.00	$2,500.00	$2,500.00

Total Price $63,195.00

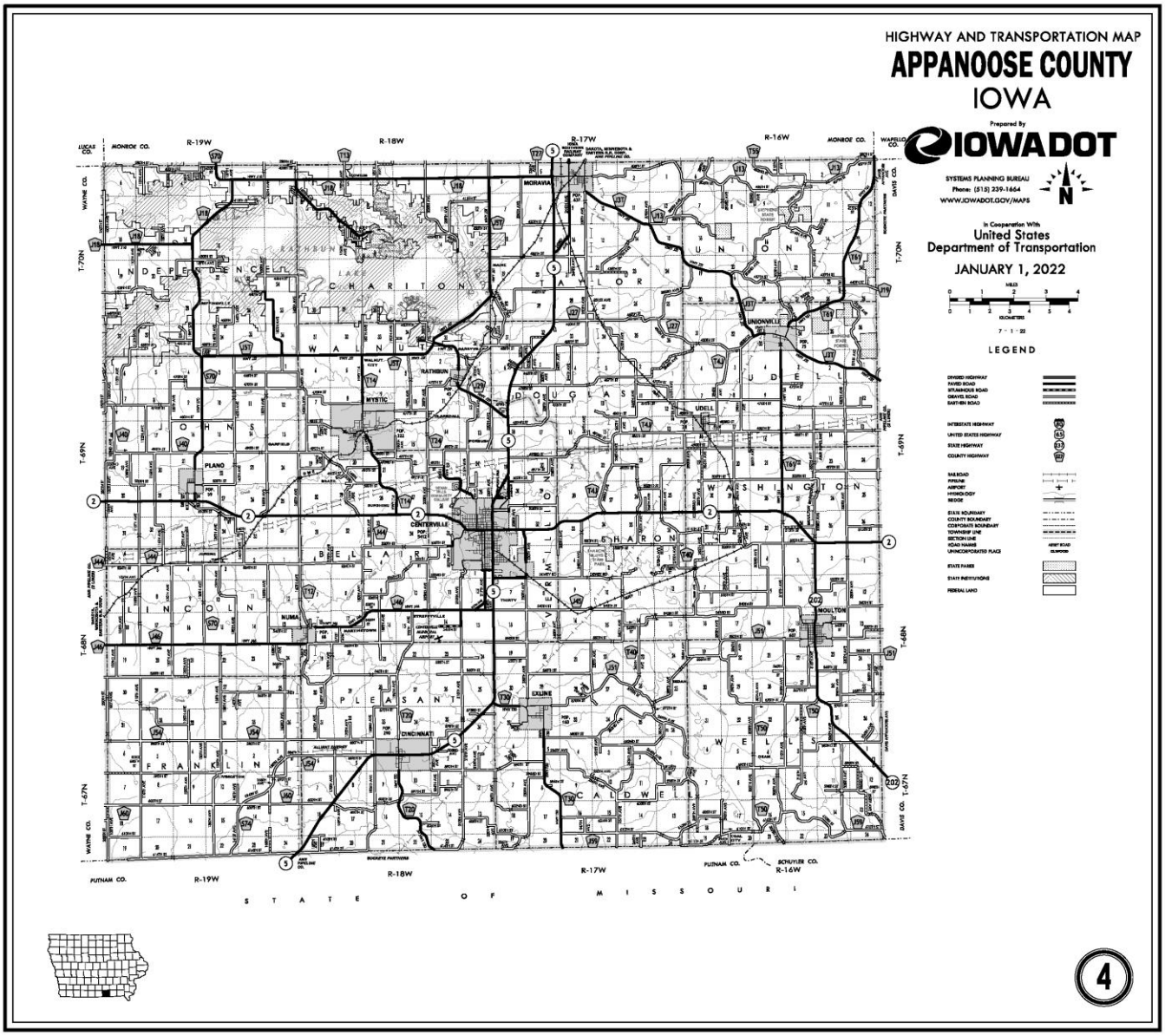
Notes	JTI estimated this new PTS 2000 Portable Traffic Signal Set (2 PTS Trailers) with listed options. Quote includes PTS Back Plates and Visors. Includes front panel programming, no tablet required.
ADDCO PTS2000 Description	ADDCO PTS 2000 Solar Powered Portable Traffic Signals - 1 Set (2 Trailers, with 2 three section heads), which includes: Fully Automated Mast Deployment, Lifting Eye for Trailer Placement, Retractable Tongue for Safety and Security, Two 260w Solar Panels, Solar Tilt and Rotate, 8, 6 volt 225 amp-hour deep cycle Heavy Duty Batteries, 110 volt option, Electric Brakes, Low Power Consumption LEDs, Galaxy Operating System: 10 Day Split programming, Ability to control up to 16 traffic phases, Dynamic Clearing Function, data logger & PTS-2000 Manual. Includes Onsite PTS training, 24/7 telephone support and JTI Training website.
FOB	Destination
Terms & Conditions PTS Sale	John Thomas, Inc. guarantees all electrical and mechanical components, other than tires and batteries, for a period of 2 years. Guarantee excludes accidents, misuse and acts of God. Certificates of Origin will be provided upon receipt of payment
Expiration Date	8/31/2023

Signature

TIME SCHEDULE

TSIP Application Due	August 15, 2023
TSIP Award Notification	Mid-January, 2024
TSIP Funding Available	July 1, 2024
Purchase Temporary Signals	July 2024
Use of Temporary Signals	July 2024

Map



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Pictures

(Example images source https://jtitraffic.com/portable-signals/)

Plan View

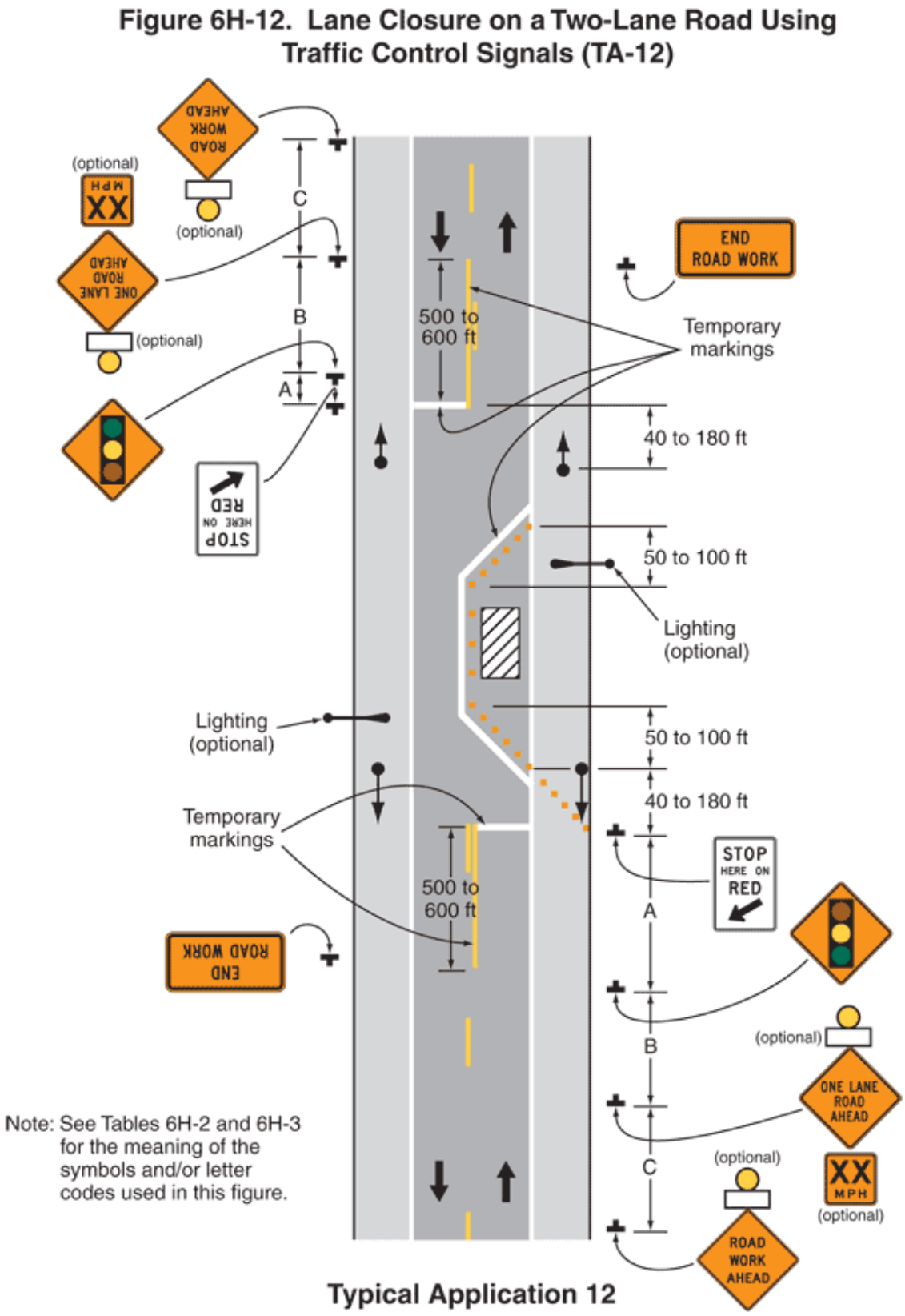


Image source: https://mutcd.fhwa.dot.gov/htm/2009/part6/fig6h_12_longdesc.htm

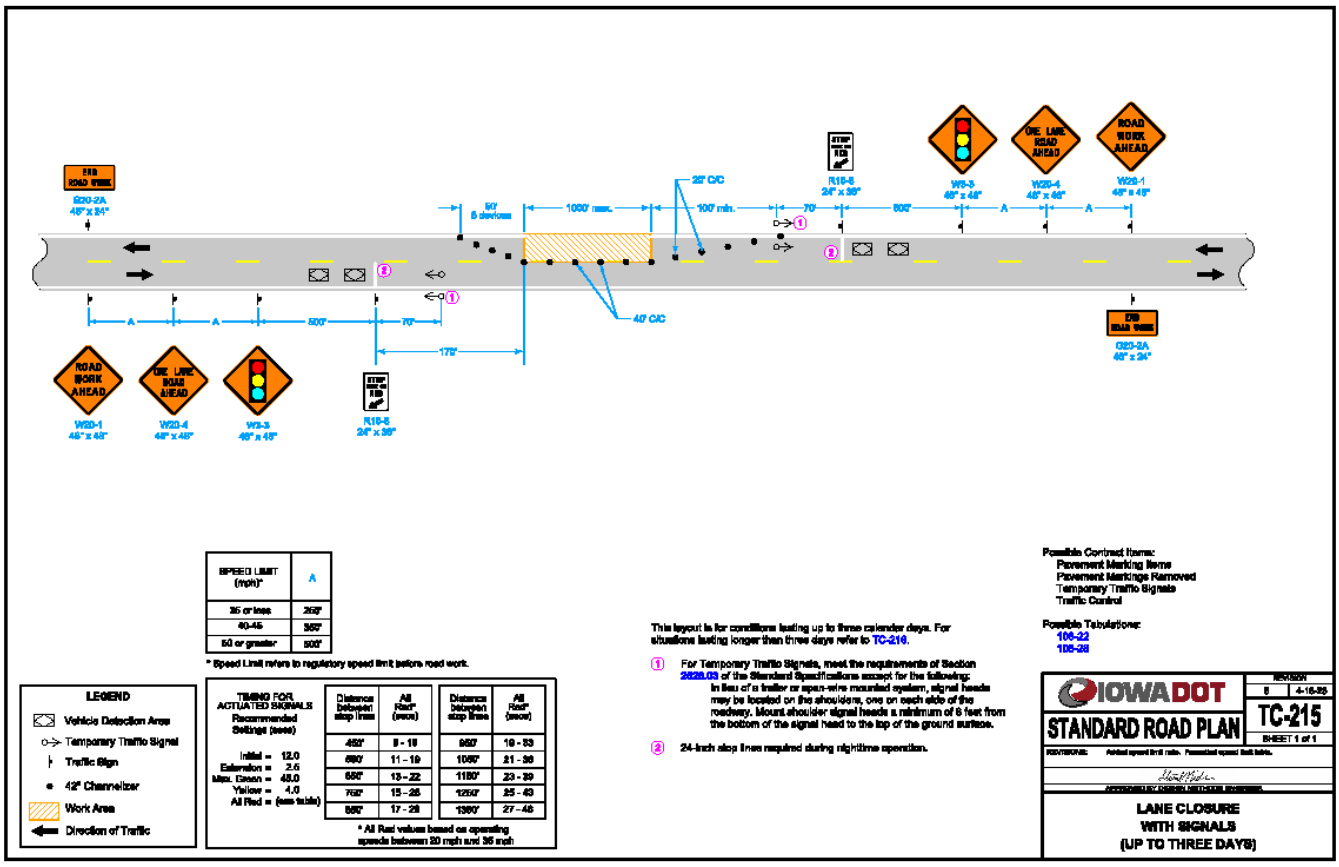
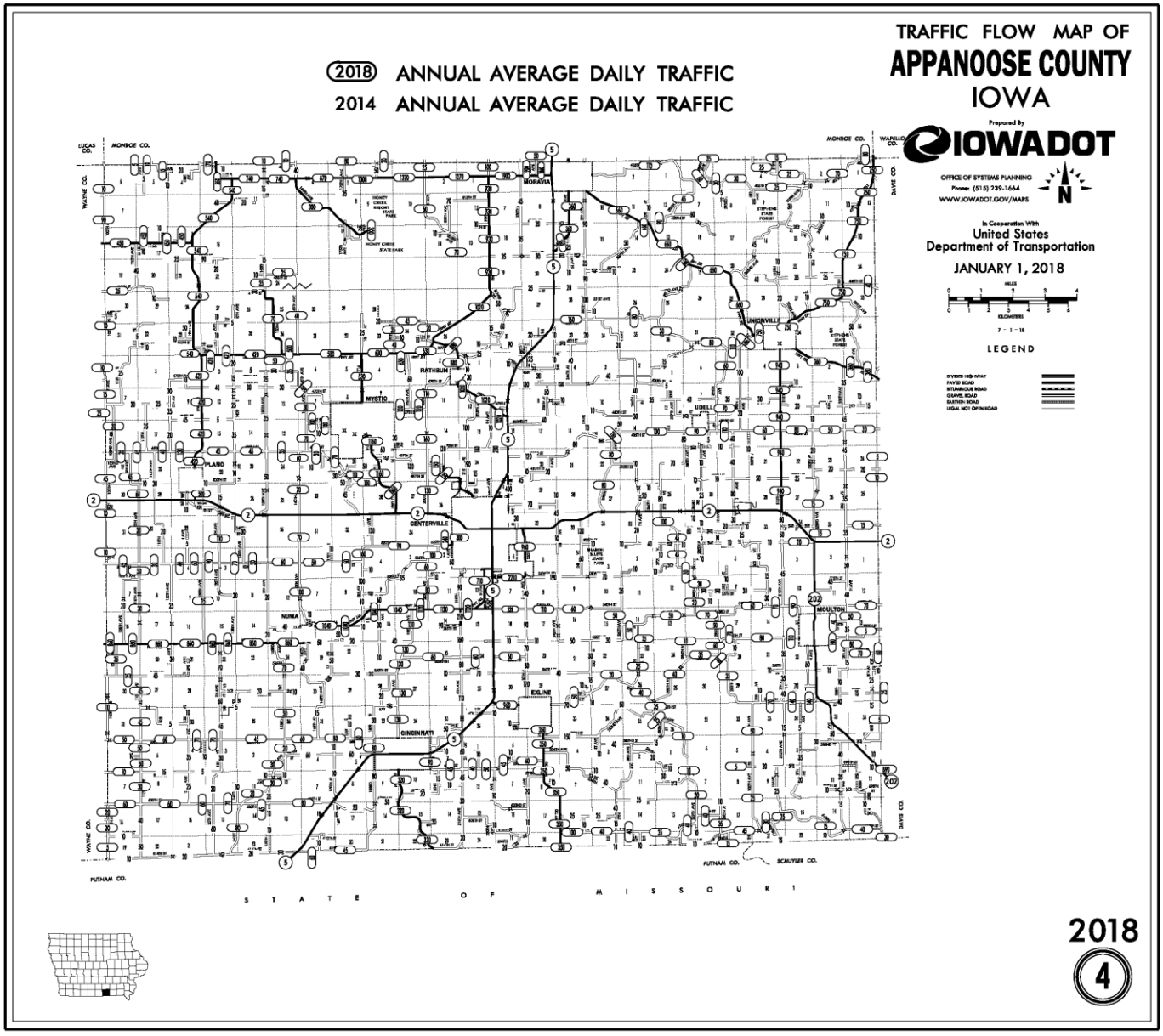


Image source: https://www.iowadot.gov/erl/current/RS/content_eng/tc215.pdf

Traffic Volumes



Traffic Signal Layout

Refer to the above County Map and Plan View for typical application of one lane closure throughout the county. Refer to the Itemized Cost Breakdown for the proposed type of temporary traffic signals.

Application for TRAFFIC CONTROL DEVICE TSIP FUNDS

GENERAL INFORMATION **DATE:** 5/1/2023

Location / Title of Project City of Dike Street Project

Applicant City of Dike

Contact Person Lindsay Nielsen Title City Clerk

Complete Mailing Address PO Box 160

Dike, IA 50624

Phone 319-989-2291 (Area Code) E-Mail lnielsen@dikeia.com

If more than one highway authority is involved in this project, please indicate and fill in the information below (use additional sheets if necessary).

Co-Applicant(s) _____

Contact Person _____ Title _____

Complete Mailing Address _____

_____

Phone _____ (Area Code) E-Mail _____

PLEASE COMPLETE THE FOLLOWING PROJECT INFORMATION:

Funding Amount

Total Safety Cost	$	7925.70
Total Project Cost	$	
Safety Funds Requested	$	7925.70

Does this project appear on a Safety Improvement Candidate List or is there a safety study recommendation for this project?

☐ Yes – Explain _____

☐ No

APPLICATION CERTIFICATION FOR PUBLIC AGENCY

To the best of my knowledge and belief, all information included in this application is true and accurate, including the commitment of all physical and financial resources. This application has been duly authorized by the participating public agency(ies). I understand the attached resolution(s), where applicable, binds the participating public agency(ies) to assume responsibility for any additional funds, if required, to complete the project. In addition, the participating public agency(ies) agrees to maintain any new or improved public streets or roadways for a minimum of five years.

I understand that, although this information is sufficient to secure a commitment of funds, a firm contract between the applicant and the Department of Transportation is required prior to the authorization of funds.

Representing the City of Dike

Signed: Lindsay Nielsen 5-1-23
Signature Date Signed

Lindsay Nielsen, City clerk
Printed Name

Attest: Ann Hilliard 5-1-23
Signature Date Signed

Ann Hilliard, deputy clerk
Printed Name

Resolution #0308202301

Iowa DOT traffic safety grant

Cutsforth introduced Resolution #0308202301, A RESOLUTION AUTHORIZING APPLICATION FOR THE IOWA DOT TRAFFIC SAFETY IMPROVEMENT GRANT FOR STREET SIGNS IN THE CITY OF DIKE. WHEREAS, THE IOWA DEPARTMENT OF TRANSPORTATION HAS ESTABILED THE TRAFFICE SAFETY IMPROVEMENT GRANT, WHICH PROVIDES FUNDING FOR LOCATIONS WHERE SAFETY IS A CONERN AND WHEREAS THE CITY OF DIKE HAS IDENTIFIED THAT STREET SIGNAGE ALL OVER TOWN IS IN NEED OF REPLACEMENT AND REPAIRS, WHEREAS THE CITY OF DIKE IS WILLING TO HELP WITH UP TO $5000 FOR THIS PROJECT. Second by Camarata. Roll Call Vote: Ayes: Cutsforth, Feaker, Mikkelsen and Camarata. Nays: None. Absent: Kauten. Whereupon the Mayor declared Resolution #0308202301, duly adopted.

Passed this 8th day of March, 2023

Michael Soppe, Mayor

ATTEST:

Lindsay Nielsen, City Clerk

A majority of our signs are in poor shape as in no reflectivity, bent, scratched up or broken. Some of the signs are faded to the point that you can hardly read what they say. Most of the post are the old round style and need to be upgraded to the new breakaway kind. We have a county blacktop that runs through town where kids cross to get to school and the crossing signs need updated for better visual coverage. We also have several speed limit and weight limit signs that were made from old signs that got repainted and have vinyl lettering that is coming off. They also have no reflectivity. A lot of our street signs (names) are unreadable with round post. They need to be changed to the new style. New signage would help traffic understand the limits are, see the routes and overall beautification of the town. It will also help with night time visibility for all signage. Upgrading to new signage in town will help with overall safety and beautification of Dike.

F

F


SPEED
LIMIT
25
LOAD OVER
5 TONS
PROHIBITED
EXCEPT BY
ORDINANCE

F


NO
VEHICLES
LICENSED OVER
5 TONS
UNLESS ALLOWED
BY ORDINANCE
NO
TRUCK
PARKING
ANY TIME

F

F

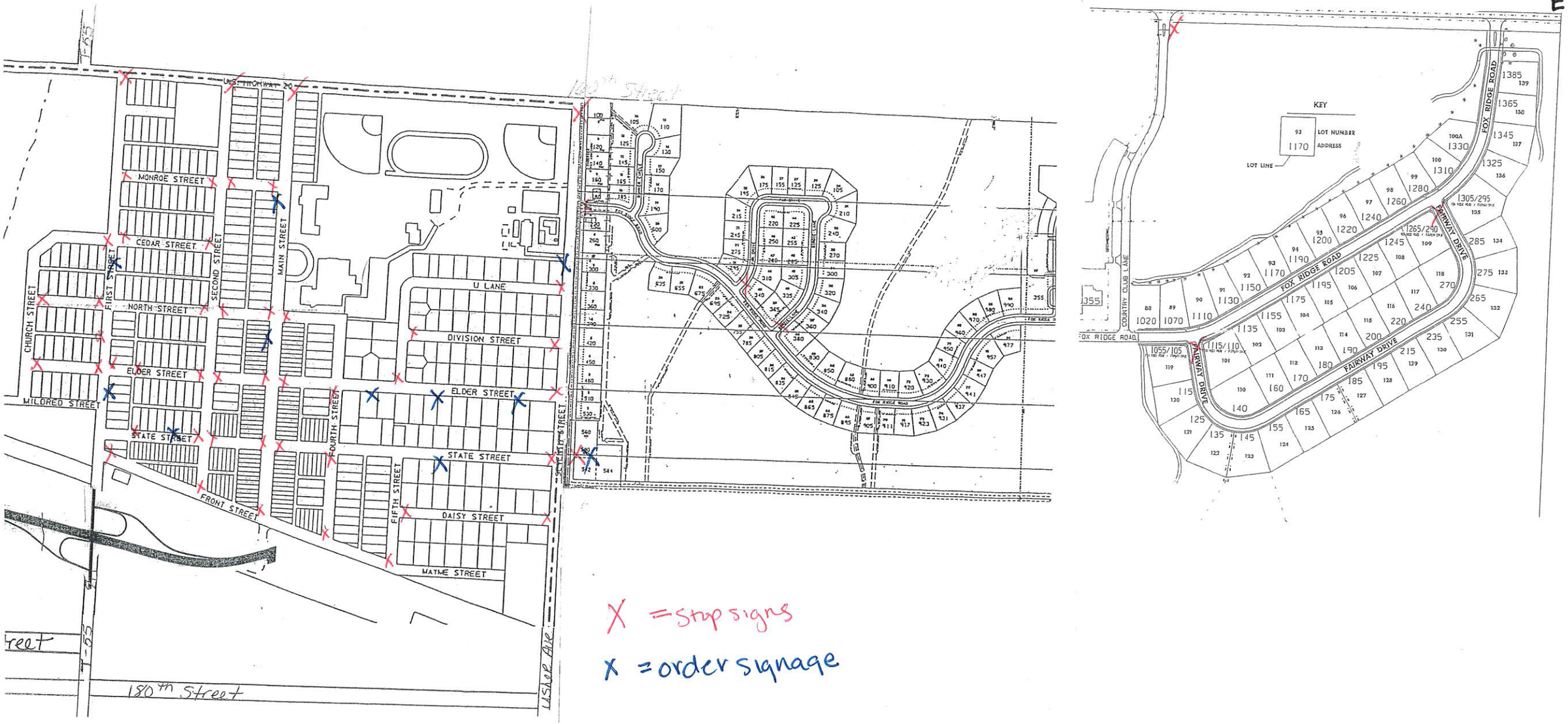

SPEED
LIMIT
25
LOAD OVER
5 TONS
PROHIBITED
EXCEPT BY
ORDINANCE


STOP
WHEN
SIGNAL IS
FLASHING
3
1
4
NO
VEHICLES
LICENSED OVER
5 TONS
UNLESS ALLOWED
BY ORDINANCE


251
SPEED
LIMIT
25
NO
VEHICLES
LICENSED OVER
5 TONS
UNLESS ALLOWED
BY ORDINANCE
2ND ST
SOUTH ST


SPEED
LIMIT
25
SIGNAL
AHEAD
F-150


SPEED
LIMIT
25
SCHOOL
XING
SIGNAL
AHEAD



X = stop signs

X = order signage

IOWA PRISON INDUSTRIES
406 N. High St.
ANAMOSA, IA 52205

Building Brighter Futures

QUOTATION

TO:

DIKE CITY OF
PO BOX 160
DIKE, IA 50624
(319)989-2291 Fax: (319)989-2694

ATTN:

SHIP TO:

DIKE CITY OF
540 MAIN
DIKE, IA 50624
(319)989-2291 Fax: (319)989-2694

ATTN: ANN 319-989-2291

In response to your inquiry, we are pleased to offer the following:

Quote No.	Date	Cust No	S/M	Your Referenced Inquiry	Delivery Promise	F.O.B.	Expiration
0007002	2/20/2023	DIK300	6		4 WEEKS ARO		NET 30

Item	Quantity	UM	Part	Description	Price $	Extension $
				SUBSTRATE: K080ALUM PUNCH SPEC: ST-1 COLOR: WHITE/BLACK SHEETING: HIP PER DESIGN: 30092.41345.1 LIST MESSAGE BY EACH: 10- FRONT ST 4- W ELDER 2- E ELDER 2- MONROE ST 2- W STATE ST 6- NORTH ST 6- MAIN ST 8- CHURCH ST 6- CEDAR ST 4- MILDRED ST 2- U LANE 10- 1ST ST 8- 2ND ST 4- 4TH ST 4- 5TH ST		
				Total for Quote $		**3,428.70**

PLEASE NOTE OUR NEW MAILING ADDRESS!

By: SIGN DIVISION
Quote by: KD/JS

IOWA PRISON INDUSTRIES
406 N. High St.
ANAMOSA, IA 52205

Building Brighter Futures

QUOTATION

TO:

DIKE CITY OF
PO BOX 160
DIKE, IA 50624
(319)989-2291 Fax: (319)989-2694

ATTN:

SHIP TO:

DIKE CITY OF
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Quote No.	Date	Cust No	S/M	Your Referenced Inquiry	Delivery Promise	F.O.B.	Expiration
0007002	2/20/2023	DIK300	6		4 WEEKS ARO		NET 30

Item	Quantity	UM	Part	Description	Price $	Extension $
				SHEETING: HIP SCREEN: D-09		
007	1.0000	EA	FR7-2A-12X18PA	NO PARKING ( ) Regulatory Sign Single Lane | Multi-Lane 12X18 SUBSTRATE: K080ALUM PUNCH SPEC: VR-1A COLOR: RED-WHITE SHEETING: HIP SCREEN: T-04 + SCIP LIST MESSAGE BY EACH: 1- HERE TO CORNER	13.0000	13.00
008	1.0000	EA	FW14-1-30X30PA	DEAD END Warning Sign Single Lane 30X30 SUBSTRATE: K080ALUM PUNCH SPEC: D-1A COLOR: BLACK-YELLOW SHEETING: HIP SCREEN: B-06	53.9000	53.90
090	2.0000	EA	FSP-SIGN	12X18 SUBSTRATE: K080ALUM PUNCH SPEC: ST-1 COLOR: WHITE/BLACK SHEETING: HIP PER DESIGN: 30092.41345.2 LIST MESSAGE BY EACH: 2- WARNING BURIED ELECTRIC	28.4500	56.90
091	78.0000	EA	FSM2-24X6PA	ST MARKER 2 SIDED 24X6	29.3000	2,285.40

PLEASE NOTE OUR NEW MAILING ADDRESS!

By: SIGN DIVISION

Quote by: KD/JS

IOWA PRISON INDUSTRIES
406 N. High St.
ANAMOSA, IA 52205

Building Brighter Futures

QUOTATION

TO:

DIKE CITY OF
PO BOX 160
DIKE, IA 50624
(319)989-2291 Fax: (319)989-2694

ATTN:

SHIP TO:

DIKE CITY OF
540 MAIN
DIKE, IA 50624
(319)989-2291 Fax: (319)989-2694

ATTN: ANN 319-989-2291

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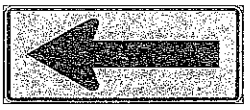
Quote No.	Date	Cust No	S/M	Your Referenced Inquiry	Delivery Promise	F.O.B.	Expiration
0007002	2/20/2023	DIK300	6		4 WEEKS ARO		NET 30

Item	Quantity	UM	Part	Description	Price $	Extension $
				ANN HILLIARD 319-989-2291 deputyclerkhilliard@gmail.com ==========		
001	9.0000	EA	FR2-1-18X24PA	SPEED LIMIT (#) Regulatory sign Single Lane 18X24 SUBSTRATE: K080ALUM PUNCH SPEC: VR-1A COLOR: BLACK-WHITE SHEETING: HIP SCREEN: R-02 + LIST NUMBERS BY EACH: 1- 20 MPH 8- 25 MPH	25.9000	233.10
002	7.0000	EA	FW1-6-48X24PA	SINGLE ARROW Warning Sign Single Lane | Multi-Lane 48X24 SUBSTRATE: K080ALUM PUNCH SPEC: HR-2A COLOR: BLACK-YELLOW SHEETING: HIP SCREEN: A-15	68.9000	482.30
003	2.0000	EA	FR14-1-24X18PA	TRUCK ROUTE Regulatory sign Single Lane | Multi-Lane 24X18 SUBSTRATE: K080ALUM PUNCH SPEC: HR-1A	25.9000	51.80



PLEASE NOTE OUR NEW MAILING ADDRESS!

By: SIGN DIVISION

Quote by: KD/JS

IOWA PRISON INDUSTRIES
406 N. High St.
ANAMOSA, IA 52205

Building Brighter Futures

QUOTATION

TO:

DIKE CITY OF
PO BOX 160
DIKE, IA 50624
(319)989-2291 Fax: (319)989-2694

ATTN:

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DIKE CITY OF
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Quote No.	Date	Cust No	S/M	Your Referenced Inquiry	Delivery Promise	F.O.B.	Expiration
0007002	2/20/2023	DIK300	6		4 WEEKS ARO		NET 30

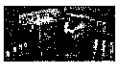
Item	Quantity	UM	Part	Description	Price $	Extension $
				COLOR: BLACK-WHITE SHEETING: HIP SCREEN: I-06		
004	4.0000	EA	FR12-1-24X30PA	WEIGHT LIMIT (#) TONS Regulatory sign Single Lane | Multi-Lane 24X30 SUBSTRATE: K080ALUM PUNCH SPEC: VR-1A COLOR: BLACK-WHITE SHEETING: HIP SCREEN: H-03 & SCIP LIST NUMBERS BY EACH: 4- 5 TONS	43.1000	172.40
005	2.0000	EA	FISI92-12X18PA	DISABLED SYMBOL PARKING ONLY LEAVE FINE OFF Single Lane | Multi-Lane 12X18 SUBSTRATE: K080ALUM PUNCH SPEC: VR-1A COLOR: WHITE-BLUE SHEETING: HIP SCREEN: S-18	13.0000	26.00
006	1.0000	EA	FW3-3-30X30PA	SIGNAL AHEAD SYMBOL Warning Sign Single Lane | Multi-Lane 30X30 SUBSTRATE: K080ALUM PUNCH SPEC: D-1A COLOR: BLACK-YELLOW SYMBOL: ZUND CUT RED-GREEN	53.9000	53.90

PLEASE NOTE OUR NEW MAILING ADDRESS!

By: SIGN DIVISION
Quote by: KD/JS

City of Dike Post and Hardware Quote - 180 Item(s) $4,497.00

Quote is valid for 30 days

Product Description	Unit Price	Quantity	Total
 POST SQUARE 10' X 1-3/4" 14 GA FPOSTSQ10X1-3/4 14GA [redacted]	$39.15	60 Update	$2,349.00
 POST SQUARE 4' X 2" 12 GA FPOSTSQ4X2 12GA [redacted]	$21.80	60 Update	$1,308.00
 4-Way Street Marker HDW Set, 5-1/4" Blade Holder for 1-3/4" Sq Post FHDW4WAYSQ1-3/4"STD [redacted]	$14.00	60 Update	$840.00

Application for TRAFFIC CONTROL DEVICE
TSIP FUNDS

GENERAL INFORMATION **DATE:** 8/14/2023

Location / Title of Project Dysart Speed Signs

Applicant City of Dysart

Contact Person Tabby Kaiser Title City Clerk

Complete Mailing Address PO Box 686, 601 Wilson Street

Dysart, Iowa 52224

Phone 319-476-5690 (Area Code) E-Mail dysart@fctc.coop

If more than one highway authority is involved in this project, please indicate and fill in the information below (use additional sheets if necessary).

Co-Applicant(s) _____

Contact Person _____ Title _____

Complete Mailing Address _____

_____

Phone _____ (Area Code) E-Mail _____

PLEASE COMPLETE THE FOLLOWING PROJECT INFORMATION:

Funding Amount

Total Safety Cost	$ 26,845.30
Total Project Cost	$ 26,845.30
Safety Funds Requested	$ 26,845.30

Does this project appear on a Safety Improvement Candidate List or is there a safety study recommendation for this project?

☐ Yes – Explain _____

☒ No

APPLICATION CERTIFICATION FOR PUBLIC AGENCY

To the best of my knowledge and belief, all information included in this application is true and accurate, including the commitment of all physical and financial resources. This application has been duly authorized by the participating public agency(ies). I understand the attached resolution(s), where applicable, binds the participating public agency(ies) to assume responsibility for any additional funds, if required, to complete the project. In addition, the participating public agency(ies) agrees to maintain any new or improved public streets or roadways for a minimum of five years.

I understand that, although this information is sufficient to secure a commitment of funds, a firm contract between the applicant and the Department of Transportation is required prior to the authorization of funds.

Representing the City of Dysart

Signed: _____ 8/14/23
Signature Date Signed

Tim Glenn
Printed Name

Attest: T. Kaiser 8/14/23
Signature Date Signed

Tabby Kaiser
Printed Name

A.

RESOLUTION NO. 2023-43

A RESOLUTION APPROVING THE TRANSPORTATION SAFETY IMPROVEMENT PROGRAM (TSIP) APPLICATION FOR SPEED LIMIT RADAR FEEDBACK SIGNS

WHEREAS, the Iowa Department of Transportation has adopted the Traffic Safety Improvement Program (TSIP) to allow for funding to be provided to local jurisdictions for eligible traffic safety improvement projects; and

WHEREAS, the City Council of the City of Dysart, Iowa, has determined that providing speed limit radar feedback signs will help slow down traffic within our city limits; and

WHEREAS, speed limit radar feedback signs are recognized as speed control devices in the manual on uniform traffic control devices; and

WHEREAS, the City Council of the City of Dysart, Iowa, recommends a TSIP application be submitted to the Iowa Department of Transportation for possible safety funds for the above-mentioned devices.

NOW THEREFORE BE IT RESOLVED by the City Council of the City of Dysart, Iowa, to endorse the preparation and submittal of the application for the TSIP to the Iowa Department of Transportation, and hereby commits to accepting and maintaining these speed devices.

BE IT FURTHER RESOLVED that the City Council authorizes the placement and maintenance of traffic control devices as necessary for the enforcement of the traffic control regulations.

PASSED AND APPROVED this 14th day of August, 2023.

Tim Glenn, Mayor

Attest:

T. Kaiser

Tabby Kaiser, CMC
City Clerk

CITY OF DYSART, IOWA

601 WILSON ST, PO BOX 686

DYSART, IA 52224

B. NARRATIVE

The city of Dysart, Iowa, is applying for the Traffic Safety Improvement Program funds to be used for the purchase of 6 AC powered radar speed feedback signs and 2 portable solar powered radar speed feedback signs.

We are applying for this grant in hopes to slow down traffic through town, providing safer streets for our citizens. These signs would be placed on our two heavily traveled streets to slow down the traffic coming into town from higher speed limit zones and those leaving town that speed up before exiting the 25 mph zones.

Both main roads are used by children going to our elementary and middle school. Sherman Street goes by our City Park, that includes the city playground, tennis courts and basketball courts. The park also holds several baseball games and events, drawing many people. Both roads also run through residential areas with children at play, including one deaf child and another child with developmental delays. The two roads we would like signs on are also heavily traveled on by semi's and farm equipment, going to the local grain elevator or farm to farm via Sherman Street (a common complaint area from residents).

We believe having these signs will slow down the traffic entering and exiting our small city, keeping it safer for our children and pedestrians on foot or bicycle safer. The City of Dysart would be asking for 100% of the cost of the radar speed signs but will be responsible for the installation and maintenance.

Thank you for your consideration to our project.

C. PRICE

6 – AC powered Stalker radar systems @ $2,944 each = $17,664.00 (see attached quotes with breakdown)

2 – Solar powered Stalker radar systems @ $4,590.65 = $9,181.30 (see attached quotes with breakdown)

TOTAL $26,845.30

D. TIME SCHEDULE

TSIP Application Due: August 15, 2023

TSIP Award Notification: Mid-January 2024

TSIP Funding Available: July 1, 2024

Final Quote Comparison: July 2024 (est.)

Installation of Radar Speed Signs: August-October 2024 (est.)

F. PLAN PICTURES

Sherman St./Dodge St. heading west into town from Hwy 21

Sherman St./Fairlane St. heading east, leaving town

Sherman St./West St. heading west, leaving town

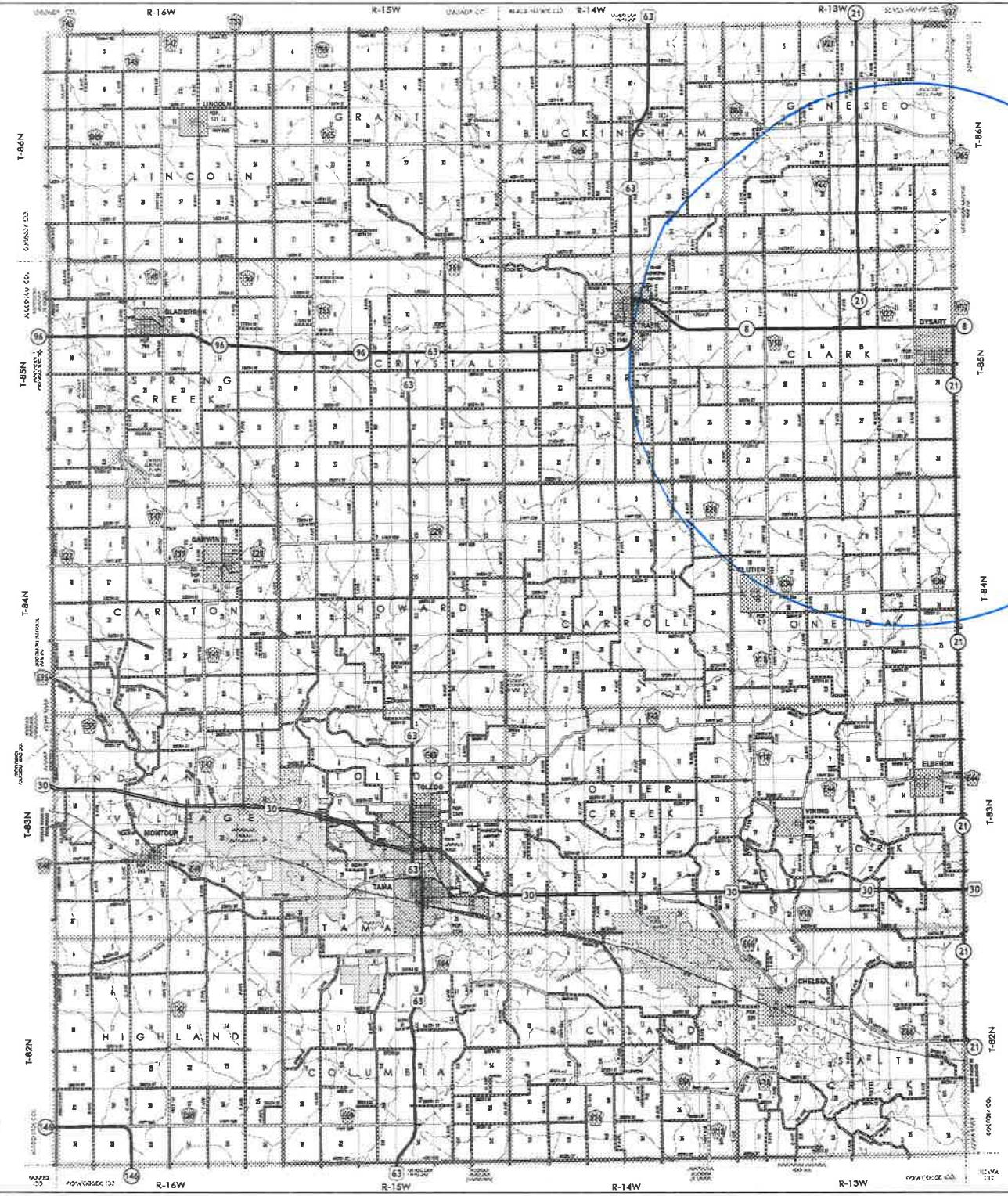
Sherman St./West St. heading east, coming into town

Wilson St./Liberty St. heading west, leaving town

Wilson St./Liberty St. heading east, into town

Wilson St./Tama St. heading west into town from Hwy 21

Wilson St. /Tama St. heading east, leaving town



HIGHWAY AND TRANSPORTATION MAP

TAMA COUNTY
IOWA

Prepared By

IOWADOT

SYSTEMS PLANNING BUREAU
Phone: (515) 239-1664
WWW.IOWADOT.GOV/MAPS

In Cooperation With
United States
Department of Transportation

JANUARY 1, 2022

MILES 0 1 2 3 4
KILOMETERS 0 1 2 3 4 5 6

7 - 1 - 22

LEGEND

INTERSTATE HIGHWAY
PRIMARY HIGHWAY (DIVIDED)
PRIMARY HIGHWAY
PORTLAND CEMENT CONCRETE ROAD
ASPHALT ROAD
BITUMINOUS ROAD
GRAVEL ROAD
EARTHEN ROAD

INTERSTATE HIGHWAY 80
UNITED STATES HIGHWAY 65
STATE HIGHWAY 57
COUNTY HIGHWAY 150

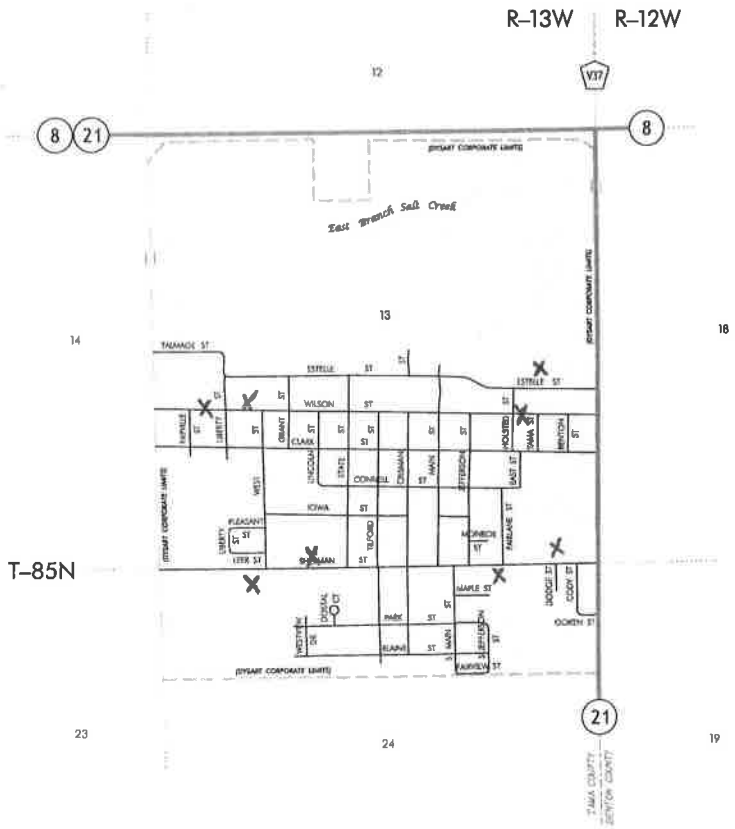
RAILROAD
TRANSIT
AIRPORT
HYDROLOGY
BRIDGE

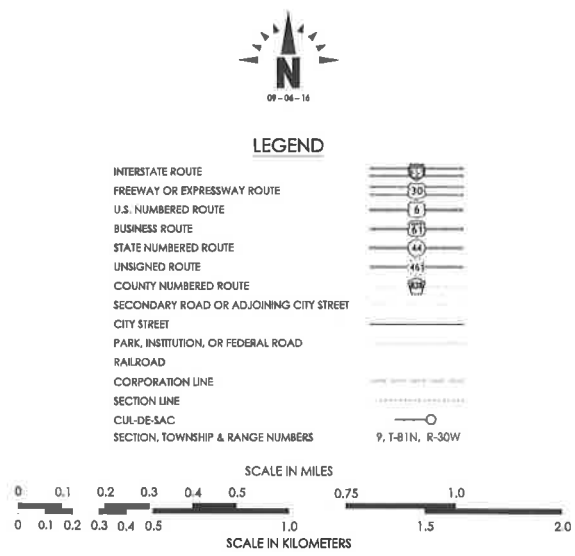
STATE BOUNDARY
COUNTY BOUNDARY
CORPORATE BOUNDARY
TOWNSHIP LINE
SECTION LINE
ROAD NAMES ABBY ROAD
UNINCORPORATED PLACE

STATE PARKS
STATE INSTITUTIONS
FEDERAL LAND

86

G.





HIGHWAY AND STREET MAP OF

DYSART
IOWA

PREPARED BY
IOWA DEPARTMENT OF TRANSPORTATION
PLANNING, PROGRAMMING, AND MODAL DIVISION
OFFICE OF SYSTEMS PLANNING
PHONE (515) 239-1664
IN COOPERATION WITH
UNITED STATES DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION

86–2162

C.

STALKER radar
applied concepts, inc.

QUOTE #2076734

855 E. Collins Blvd
Richardson, TX 75081
Phone: 972-398-3780
Fax: 972-398-3781

National Toll Free: 1-800- STALKER

Inside Sales Partner: Pam Schneidewind, +1-972-801-4890, pams@stalkerradar.com

Reg Sales Mgr: Peter Bauer, 972-398-3780, peter@stalkerradar.com

Date: 08/02/23

Effective From : 08/02/2023 **Valid Through:** 10/31/2023 Lead Time: 45 working days

Bill To:	**Customer ID:** P17713	**Ship To:**	*FedEx Ground*
Dysart Police Dept 601 Wilson St Dysart, IA 52224-9733	Accounts Payable	Dysart Police Dept 601 Wilson St Dysart, IA 52224-9733	Chief Joe Hols

Grp	Qty	Package	Description	Wrnty/Mo	Price	Ext Price
1	1	836-0012-00	PMG 12 Inch Display with Traffic Analyst	24	$2,890.00	$2,890.00

Ln	Qty	Part Number	Description	Price	Ext Price
1	1	200-1312-00	12"PMG w/Traffic Analyst, configured with:		$0.00
2	1	035-0002-22	12" PMG Shipping Box		$0.00
3	4	035-0002-20	PMG Corner Packing Foam		$0.00
4	1	060-1000-24	24-Month Warranty		$0.00
5	1	006-0076-00	PMG Installation Guide		$0.00
6	1	200-1206-00	12" PMG Speed Display		$0.00
7	1	200-5500-10	12" PMG Controller, Normal Speed		$0.00
8	1	200-1206-10	12" PMG Bezel, White		$0.00
9	1	200-1338-10	12" PMG Display - Amber LED, Red/Blue Strobes		$0.00
10	1	062-0126-01	PMG Text and Graphics Option		$0.00
11	1	200-1206-50	No Flash Selected		$0.00
12	1	200-1206-55	12" PMG Pole Mount, 2-Part		$0.00
13	1	047-1000-00	PMG Power Cover (1 per side)		$0.00
14	1	200-1208-00	120/220V Hardwire to Pole Option w/10" Wiring		$0.00
15	1	200-1566-01	12" PMG - USB Com, USB Memory Stick - v2		$0.00
16	1	200-1206-70	PMG Short-Range Wireless Module		$0.00
17	1	200-1206-08	PMG Expanded Memory Option, 8GB		$0.00
18	1	200-1369-00	12" YOUR SPEED White Surround		$0.00
				Group Total	$2,890.00

Product	$2,890.00	Sub-Total:	$2,890.00
Discount	$0.00	Sales Tax 0%	$0.00
		Shipping & Handling:	$54.00
Payment Terms: Net 30 days		**Total: USD**	**$2,944.00**

001

confirguration:
12" character height w/software
permanent install
power at pole
red/blue strobes
graphics and text enabled
short ranger wireles access
"your speed" surround black on white

C.

STALKER radar
applied concepts, inc.

QUOTE #2076738

855 E. Collins Blvd
Richardson, TX 75081
Phone: 972-398-3780
Fax: 972-398-3781

National Toll Free: 1-800- STALKER

Inside Sales Partner: Pam Schneidewind, +1-972-801-4890, pams@stalkerradar.com

Reg Sales Mgr: Peter Bauer, 972-398-3780, peter@stalkerradar.com

Date: 08/02/23

Effective From : 08/02/2023 **Valid Through:** 10/31/2023 Lead Time: 45 working days

Bill To:	**Customer ID:** P17713	**Ship To:**	*FedEx Ground*
Dysart Police Dept 601 Wilson St Dysart, IA 52224-9733	Accounts Payable	Dysart Police Dept 601 Wilson St Dysart, IA 52224-9733	Chief Joe Hols

Grp	Qty	Package	Description	Wrnty/Mo	Price	Ext Price
1	1	836-0012-00	PMG 12 Inch Display with Traffic Analyst	24	$4,152.15	$4,152.15

Ln	Qty	Part Number	Description	Price	Ext Price
1	1	200-1312-00	12"PMG w/Traffic Analyst, configured with:		$0.00
2	1	035-0002-22	12" PMG Shipping Box		$0.00
3	4	035-0002-20	PMG Corner Packing Foam		$0.00
4	1	060-1000-24	24-Month Warranty		$0.00
5	1	006-0076-00	PMG Installation Guide		$0.00
6	1	200-1206-00	12" PMG Speed Display		$0.00
7	1	200-5500-10	12" PMG Controller, Normal Speed		$0.00
8	1	200-1206-10	12" PMG Bezel, White		$0.00
9	1	200-1338-10	12" PMG Display - Amber LED, Red/Blue Strobes		$0.00
10	1	062-0126-01	PMG Text and Graphics Option		$0.00
11	1	200-1206-50	No Flash Selected		$0.00
12	1	200-1206-55	12" PMG Pole Mount, 2-Part		$0.00
13	1	200-1395-01	PMG Battery Backpack - SLA w/Solar Controller		$0.00
14	1	200-1559-00	12" PMG w/Backpack Dual USB V2		$0.00
15	1	200-1206-70	PMG Short-Range Wireless Module		$0.00
16	1	200-1206-08	PMG Expanded Memory Option, 8GB		$0.00
17	1	200-1330-50	PMG 50W Solar Power Package		$0.00
18	1	200-1419-00	Battery Backpack Solar Option Kit		$0.00
19	1	200-1369-50	12" YOUR SPEED White Surround, Backpack		$0.00
				Group Total	$4,152.15

Grp	Qty	Package	Description	Wrnty/Mo	Price	Ext Price
2	1		Selected Accessories	0		$0.00

Ln	Qty	Part Number	Description	Price	Ext Price
20	1	200-1397-00	PMG Backpack Battery Kit - SLA 22Ah w/Wiring	$259.00	$259.00
21	1	200-1397-01	PMG Backpack Battery Wiring Kit - SLA	$90.00	$90.00
				Group Total	$349.00

** Continued on Next Page **

C.

STALKER radar
applied concepts, inc.

QUOTE #2076738

855 E. Collins Blvd
Richardson, TX 75081
Phone: 972-398-3780
Fax: 972-398-3781

National Toll Free: 1-800- STALKER

Inside Sales Partner: Pam Schneidewind, +1-972-801-4890, pams@stalkerradar.com

Reg Sales Mgr: Peter Bauer, 972-398-3780, peter@stalkerradar.com

Date: 08/02/23

Effective From : 08/02/2023 **Valid Through:** 10/31/2023 Lead Time: 45 working days

Bill To:	**Customer ID:** P17713	**Ship To:**	*FedEx Ground*
Dysart Police Dept 601 Wilson St Dysart, IA 52224-9733	Accounts Payable	Dysart Police Dept 601 Wilson St Dysart, IA 52224-9733	Chief Joe Hols

Product	$4,501.15	Sub-Total:	$4,501.15
Discount	$0.00	Sales Tax 0%	$0.00
		Shipping & Handling:	$89.50
Payment Terms: Net 30 days		**Total: USD**	**$4,590.65**

001

confirguration:
12" character height w/software
50W solar panel
(1) battery kit
(1) strap kit for battery #2
red/blue strobes
graphics and text enabled
"your speed" surround black on white

Rev. 6/16

IOWA DOT

Application for TRAFFIC SAFETY FUNDS

GENERAL INFORMATION **DATE:** 01/11/2023

Location / Title of Project First Street Stop Sign LED Flashers

Applicant City of Popejoy

Contact Person Gina Bradley Title City Clerk

Complete Mailing Address 1006 Main Street

Popejoy, Iowa 50227

Phone (641) 373-1660 E-Mail cityofpopejoy@hotmail.com
(Area Code)

If more than one highway authority is involved in this project, please indicate and fill in the information below (use additional sheets if necessary).

Co-Applicant(s) _____

Contact Person _____ Title _____

Complete Mailing Address _____

_____

Phone _____ E-Mail _____
(Area Code)

PLEASE COMPLETE THE FOLLOWING PROJECT INFORMATION:

Application Type

- ☐ Site Specific
- ☑ Traffic Control Device
- ☐ Safety Study

Funding Amount

Total Safety Cost	$ 1,475.00
Total Project Cost	$ 1,475.00
Safety Funds Requested	$ 1,475.00

Does this project appear on a Safety Improvement Candidate List or is there a safety study recommendation for this project?

- ☐ Yes – Explain _____
- ☑ No

Rev. 6/16

APPLICATION CERTIFICATION FOR LOCAL GOVERNMENT

To the best of my knowledge and belief, all information included in this application is true and accurate, including the commitment of all physical and financial resources. This application has been duly authorized by the participating local government(s). I understand the attached resolution(s) binds the participating local government(s) to assume responsibility if any additional funds are committed, and to ensure maintenance of any new or improved city streets or secondary roads.

I understand that, although this information is sufficient to secure a commitment of funds, a firm contract between the applicant and the Department of Transportation is required prior to the authorization of funds.

Representing the City of Popejoy, Iowa - Franklin County Iowa

Signed: Dale Maas — 01/11/2023

Signature — Date Signed

Dale Maas - Mayor

Typed Name

Attest: Gina Bradley — 01/11/2023

Signature — Date Signed

Gina Bradley - City Clerk

Typed Name

IOWA DEPARTMENT OF TRANSPORTATION
TRAFFIC SAFETY IMPROVEMENT PROGRAM (TSIP)
CITY OF POPEJOY, FRANKLIN COUNTY IOWA

APPLICATION NARRATIVE

The City of Popejoy is applying for Traffic Safety Improvement Program (TSIP) funds to be used to reimburse the purchase of mountable LED solar flashing beacons. These devices will be installed on the east-bound and west-bound stop signs located on First Street. The City of Popejoy's goal with the installation is to provide greater visibility of the stop signs, increasing safety for motorists and residents of the community.

Residents of Popejoy have brought concerns to the City Council that traffic regularly do not stop at the east-bound or west-bound stop signs. The City of Popejoy Park is located one block from the intersection of First Street (County Highway S21) and Main Street, leading the City Council to put public safety and awareness of the stop signs at the forefront of this application.

The City Council approved the purchase of two LED flashing beacons at the Regular City Council meeting October 11, 2022. The City Clerk placed the order as directed. The City of Popejoy requests reimbursement of funds paid for the material. Installation of the devices will be by community volunteer. The City of Popejoy will solely be responsible for the maintenance of these devices.

SCOPE OF WORK/SCHEDULE OF APPLICATION

October 2022 – City Council approved purchase of two LED solar flashing beacons
December 2022 – City Council approval of Resolution No. 12.5.2022
January 2023 – Submission of grant to the Iowa Department of Transportation
2023 – Await decision of grant application for reimbursement

RESOLUTION NO. 12.5.2022

WHEREAS, The Iowa Department of Transportation has adopted Administrative Rule 761-Chapter 164, which created the Traffic Safety Improvement Program (TSIP) to allow for funding to be provided to local jurisdictions for eligible traffic safety improvements; and

WHEREAS, the Popejoy City Council has determined that providing mountable solar flashing beacons on stop signs located on First Steet at the intersection of First Street and Main Street will improve safety for the City of Popejoy residents; and

WHEREAS, the Popejoy City Council recommends a TSIP application be submitted to the Iowa Department of Transportation for possible reimbursement of safety funds of the above-mentioned traffic control devices.

THEREFORE, BE IT RESOLVED, that the Popejoy City Council hereby supports and approves the application for the Iowa Department of Transportation Traffic Safety Improvement Program funding and commits to purchasing and maintaining the mountable flashing beacons.

ADOPTED THIS 13th DAY OF Dec., 2022

Roll Call Vote:
Lonnie Christensen: yes
Shi Trenary: yes
Sean Ludwig: yes
Dennis Bradley: yes

Dale Maas

Dale Maas, Mayor

Gina Bradley

Gina Bradley, City Clerk


STOP


STOP
HWY 521

Your ledlighting-solutions.com Order

sales@ledlighting-solutions.com <sales@ledlighting-solutions.com>
Tue 10/25/2022 12:49 PM

To: cityofpopejoy@hotmail.com <cityofpopejoy@hotmail.com>

ledlighting-solutions.com
42410 Winchester Rd
Temecula, CA 92590
US

Order Confirmation
Order #21416
Placed: 10/25/2022 13:49:45 EDT
Status: Pending

Thank you for your order. Below is a summary for your records. You may check the status of your order here. Feel free to contact us via email or at 888-925-1966 for assistance with this order.

Bill To

Name: Gina Bradley
Email: cityofpopejoy@hotmail.com
Phone: 6413731660
Company: City of Popejoy
Address: 1102 Prairie Street
Popejoy, IA 50227
US

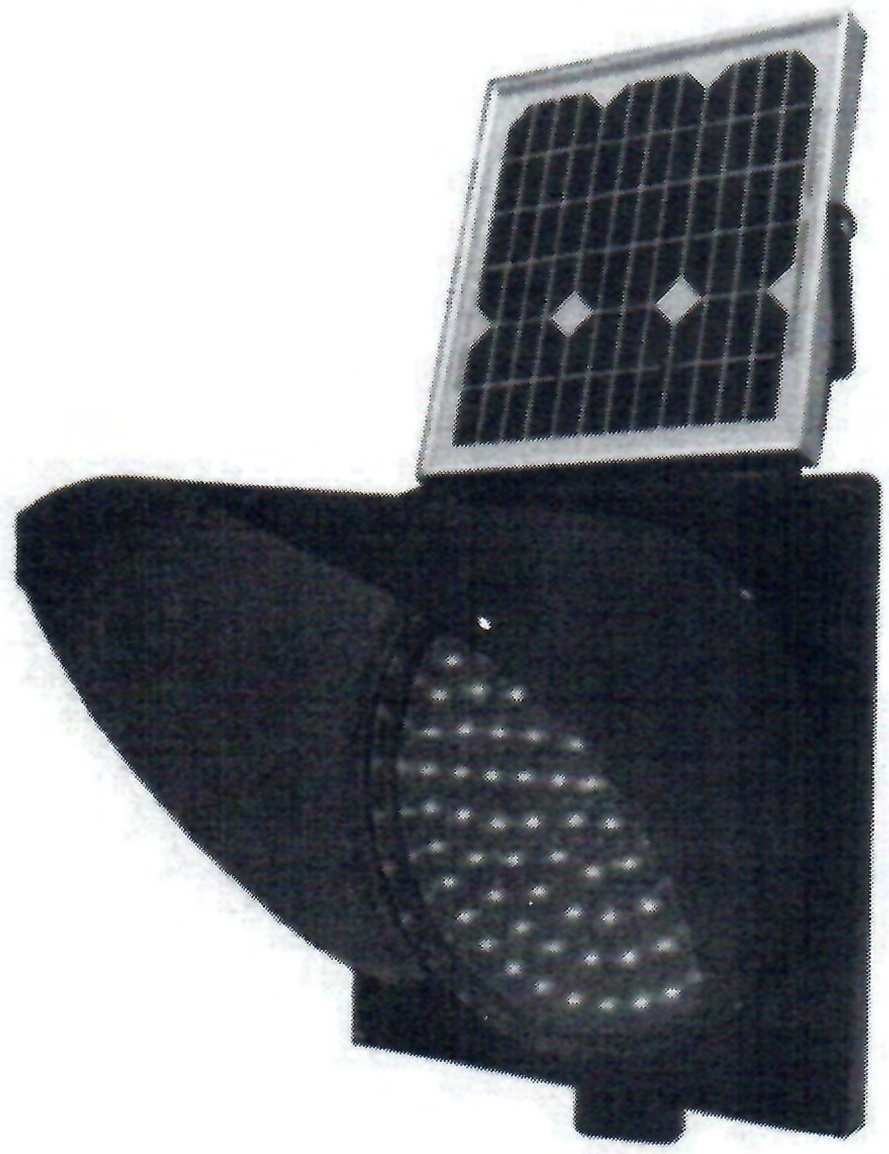
Ship To

Name: Gina Bradley
Email: cityofpopejoy@hotmail.com
Phone: 6413731660
Company: City of Popejoy
Address: 1102 Prairie Street
Popejoy, IA 50227
US

Item	Qty	Price	Total
8" Flashing Beacon CFLBC08 COLOR: RED	2	$699.99	$1,399.98

Shipping: Ground Shipping:	$57.02
Sales Tax:	$0.00
Total:	**$1,457.00**
Payment: Visa:	($1,457.00)

LED LIGHTING SOLUTIONS



SOLAR LED FLASHING BEACON

- Our bright Solar Powered LED Flashing Beacon is part of our solar traffic safety series

- The beacon's bright flashing LED Lights can be seen from over 2500ft and makes for a great addition to high traffic areas

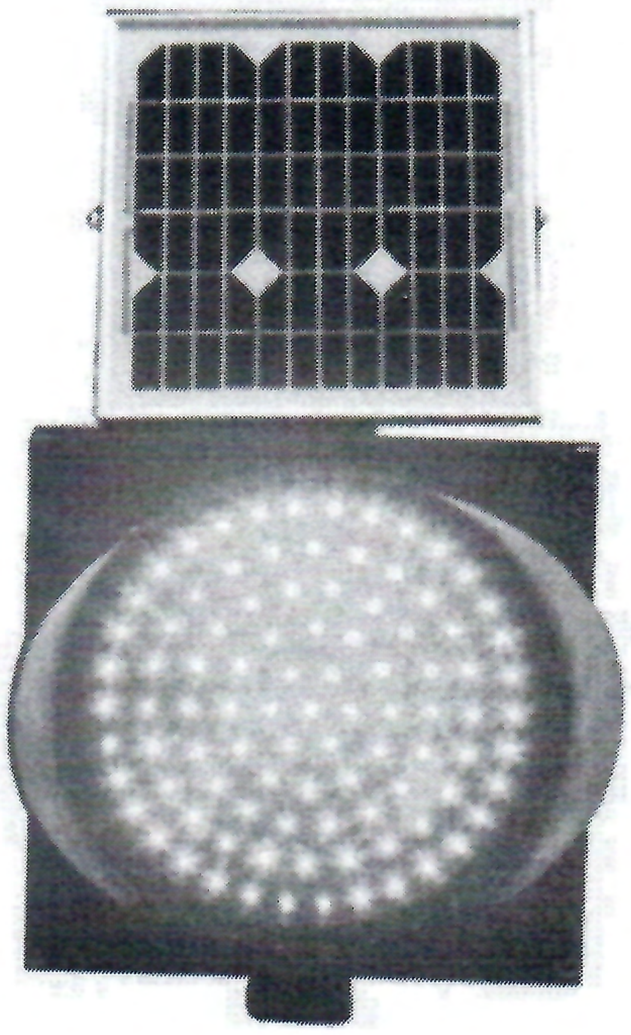
- Made with ABS plastic shell and high intensity LED flashing lights

- Beacon has a rechargeable battery and mountable solar panel that makes this product energy efficient and easy to use in locations where there in sunlight

PRODUCT APPLICATIONS

The Solar Powered LED Flashing Beacon can be widely used for residential driving areas, private lots, shopping centers, school zones and many other driving areas.

PRODUCT SPECIFICTIONS



TYPE: Solar LED Flashing Warning Light

SOLAR CHARGING PANEL: Monocrystalline Silicone

- [x] 8" Beacon Solar Charging Panel: 18V, 8W
- [ ] 12" Beacon Solar Charging Panel: 18V, 10W

LIGHT: 10W LED

WORKING MODE OPTIONS:

- [x] 24/7
- [ ] Timer Activation

BATTERY: Lithium Battery 12V / 1400AH

COLOR OPTIONS: Amber or Red

FLASHING: 50 times per minute

VISIBLE DISTANCE: >2500 Feet

MATERIAL: ABS Plastic

WORKING TIME: After one full charge, 5-7 consecutive days

BATTERY LIFE SPAN: 3-5 Years

SIZE OPTIONS: 8" Diameter Beacon / 12" Diameter Beacon

INCLUDES:

- FIXTURE
- SOLAR PANEL
- MOUNTING HARDWARE
- LIGHT SHIELD

LED LIGHTING SOLUTIONS | 29990 TECHNOLOGY DRIVE, SUITE 15 | MURIETA | CALIFORNIA | 92563 | 888-925-1966

Application for TRAFFIC CONTROL DEVICE TSIP FUNDS

GENERAL INFORMATION **DATE:** _____

Location / Title of Project Park Avenue Bicycle Lanes

Applicant City of Waterloo Iowa

Contact Person Mohammad Elahi Title Traffic Operations Interim Director

Complete Mailing Address 625 Glenwood Street, Waterloo, Iowa 50703

Phone (319) 291-4440 E-Mail Mohammad.elahi@waterloo-ia.org
(Area Code)

If more than one highway authority is involved in this project, please indicate and fill in the information below (use additional sheets if necessary).

Co-Applicant(s) _____

Contact Person _____ Title _____

Complete Mailing Address _____

Phone _____ E-Mail _____
(Area Code)

PLEASE COMPLETE THE FOLLOWING PROJECT INFORMATION:

Funding Amount

Total Safety Cost	$ 47,000
Total Project Cost	$ 47,000
Safety Funds Requested	$ 47,000

Does this project appear on a Safety Improvement Candidate List or is there a safety study recommendation for this project?

☐ Yes – Explain _____

☐ No

APPLICATION CERTIFICATION FOR PUBLIC AGENCY

To the best of my knowledge and belief, all information included in this application is true and accurate, including the commitment of all physical and financial resources. This application has been duly authorized by the participating public agency(ies). I understand the attached resolution(s), where applicable, binds the participating public agency(ies) to assume responsibility for any additional funds, if required, to complete the project. In addition, the participating public agency(ies) agrees to maintain any new or improved public streets or roadways for a minimum of five years.

I understand that, although this information is sufficient to secure a commitment of funds, a firm contract between the applicant and the Department of Transportation is required prior to the authorization of funds.

Representing the City of Waterloo

Signed: _____ 8/7/2023

Signature Date Signed

Quentin Hart

Printed Name

Attest: _____ 8/7/2023

Signature Date Signed

_____

Printed Name

Traffic Control Device Application

PARK AVENUE BICYCLE LANES RELOCATION

City of Waterloo
Summer 2023

Prepared by LeAnn M. Even, Deputy City Clerk, City of Waterloo, 715 Mulberry Street, Waterloo, IA 50703, (319) 291-4323.

RESOLUTION NO. 2023-464

RESOLUTION APPROVING SUBMISSION OF AN IOWA DOT TRAFFIC SAFETY IMPROVEMENT GRANT APPLICATION IN THE AMOUNT OF $47,000.00, FOR INSTALLATION OF REDESIGNED BICYCLE LANES AND COMMITTING TO MAINTAINING THE IMPROVEMENTS FOR THE LIFE OF THE PROJECT.

BE IT RESOLVED BY THE CITY COUNCIL OF THE CITY OF WATERLOO, IOWA, that submission of the Traffic Safety Improvement Grant application from the Iowa Department of Transportation, in the amount of $47,000.00, for installation of redesigned bicycle lanes and committing to maintaining the improvements for the life of the project, is hereby approved.

PASSED AND ADOPTED this 7th day of August 2023.

Quentin Hart DIGITALLY SIGNED

Quentin Hart, Mayor

ATTEST:

Kelley Felchle DIGITALLY SIGNED

Kelley Felchle, City Clerk

SEAL

NARRATIVE
TRAFFIC CONTROL DEVICE APPLICATION
PARK AVENUE BICYCLE LANES

EXISTING CONDITIONS

Park Avenue from Washington Street to Franklin Street was a four-lane roadway with a speed limit of 30 MPH and low traffic volumes (3200-5800 AADT in 2017). The City reduced the number lanes from 4 to 2, installed parking protected bicycle lanes, and reduced speed limit to 20 MPH. Existing bicycle are now next to the curb and cars park between the bicycle lanes and traffic lanes. The sidewalks on both sides remained intact. A cross-over weaving area between the bike lanes and car lanes was installed at intersection approaches to create a right turn lane for cars.

Problem: As soon as the project was completed the bicyclists and the drivers started to complain. Bicyclist complained about being uncomfortable at the cross-over point, cars parking on the bicycle path, debris that ended up washed next to the curb, and the pavement condition especially at intake crates. The bike lanes are not meeting the intended objectives of ensuring the safety of bicyclists. Cyclists frequently avoid using the bike lanes. They either illegally use the sidewalks, endangering pedestrians and themselves, or mix with vehicular traffic risking their well-being. There are some inherent safety concerns associated with the current "parking protected" bike lane design next to the curb. Drivers are frequently confused as to where they are supposed to park and park next to the curb blocking the bike lane. The curbs tend to accumulate debris that pose an additional hazard. At intersection approaches bicyclists merge from behind parked cars to cross paths with right turning traffic. Cars do not see the bicyclist in time. The require maneuver and markings is unusual and confuses both the driver and cyclists. Cyclists tend to avoid the bike lane after they have used it once or twice. Individual bicyclists, the Cedar Valley Bicycle Association, Waterloo Complete Streets Committee, and some City Council members have complained about the safety of the existing design.

PROPOSED CONCEPT

Based on collaboration and consultations with bicyclists, bicycle coalition, and complete streets committee, we propose to relocate the bicycle lanes on Park Avenue from the curb-side to a widely recognizable safer position, between parked cars and the traffic lane, and make it a straight path without any diversion points. This will encourage more bicyclists to use the designated lanes promoting safer and more efficient cycling. Painting the bike lanes green will make the lanes stand out. As part of this project curb extension bulb-outs at intersections are also proposed.

SAFETY JUSTIFICATION

By implementing this solution, we aim to eliminate the hazardous situations created when cars park in the bike lanes, avoiding debris found next to the curb on the existing bike lane location, avoiding uneven intake crates, and eliminating the unfamiliar weaving point. Relocating the bicycle lanes will enhance overall traffic safety for both road users and pedestrians, as bicycles

will have dedicated spaces away from both parked vehicles and sidewalks. This design also puts the bicyclists and the drives in constant view of one another enhancing safety. Another safety improvement measure, made possible by the proposed change, will be ability to add curb extension bulb outs at intersections. Risk of right hook crashes has been reduced due to existence of bicycle signals. Relocating bike lanes will free up sidewalks, reducing conflicts between pedestrians and cyclists, thus enhancing pedestrian safety. Painting the lanes green will improve safety by making the lanes standout and help attract drivers' attention and emphasize that this part of the roadway is set aside for bicycles.

Other benefits: This project will improve accessibility in the downtown area. Park Avenue bicycle lanes connect the trail systems north and south of Waterloo, providing a critical connection within the citywide bike network.

ITEMIZED BREAKDOWN OF ALL COSTS

ITEM	QUANTITY	UNITS	UNT COST	TOTAL ITEM COST
PAINT REMOVAL	550	STN	38	20,900
GREEN PAINT	450	GAL	13	5,850
WHITE PAINT	100	GAL	11	1,100
BOLLARD	274	EACH	40	10,960
SIGN & SIGN POST	42	EACH	80	3,360
Traffic Control	1	LS	2500	2500
INCIDENTALS	1	LS	500	500
SUBTOTAL				47,170
CONTINGENCY 5%				2,259
TOTAL				47,429
ROUNDED				**$47,000**

TIME SCHEDULE

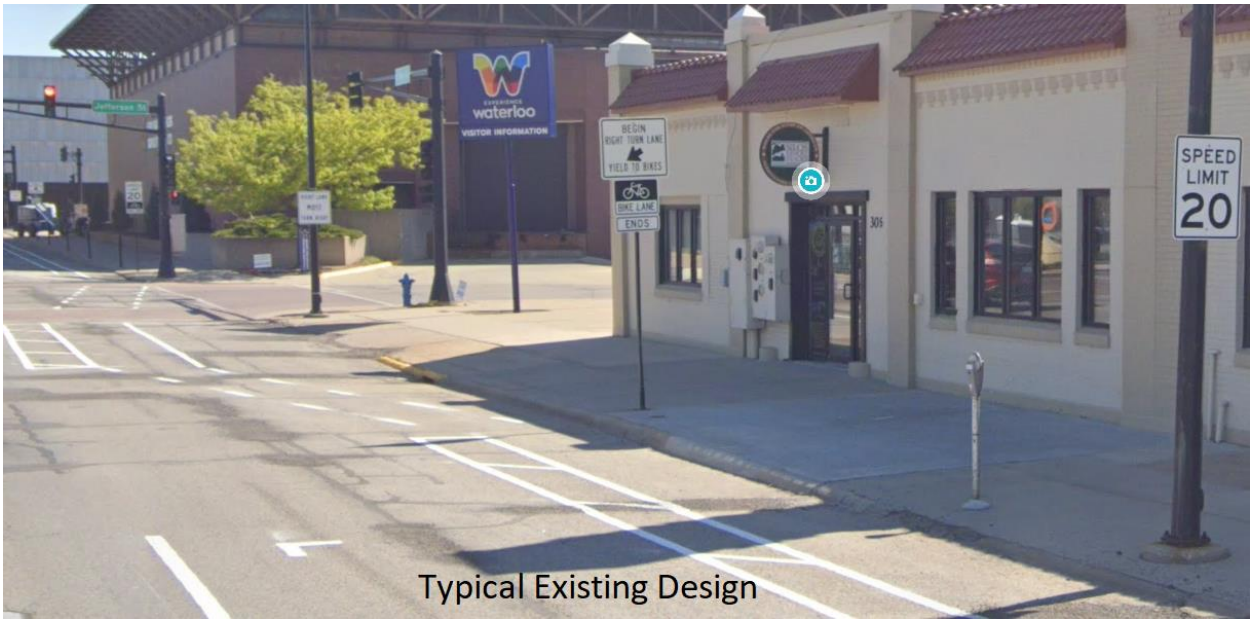
The proposed Schedule for the relocation of bicycle lanes on Park Avenue is as follows:

1. City-State Agreement Exchange: By June 2024
2. Design: June 2024-August 2024
3. Construction: September 2024-October 2024
4. Completion October 2024

LOCATION MAP

E

F. COLOR PICTURES of the project site



Typical Existing Design


Intakes Post Hazard


Parked Cars
Block Bike Lanes


E Park Ave
Typical Existing Layout

Typical Existing Design

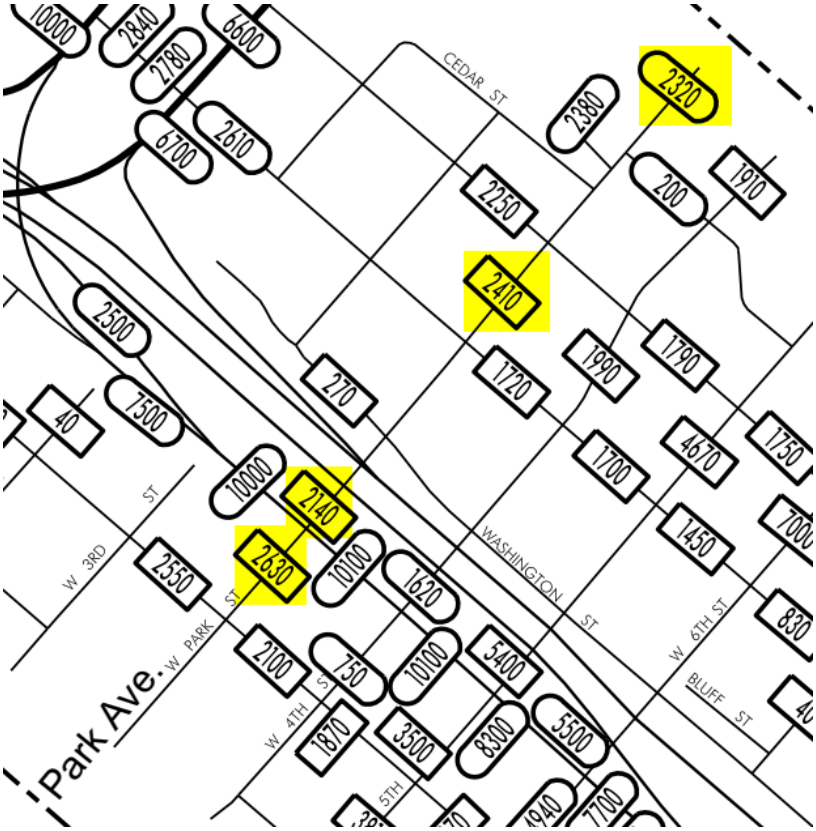
Existing Section with
Parking on 1 Side Only

G. PLAN VIEW


Proposed Design: Grey is Parking Next to
the Curb. Green is Bike Lane. White is Buffer.

H. Recent TRAFFIC VOLUMES AND/OR TURNING MOVEMENT

Iowa DOT 2021 volume shown below are about half of 2017 numbers (Due to Covid perhaps.)



A: Application Rev. 07/23

Application for TRAFFIC CONTROL DEVICE TSIP FUNDS

GENERAL INFORMATION **DATE:** August 11, 2023

Location / Title of Project City of Waucoma Radar Speed Signs

Applicant City of Waucoma

Contact Person Marlene Klemp Title City Clerk

Complete Mailing Address PO Box 5

Waucoma, IA 52171

Phone 563-380-6528 E-Mail waucomacityclerk@gmail.com

(Area Code)

If more than one highway authority is involved in this project, please indicate and fill in the information below (use additional sheets if necessary).

Co-Applicant(s) _____

Contact Person _____ Title _____

Complete Mailing Address _____

_____

Phone _____ E-Mail _____

(Area Code)

PLEASE COMPLETE THE FOLLOWING PROJECT INFORMATION:

Funding Amount

Total Safety Cost	$	12,500.
Total Project Cost	$	12,500.
Safety Funds Requested	**$**	**12,500.**

Additional Project Safety Documentation (when available):

- ☐ Project information sheet(s) or "Risk Score">50% from County/City's Local Road Safety Plan
- ☐ FHWA SS4A Safety Action Plan or similar comprehensive transportation safety plan
- ☐ Iowa DOT TEAP Study or similar analysis and concept
- ☐ Project intersection or segment with High or Medium PCR Level (PCR-All or PCR-Severe) from the Iowa DOT Potential for Crash Reduction (PCR) web-based map tool https://pcr.iowadot.gov/

Potential for Crash Reduction (PCR) Information					
Intersection ID (1234567890) or Segment ID (1234)	Intersection or Segment	PCR Level High	PCR Level Medium	PCR-All value	PCR-Severe value
		☐	☐		
		☐	☐		

Rev. 07/23

APPLICATION CERTIFICATION FOR PUBLIC AGENCY

To the best of my knowledge and belief, all information included in this application is true and accurate, including the commitment of all physical and financial resources. This application has been duly authorized by the participating public agency(ies). I understand the attached resolution(s), where applicable, binds the participating public agency(ies) to assume responsibility for any additional funds, if required, to complete the project. In addition, the participating public agency(ies) agrees to maintain any new or improved public streets or roadways for a minimum of five years.

I understand that, although this information is sufficient to secure a commitment of funds, a firm contract between the applicant and the Department of Transportation is required prior to the authorization of funds.

Representing the City of Waucoma, Iowa

Signed: _____ 8-13-23
Signature Date Signed

Justin Haught
Printed Name

Attest: Marlene Klemp 8-11-23
Signature Date Signed

Marlene Klemp
Printed Name

RESOLUTION NO. 2023-15:
A RESOLUTION APPROVING TRAFFIC SAFETY IMPROVMENTS PROGRAM APPLICATION FOR RADAR SPEED LIMIT SIGNS

WHEREAS, the Iowa department of Transportation has adopted Administrative Rule 761, Chapter 164, which created the Traffic Safety Improvement Program (TSIP) to allow for funding to be provided to local jurisdictions for eligible traffic safety improvement projects; and

WHEREAS, the City of Waucoma has determined that providing radar speed sign will help slow down traffic within our city limits.

WHEREAS, radar speed signs are recognized as speed control devices in the manual on uniform traffic control devices, 2009 edition, and

WHEREAS, the City Council of the City of Waucoma, Iowa recommends a TSIP application be submitted to the Iowa Department of Transportation for possible safety funding for the above-mentioned devices.

NOW, THEREFORE, BE IT RESOLVED, by the City Council of the City of Waucoma, Iowa, endorses the above-mentioned project and hereby commits to accepting and maintaining these radar speed control devices.

BE IT FURTHER RESOLVED, that the Mayor and City Clerk of Waucoma, IA are hereby directed to submit the said funding application to the Iowa Department of Transportation for possible Traffic Safety Improvement Funding.

Passed and adopted 7th day of August, 2023.

AYES: Kramer, Schmitt, Winter, Lauer, Kleve

NAYS: None

Justin Haught, Mayor

ATTEST:

Marlene Klemp

Marlene Klemp, City Clerk

It was moved by Council Member Kramer and seconded by Council Member Schmitt that the foregoing Resolution 2023-15 be adopted. The motion was duly put to a vote of the Waucoma City Council, the ayes and nays were called and the vote thereon was as follows:

AYES: Kramer, Schmitt, Winter, Lauer, Kleve

NAYS: None

ABSENT: None

Whereupon the Mayor declared the motion duly carried and the Resolution duly adopted.

CERTIFICATION

I, Marlene Klemp, City Clerk of the City of Waucoma, Iowa, do hereby certify that the attached Resolution No. 2023-15 is a true copy of a Resolution adopted by the City Council of the City of Waucoma, IA at a regular meeting of the City Council held on the 7th day of August, 2023, and the vote thereon as recorded in the records of the city now in my custody.

Dated this 7th day of August, 2023.

Marlene Klemp

Marlene Klemp, City Clerk

City Seal

TSIP Grant Application
City of Waucoma, Iowa
August 11, 2023

B: Narrative:

The City of Waucoma, Iowa is applying for the Traffic Safety Improvement Program Grant (TSIP) to purchase 3 radar speed signs. The City of Waucoma would use these signs to help aid the current speed signs located on three major entrances into town which are all used heavily. We are a small town of only 229 people so we do not have a police department and rely on a 28E agreement with our Fayette County Sherriff's office for law enforcement. We are on the very NW corner of our large county and traffic enforcement is not often readily available. These radar speed signs would help with the lack of law enforcement we have in town.

Location #1. V68 (Riverview Drive) is a farm to market road that goes through downtown Waucoma. It is also the road on which the Turkey Valley Community School is located just north of town. Many cars, semis and trucks come into town speeding on this road. Our city park and a campground is located near this entrance into town as well so there are often kids and families crossing this farm to market road. Our City Council feels the need to slow down traffic coming into Waucoma for the safety of all. We had an accident at this location this Spring where a car was speeding into town, lost control nearly crashing into a home.

Location #2. The west side of town where V68 (Riverview Drive) comes into Waucoma is near our big Waucoma Event Center which can hold over 500 people. This is also on a curve just at the city limits with a cornfield near the event center entrance. It is vital that people obey the speed limits here for the safety of traffic coming in and out of this Event Center.

Location #3. The 3rd Street NW (Whitetail Road) entrance into Waucoma is near Lynch Livestock and the Waucoma Tire Company. These are two very big businesses which bring many semi-trucks and vehicles into town. These businesses are located on the north side of the road with a church and senior housing center located on the south side which again means many people turning. We many problems with people speeding into Waucoma at all three of these locations and with limited funds we cannot afford the signs needed to keep our residents and people traveling through town safe. The City of Waucoma will install and maintain these signs. The goal is to move traffic through our town safely!

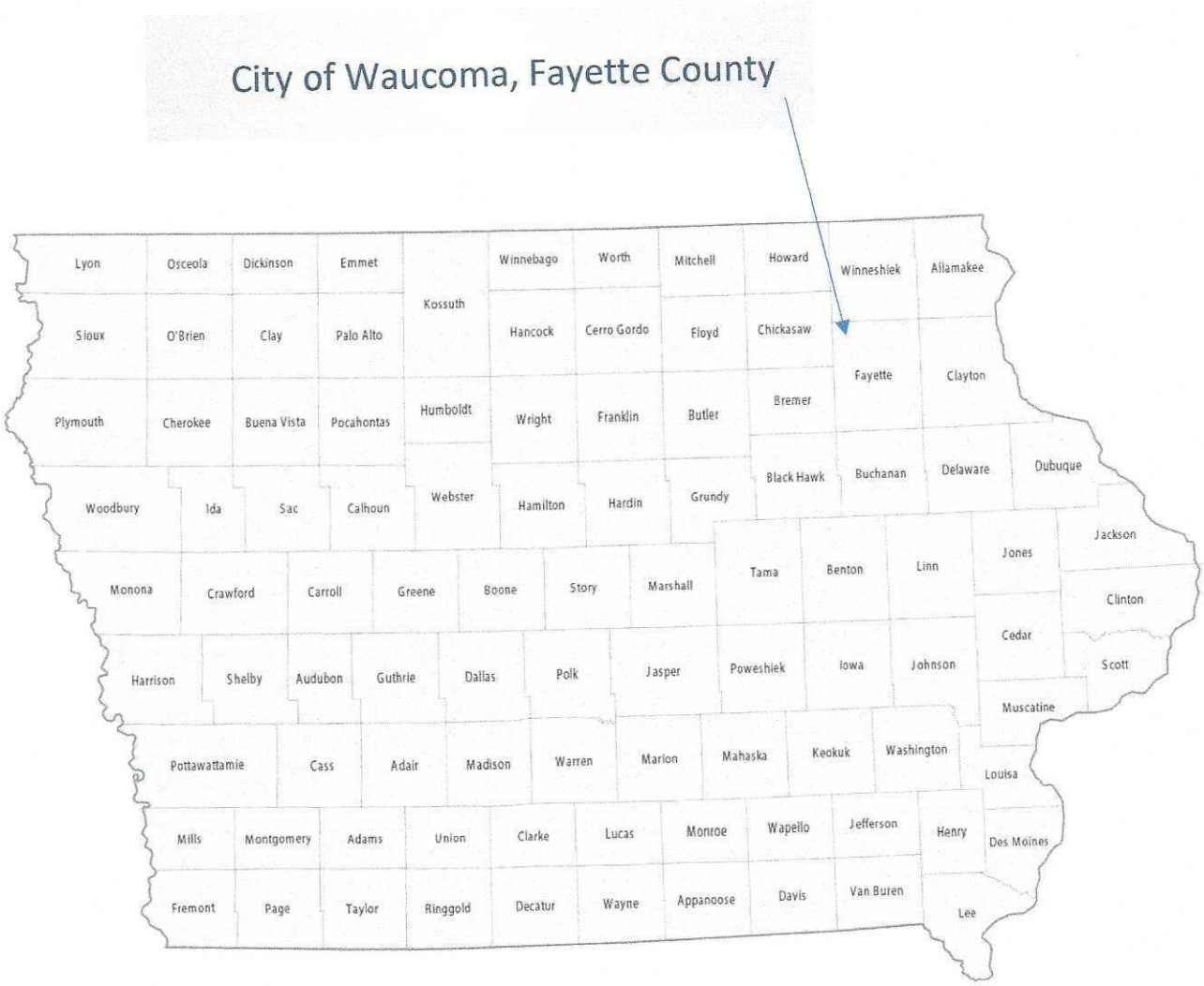
C: Cost:

Item	Description	Units	P.U.	Price
1	Radar Speed Sign Solar Version	3	$3,000.00	$9,000.00
2	95 W Solar Panel with fastenings included	3	$600.00	$1,800.00
3	Yuasa battery pack 12v22Ah with integrated fuse protection	6	$125.00	$750.00
4	Delivery Charge	1	$350.00	$350.00
				$11,900.00
	Contingency 5%			$600.00
	Grand Total			**$12,500.00**

D: Time Schedule

TSIP Application Due	August 15, 2023
TSIP Notification of Award	January 2024
TSIP Funding Available	July 1, 2024
Quotes Accepted	August 15, 2024
Installation Begins	September 15, 2024
Installation Complete	October 1, 2024

E. Project Location

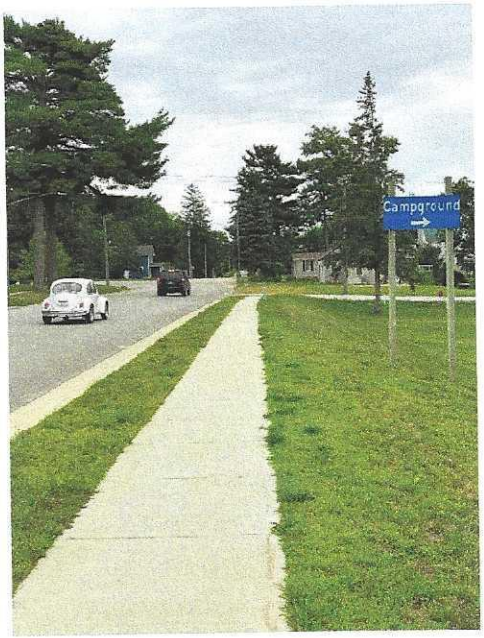


F: Color Pictures of Project Site

Location # 1

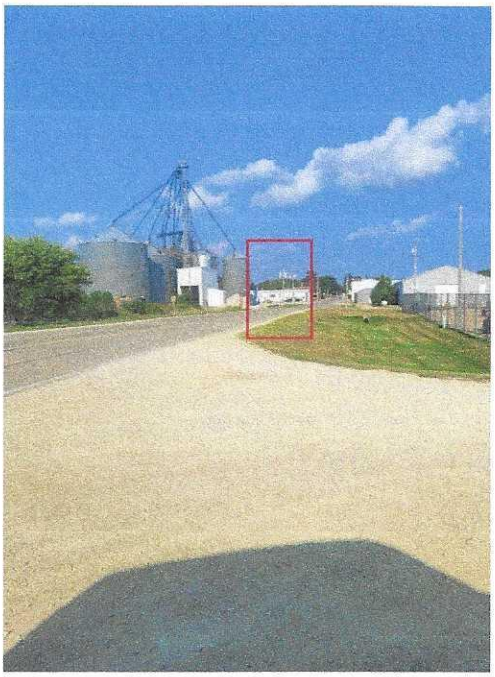
Proposed Traffic Control Location #1

Riverview Dr (V68 from North)



Showing Waucoma park and Campground Entrance

Location #2

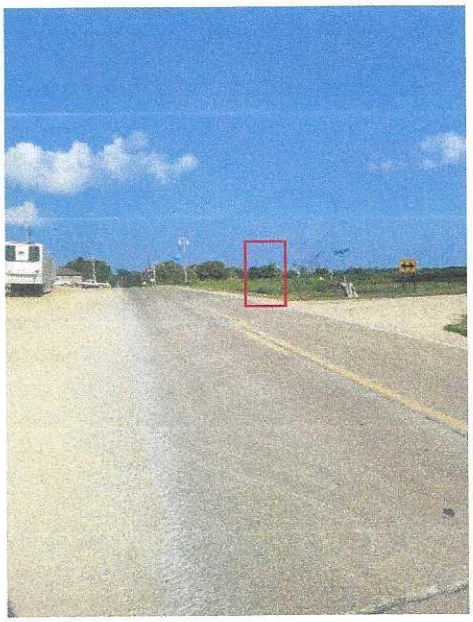


Proposed Traffic Control Location #2

Riverview Dr (V68 from South)

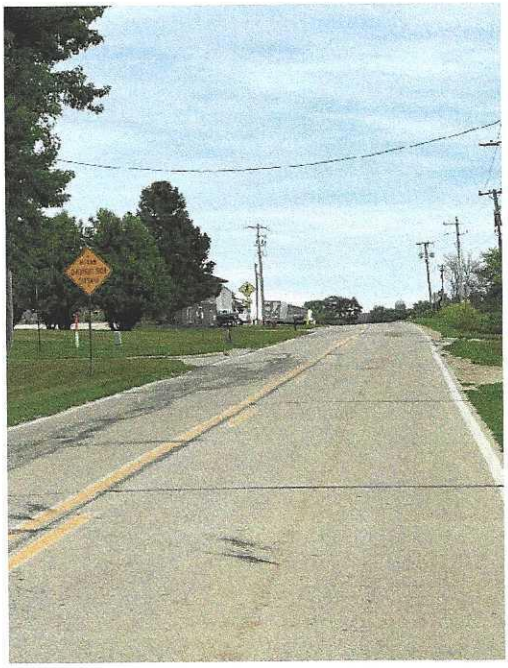
Showing Waucoma Event Center entrance and corn field

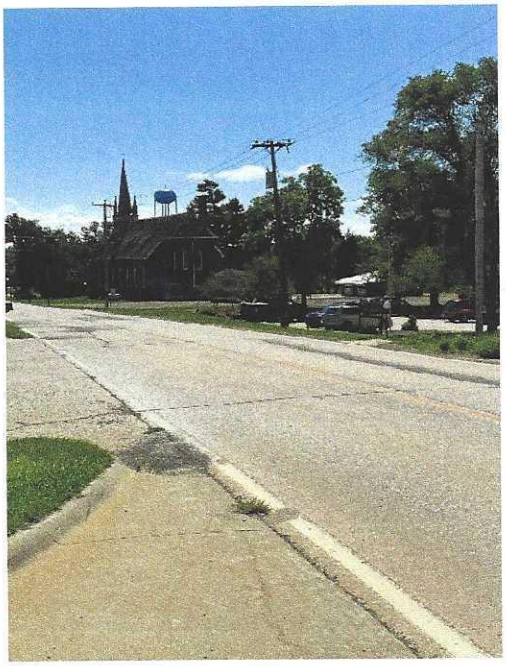
Location #3



Proposed Traffic Control Location #3

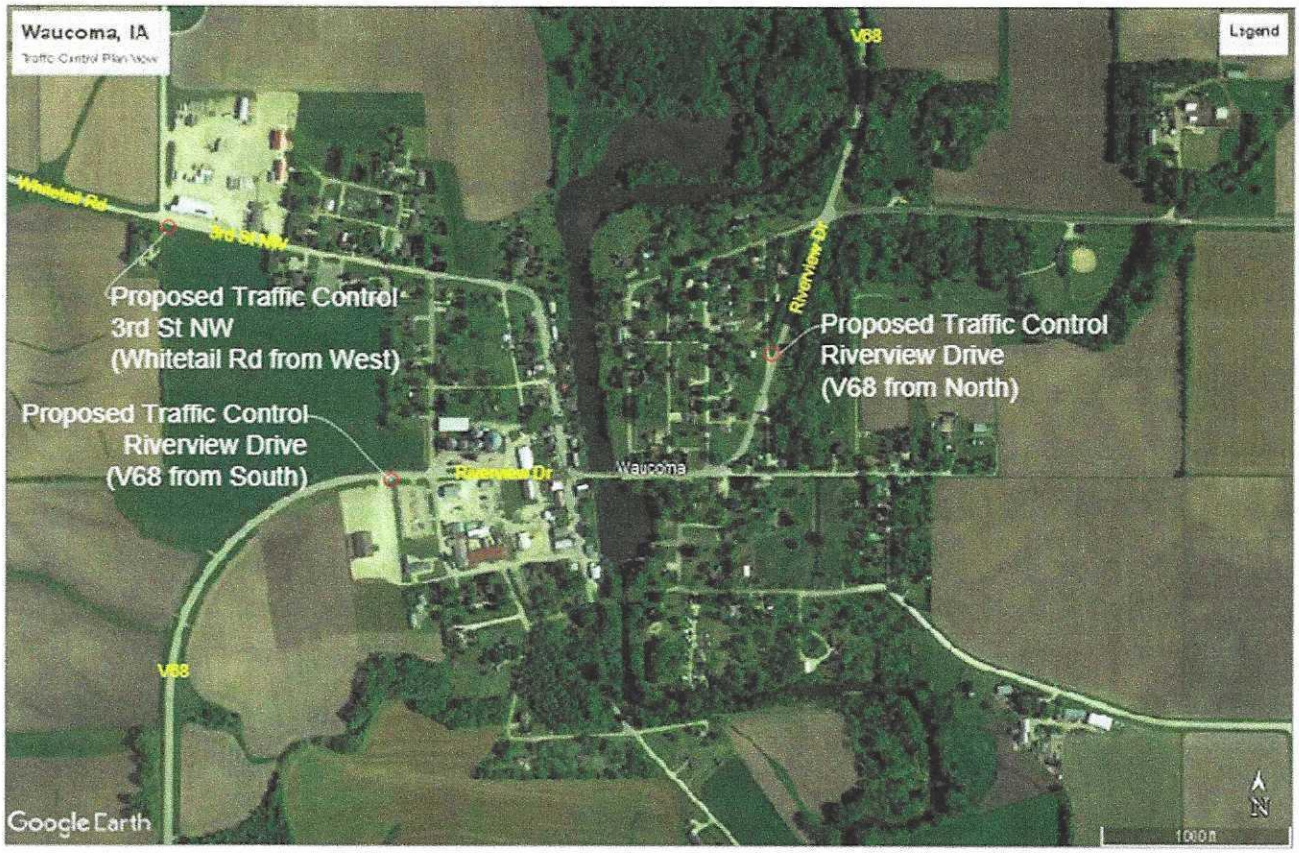
3rd St NW (Whitetail Rd from West)

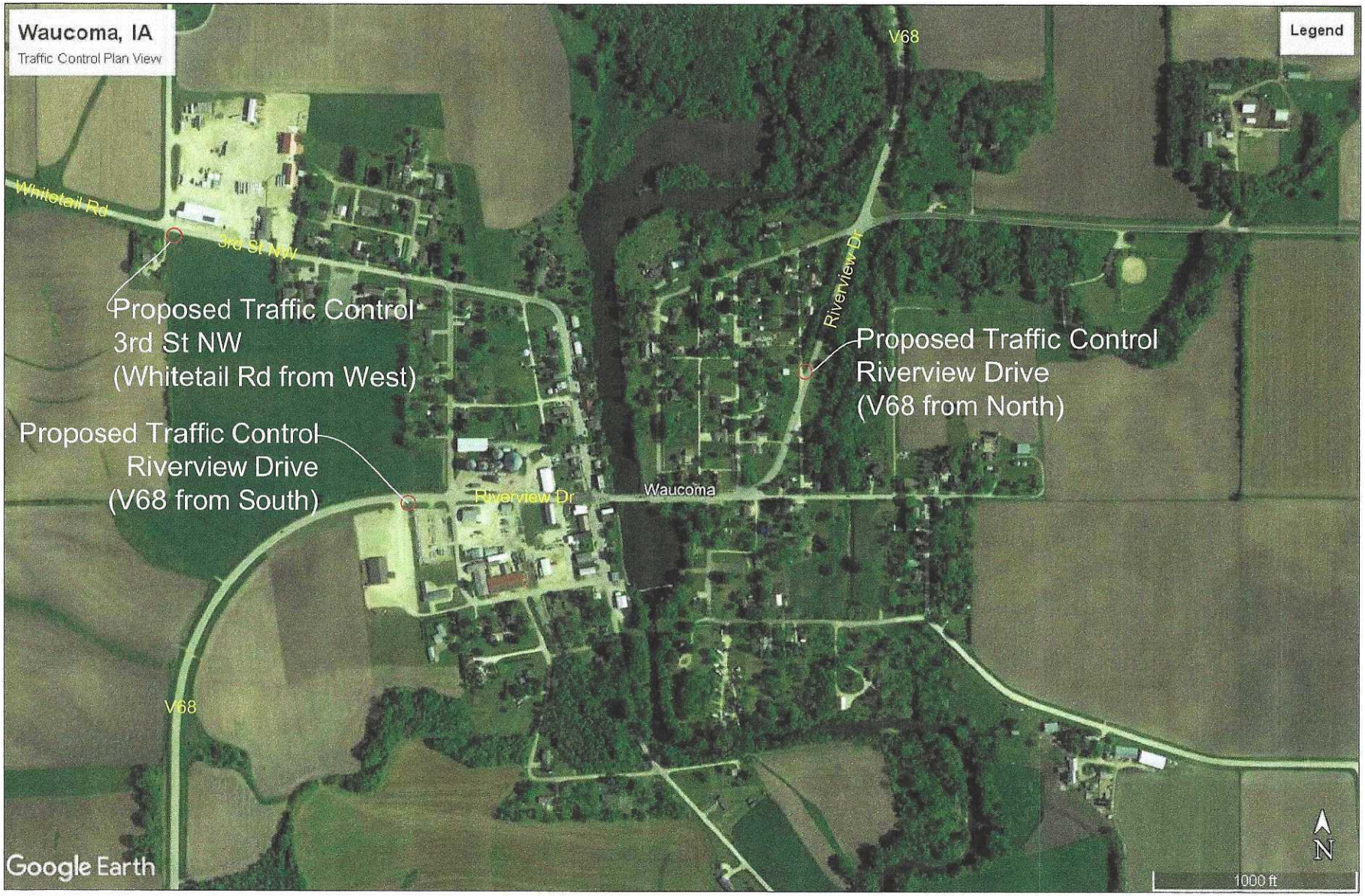




Showing church entrance, senior manor entrance and Lynch Livestock entrance

G: Plan View


Waucoma, IA
Traffic Control Plan View
Legend
V68
Whitetail Rd
3rd St NW
Riverview Dr
Proposed Traffic Control
3rd St NW
(Whitetail Rd from West)
Proposed Traffic Control
Riverview Drive
(V68 from North)
Proposed Traffic Control
Riverview Drive
(V68 from South)
Riverview Dr
Waucoma
V68
Google Earth
N
100 ft


Waucoma, IA
Traffic Control Plan View
Legend
V68
Whitetail Rd
3rd St NW
Riverview Dr
Proposed Traffic Control
3rd St NW
(Whitetail Rd from West)
Proposed Traffic Control
Riverview Drive
(V68 from North)
Proposed Traffic Control
Riverview Drive
(V68 from South)
Riverview Dr
Waucoma
V68
Google Earth
N
1000 ft

Rev. 07/23

Application for TRAFFIC CONTROL DEVICE
TSIP FUNDS

GENERAL INFORMATION **DATE:** 8-10-2023

Location / Title of Project Traffic signal head upgrades at 6 locations

Applicant City of West Des Moines

Contact Person Eric Petersen Title Principal Traffic Engineer

Complete Mailing Address 4200 Mills Civic Pkwy, PO Box 65320

West Des Moines, IA 50265

Phone (515) 273-0656 E-Mail Eric.Petersen@wdm.iowa.gov
(Area Code)

If more than one highway authority is involved in this project, please indicate and fill in the information below (use additional sheets if necessary).

Co-Applicant(s) _____

Contact Person _____ Title _____

Complete Mailing Address _____

_____

Phone _____ E-Mail _____
(Area Code)

PLEASE COMPLETE THE FOLLOWING PROJECT INFORMATION:

Funding Amount

Total Safety Cost	$	90,000
Total Project Cost	$	90,000
Safety Funds Requested	**$**	**90,000**

Additional Project Safety Documentation (when available):

☐ Project information sheet(s) or "Risk Score">50% from County/City's Local Road Safety Plan

☐ FHWA SS4A Safety Action Plan or similar comprehensive transportation safety plan

☐ Iowa DOT TEAP Study or similar analysis and concept

☒ Project intersection or segment with High or Medium PCR Level (PCR-All or PCR-Severe) from the Iowa DOT Potential for Crash Reduction (PCR) web-based map tool https://pcr.iowadot.gov/

Potential for Crash Reduction (PCR) Information					
Intersection ID (1234567890) or Segment ID (1234)	Intersection or Segment	PCR Level High	PCR Level Medium	PCR-All value	PCR-Severe value
2017067352	22nd St & Westown Pkwy	☒	☐	52	9
2017066141	50th St & University Ave	☒	☐	41	11
2017133002	50th St & Interstate 235 North Ramp	☐	☒	23	5

Rev. 07/23

APPLICATION CERTIFICATION FOR PUBLIC AGENCY

To the best of my knowledge and belief, all information included in this application is true and accurate, including the commitment of all physical and financial resources. This application has been duly authorized by the participating public agency(ies). I understand the attached resolution(s), where applicable, binds the participating public agency(ies) to assume responsibility for any additional funds, if required, to complete the project. In addition, the participating public agency(ies) agrees to maintain any new or improved public streets or roadways for a minimum of five years.

I understand that, although this information is sufficient to secure a commitment of funds, a firm contract between the applicant and the Department of Transportation is required prior to the authorization of funds.

Representing the City of West Des Moines

Signed: _____ 8.10.2023
Signature Date Signed

Brian J Hemesath
Printed Name

Attest: _____ 8-10-2023
Signature Date Signed

Eric R Petersen
Printed Name

CERTIFICATION OF GRANT APPLICATION
FOR TRAFFIC SIGNAL IMPROVEMENT PROGRAM (TSIP) FUNDS

The City of West Des Moines strongly promotes the reduction of traffic-related incidents and the safe mobility for all users of the transportation system.

Authorization is given to apply for Iowa Department of Transportation Traffic Safety Improvement Program (TSIP) Funds for the purchase of programmable signal heads for 6 different traffic signal approaches in areas with the highest number of red-light-running crashes.

If the project is funded, the City of West Des Moines will adequately maintain the completed project for its intended public use following project completion.

Tom Hadden, City Manager

Project Narrative

Background and Existing Conditions

The City of West Des Moines recently analyzed the locations of red-light-running (RLR) crashes in the City. Using data from the Iowa DOT's *Iowa Crash Analysis Tool* (ICAT), City staff determined which intersections had the highest numbers of RLR crashes. These intersections were further examined in ICAT to see which directions had the highest occurrences of RLR.

The crash data gathered from ICAT indicates that closely-spaced traffic signals appear to be a key contributor to RLR crashes in West Des Moines. One of the many disadvantages of closely-spaced traffic signals is that drivers who are approaching a red light may be seeing a green light just downstream at the far signal, creating confusion and potentially leading to a crash. An example of this is illustrated in the figure below.

Out of the 7 intersections with the most RLR crashes in West Des Moines, 6 of them are located in areas with a traffic signal less than 600' away (signal spacing is typically recommended to be 1,000'). These locations are:

- *Jordan Creek Parkway & Vista Drive*

  Since January 1, 2018, the intersection with the highest number of RLR crashes in West Des Moines is at Jordan Creek Parkway & Vista Drive. This intersection has had 22 RLR crashes in the last 5.5

years, and a northbound driver was at-fault in 19 of the 22 RLR crashes. Just north of this intersection (440'), a traffic signal is located at Jordan Creek Parkway & Interstate 80 North Ramp.

- *22nd Street & Westown Parkway* ***– PCR Level Severe Crashes: HIGH***

There have been 16 RLR crashes at this intersection since January 2018 (5.5 years). A southbound driver was at-fault in 8 of the 16 RLR crashes. Just south of this intersection (510'), a traffic signal is located at 22nd Street & Kingman Avenue.

- *50th Street & University Avenue* ***– PCR Level Severe Crashes: HIGH***

There have been 15 RLR crashes at this intersection since January 2018 (5.5 years). Crashes were roughly split between eastbound and westbound drivers running the red light. Just east of this intersection (500'), a traffic signal is located at University Avenue & Petsmart/4900 University.

- *50th Street & Interstate 235 North Ramp* ***– PCR Level Severe Crashes: MEDIUM***

There have been 13 RLR crashes at this intersection since January 2018 (5.5 years). A southbound driver was at-fault in 9 of the 13 RLR crashes. Just south of this intersection (470'), a traffic signal is located at 50th Street & Interstate 235 South Ramp.

- *Valley West Drive & Westown Parkway*

There have been 12 RLR crashes at this intersection since January 2018 (5.5 years). A southbound driver was at-fault in 9 of the 12 RLR crashes. Just south of this intersection (570'), a traffic signal is located at Valley West Drive & Interstate 235 North Ramp.

- *Valley West Drive & Interstate 235 North Ramp*

There have been 10 RLR crashes at this intersection since January 2018 (5.5 years). A northbound driver was at-fault in 8 of the 10 RLR crashes. Just north of this intersection (570'), a traffic signal is located at Valley West Drive & Westown Parkway.

Speed limits are 35 mph on all the City streets at these intersections, with the exception of Jordan Creek Parkway which is 40 mph. All traffic control devices meet requirements of the Federal Highway Administration's *Manual on Uniform Traffic Control Devices* (*MUTCD*).

Proposed Project and Safety Benefits

Based on the crash data and characteristics of the intersections, City staff believes that traffic signals just downstream of these intersections may be contributing to the RLR crashes. Removing one of the closely-spaced traffic signals was considered, but this is not an option at these locations. Yellow and all-red clearance intervals were examined to ensure they are appropriate.

The proposed project would replace traffic signal heads on 6 different traffic signal approaches in the areas where the City has experienced the highest amounts of RLR. The new heads would be programmable heads that are designed to avoid motorist confusion by optically limiting the field of view of the far-side signal lens. As a result, motorists approaching a red light at the upstream signal are less likely to be misdirected and run the red light during times when the downstream signal is green.

Project Costs

A quote for the programmable signal heads was received from a traffic signal equipment supplier. The cost breakdown is below.

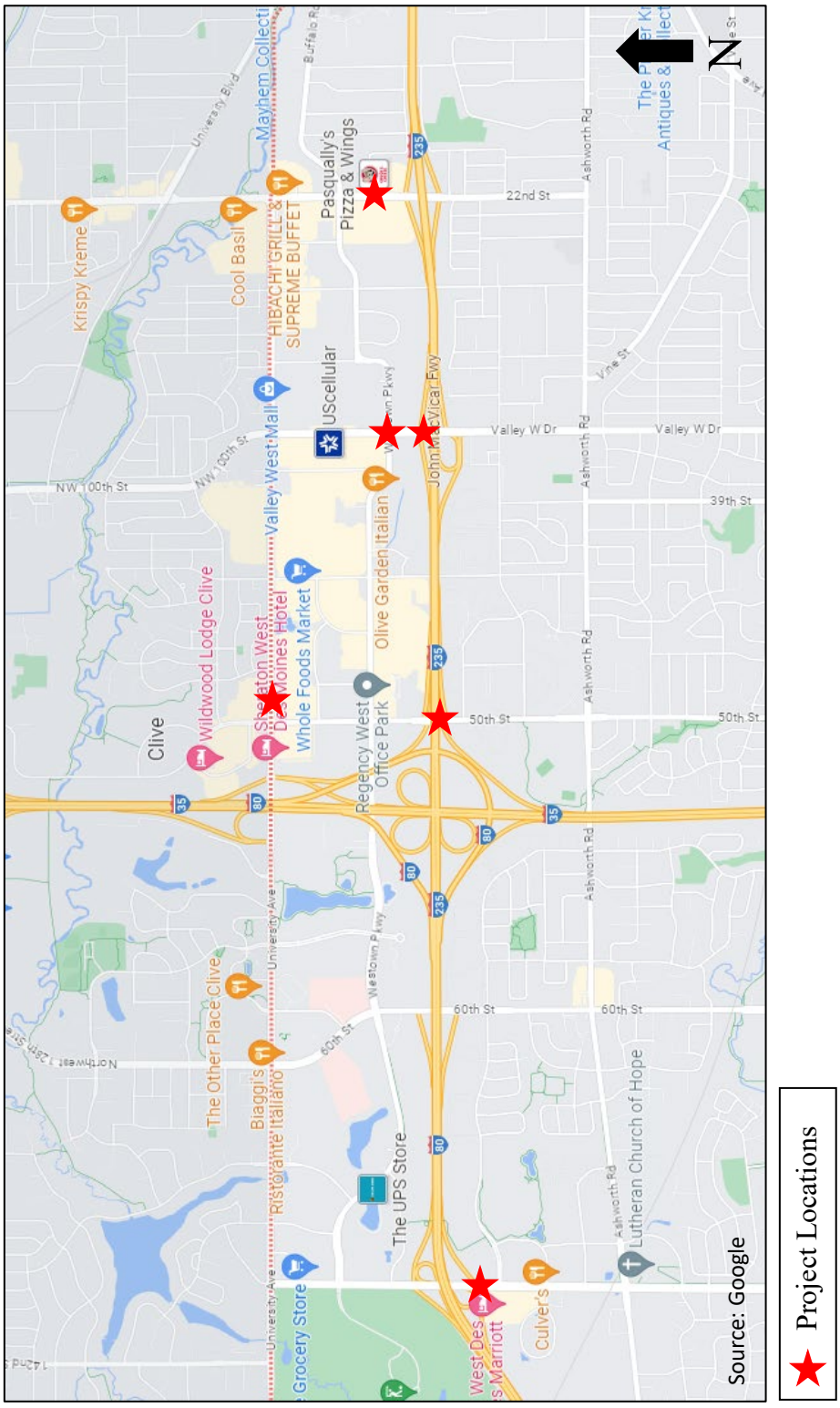
Safety-related equipment	
Item	**Amount**
3-section heads (20)	$ 63,000
4-section heads (3)	$ 17,000
5-section heads (2)	$ 10,000
Total	**$ 90,000**

If awarded, the requested TSIP funds would only be used to pay for the equipment costs associated with the project. Installation would be handled by City staff and not by using TSIP funds.

Schedule

- [x] July 2023 .....RLR Analysis and TSIP Application Preparation
- [x] August 2023 .....TSIP Application submitted
- [ ] January 2024 .....Iowa DOT Approval
- [ ] Spring 2024 .....TSIP Agreement
- [ ] Summer/Fall 2024.....Purchase of Equipment
- [ ] Winter 2024/Spring 2025 .....Receive Equipment, Begin Replacement
- [ ] Spring/Summer 2025 .....Completion

Overview Map



Pictures

Northbound on Jordan Creek Pkwy at Vista Drive, with Interstate 80 South Ramp just downstream

Southbound on 22nd Street at Westown Parkway, with Kingman Avenue just downstream

Eastbound on University Avenue at 50th Street, with 4900 University/Petsmart just downstream

Source: Google

Southbound on 50th Street at Interstate 235 North Ramp, with Interstate 235 South Ramp just downstream

Source: Google

Southbound on Valley West Drive at Westown Parkway, with Interstate 235 North Ramp just downstream

Source: Google

Northbound on Valley West Drive at Interstate 235 North Ramp, with Westown Parkway just downstream

Source: Google

Plan View

Jordan Creek Parkway
Project would replace the northbound signal heads at the Interstate 80 South Ramp traffic signal to address northbound RLR crashes at the upstream Vista Drive intersection.

- 5 three-section heads

22nd Street

Project would replace the southbound signal heads at the Kingman Avenue traffic signal to address southbound RLR crashes at the upstream Westown Parkway intersection.

- 2 three-section heads
- 1 four-section head

University Avenue

Project would replace the eastbound signal heads at the 4900 University/Petsmart traffic signal to address eastbound RLR crashes at the upstream 50th Street intersection.

- 3 three-section heads
- 1 four-section head

50th Street

Project would replace the southbound signal heads at the Interstate 235 South Ramp traffic signal to address southbound RLR crashes at the upstream Interstate 235 North Ramp intersection.

- 3 three-section heads
- 1 four-section head

Valley West Drive

Project would replace the northbound signal heads at the Westown Parkway traffic signal to address northbound RLR crashes at the upstream Interstate 235 North Ramp traffic signal.

- 4 three-section heads
- 1 five-section head

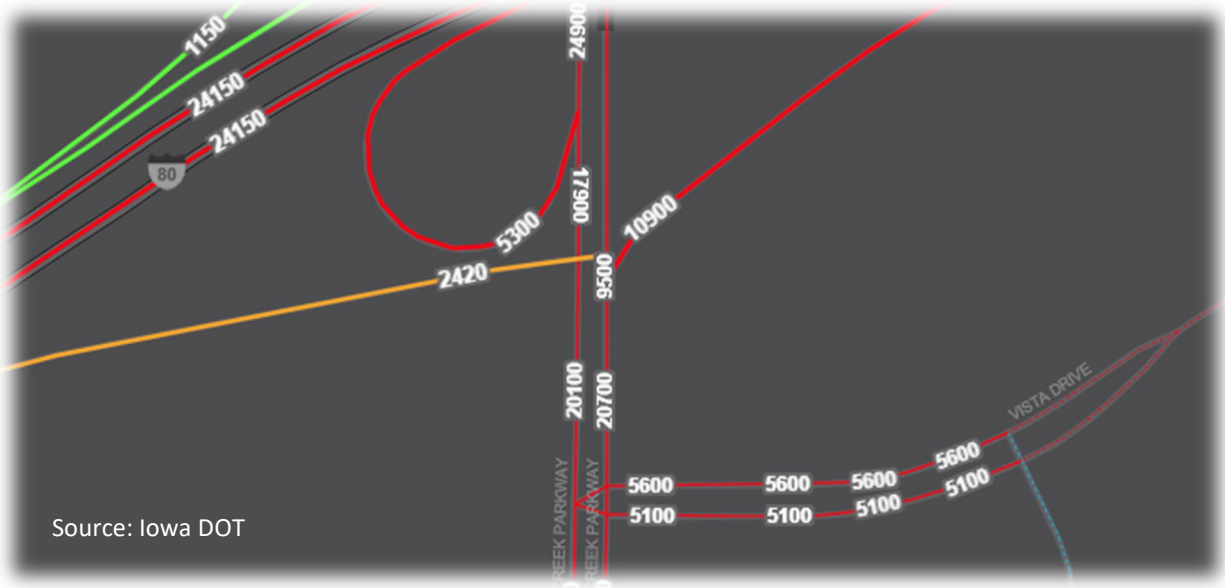
The project would also replace the southbound signal heads at the Interstate 235 North Ramp traffic signal to address southbound RLR crashes at the upstream Westown Parkway intersection.

- 3 three-section heads
- 1 five-section head

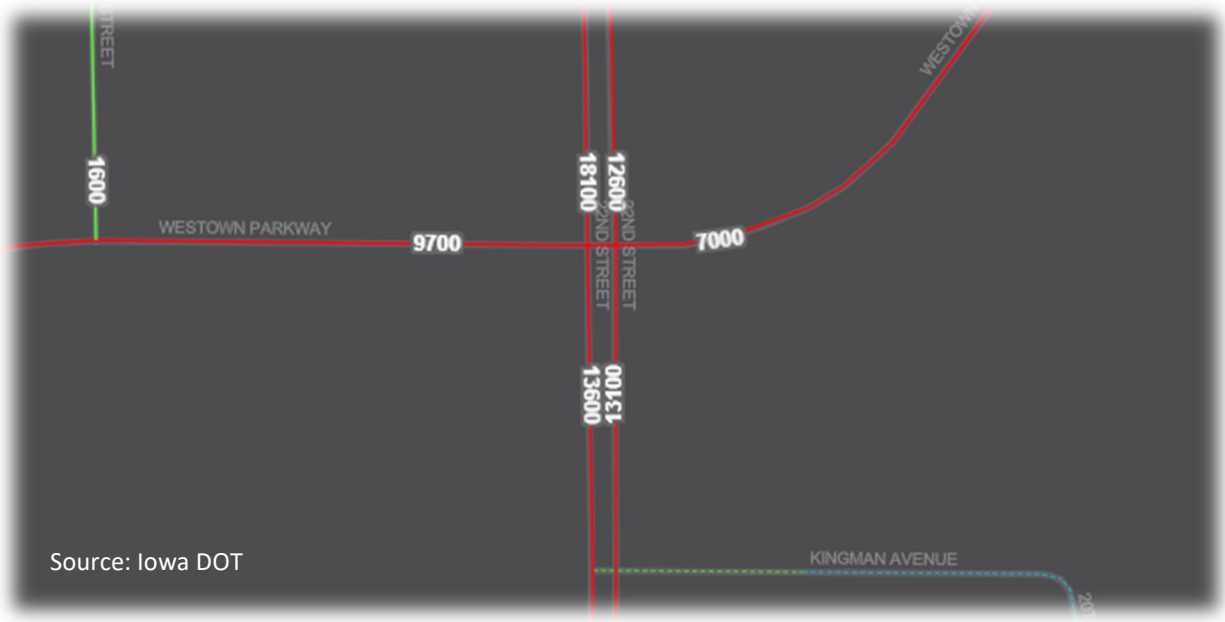
Traffic Volumes

Annual average daily traffic (AADT) volumes in the area of the proposed improvements are given below:

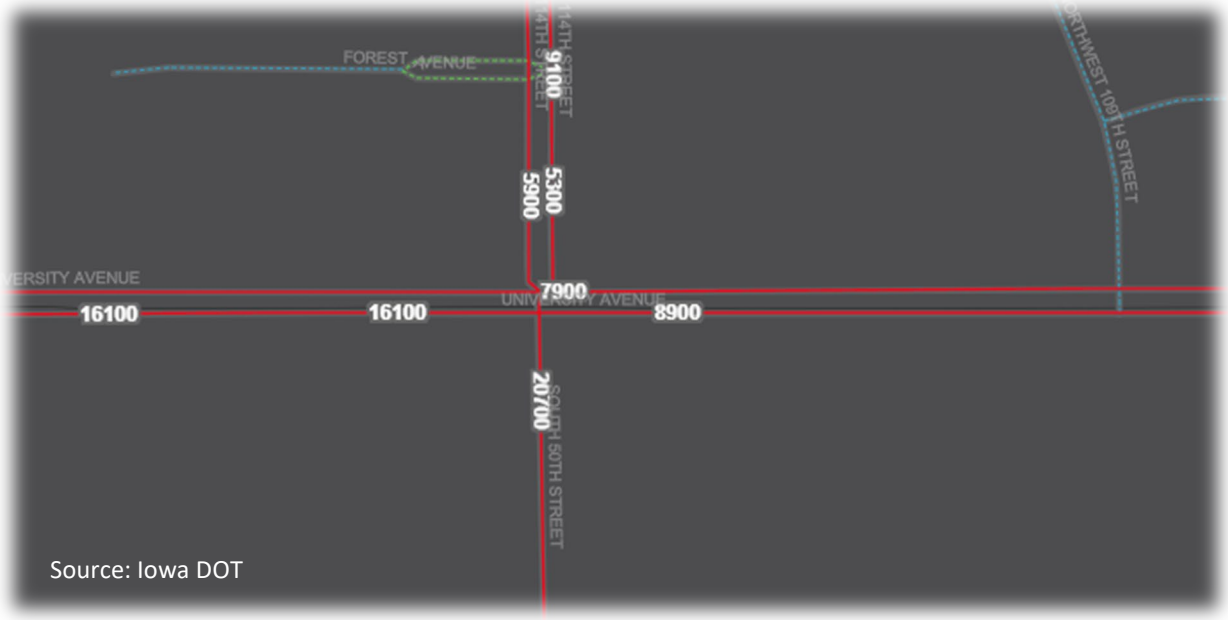
Jordan Creek Parkway, Interstate 80 South Ramp to Vista Drive



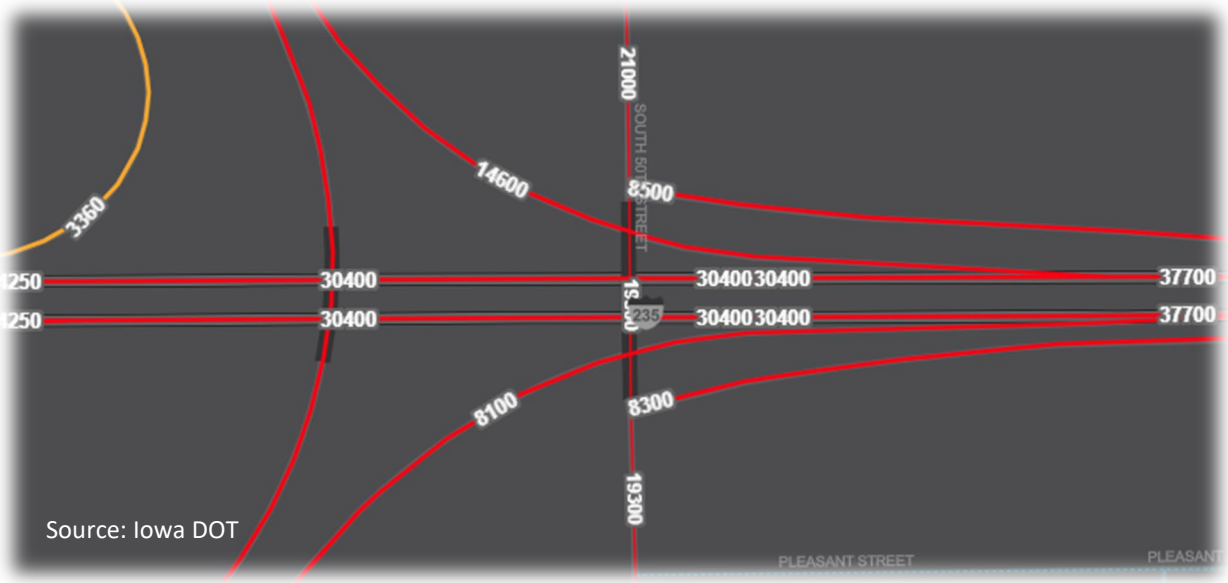
22nd Street, Westown Parkway to Kingman Avenue



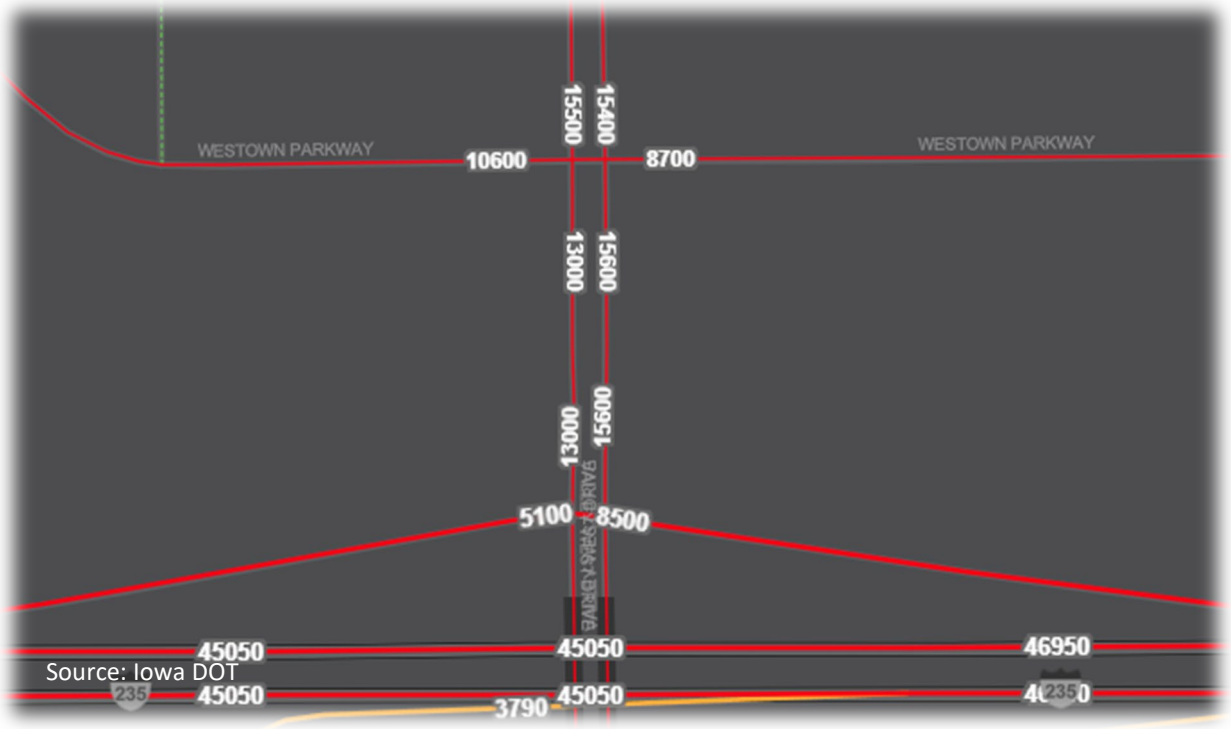
University Avenue, 4900 University/Petsmart to 50th Street



50th Street, Interstate 235 North Ramp to Interstate 235 South Ramp



Valley West Drive, Westown Parkway to Interstate 235 North Ramp



Source: Iowa DOT

Rev. 07/23

Application for TRAFFIC CONTROL DEVICE TSIP FUNDS

GENERAL INFORMATION **DATE:** 8-10-2023

Location / Title of Project: Rectangular Rapid Flashing Beacons at Four Uncontrolled School Crosswalks

Applicant: City of West Des Moines

Contact Person: Eric Petersen Title: Principal Traffic Engineer

Complete Mailing Address: 4200 Mills Civic Pkwy, PO Box 65320

West Des Moines, IA 50265

Phone: (515) 273-0656 (Area Code) E-Mail: Eric.Petersen@wdm.iowa.gov

If more than one highway authority is involved in this project, please indicate and fill in the information below (use additional sheets if necessary).

Co-Applicant(s) _____

Contact Person _____ Title _____

Complete Mailing Address _____

_____

Phone _____ (Area Code) E-Mail _____

PLEASE COMPLETE THE FOLLOWING PROJECT INFORMATION:

Funding Amount

Total Safety Cost	$	60,000
Total Project Cost	$	80,000
Safety Funds Requested	**$**	**60,000**

Additional Project Safety Documentation (when available):

- ☐ Project information sheet(s) or "Risk Score">50% from County/City's Local Road Safety Plan
- ☐ FHWA SS4A Safety Action Plan or similar comprehensive transportation safety plan
- ☐ Iowa DOT TEAP Study or similar analysis and concept
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Intersection ID (1234567890) or Segment ID (1234)	Intersection or Segment	PCR Level High	PCR Level Medium	PCR-All value	PCR-Severe value
		☐	☐		
		☐	☐		
		☐	☐		

Rev. 07/23

APPLICATION CERTIFICATION FOR PUBLIC AGENCY

To the best of my knowledge and belief, all information included in this application is true and accurate, including the commitment of all physical and financial resources. This application has been duly authorized by the participating public agency(ies). I understand the attached resolution(s), where applicable, binds the participating public agency(ies) to assume responsibility for any additional funds, if required, to complete the project. In addition, the participating public agency(ies) agrees to maintain any new or improved public streets or roadways for a minimum of five years.

I understand that, although this information is sufficient to secure a commitment of funds, a firm contract between the applicant and the Department of Transportation is required prior to the authorization of funds.

Representing the City of West Des Moines

Signed: _____ 8.10.2023
Signature Date Signed

Brian J Hemesath
Printed Name

Attest: _____ 8-10-2023
Signature Date Signed

Eric R Petersen
Printed Name

CERTIFICATION OF GRANT APPLICATION
FOR TRAFFIC SIGNAL IMPROVEMENT PROGRAM (TSIP) FUNDS

The City of West Des Moines strongly promotes the reduction of traffic-related incidents and the safe mobility for all users of the transportation system.

Authorization is given to apply for Iowa Department of Transportation Traffic Safety Improvement Program (TSIP) Funds for the purchase of Rectangular Rapid Flashing Beacons (RRFBs) to enhance pedestrian safety at 4 existing school crosswalks around West Des Moines.

If the project is funded, the City of West Des Moines will adequately maintain the completed project for its intended public use following project completion.

Tom Hadden, City Manager

Project Narrative

The City of West Des Moines believes in the importance of having safe routes for kids to walk/bike to school. Recently, City staff collected data at existing school crosswalks throughout the City. This data was then compared to guidance on when certain treatments should be considered, such as crossing guards, pavement markings, beacons, etc.

Based on the data that was collected, the City is proposing to install Rectangular Rapid Flashing Beacons (RRFBs) at 4 existing uncontrolled school crosswalks where there are significant volumes of students crossing before and after school. Currently, these 4 crosswalks have pavement markings and warning signs at the crosswalk facing both directions, and advance warning signs upstream of the crosswalk in both directions. The proposed project would upgrade the warning signs to a combination of warning signs and RRFBs.

The City has installed RRFBs in the past at other locations, and based on our local experience, they have been very effective at getting the attention of drivers and enhancing safety for pedestrians/bicyclists. The safety benefits and driver compliance rates have also been shown to be positive in safety studies around the country.

The 4 locations where RRFBs are proposed to be installed are:

1. 56th Street crosswalk near Highland Court, serving Westridge Elementary
2. Western Hills Drive crosswalk near 40th Street, serving Western Hills Elementary
3. Buffalo Road crosswalk near Dowling Catholic Entrance, serving Dowling Catholic High School
4. Woodland Avenue crosswalk near Saint Francis Northeast Entrance, serving Saint Francis Elementary/Junior High School

These locations were selected based on their configuration (uncontrolled "mid-block" locations), the number of students crossing during the school's arrival/dismissal periods, the amount of vehicular traffic on the street, speed limit (25 mph on streets), and other characteristics at the school crossings. All existing traffic control devices, as well as the proposed traffic control devices, meet requirements of the Federal Highway Administration's *Manual on Uniform Traffic Control Devices (MUTCD).*

Students using a recently installed RRFB on their way to school in West Des Moines

Project Costs

A quote for an RRFB was received from a traffic signal equipment supplier. The cost breakdown is below.

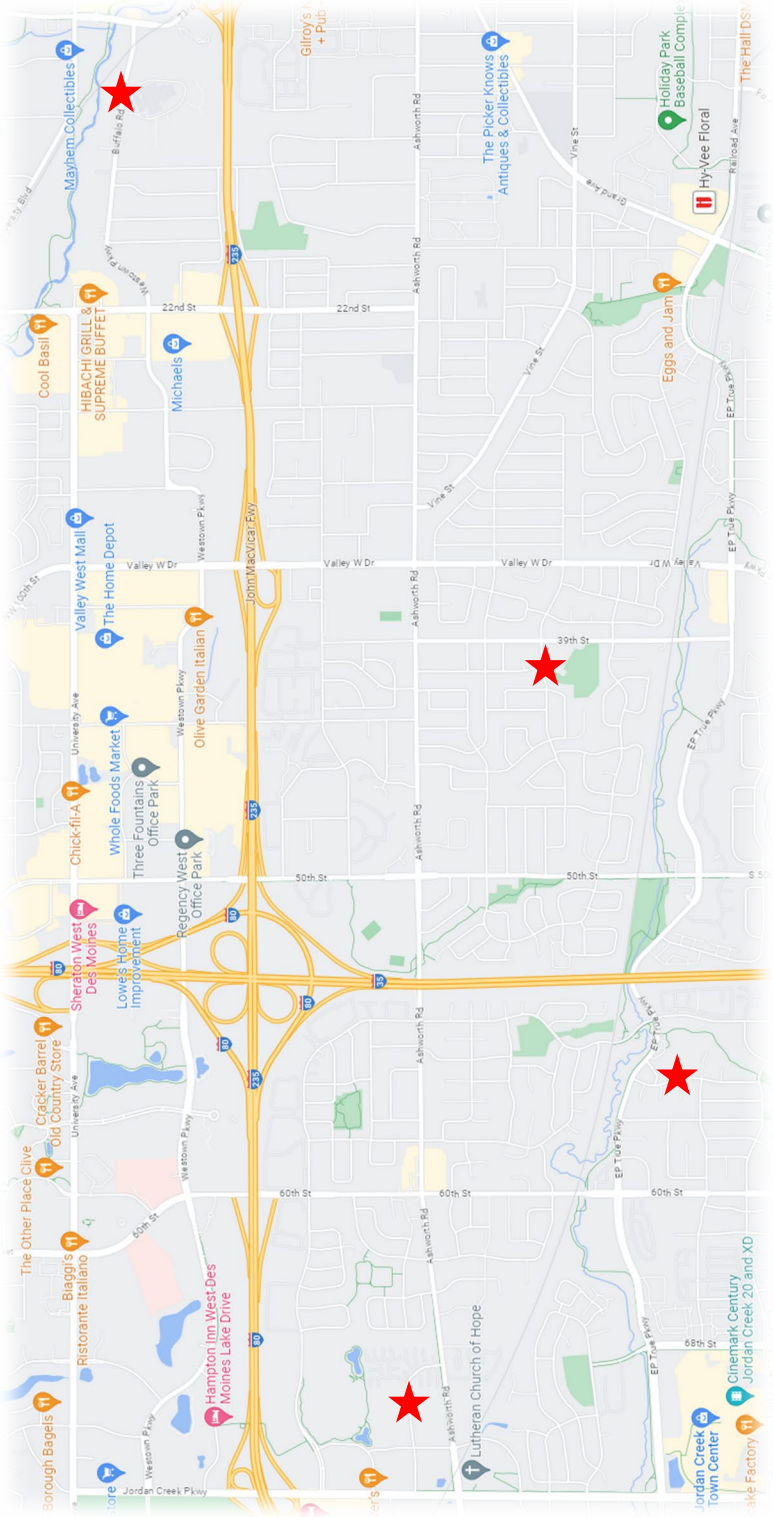
Anticipated Funding Sources			
Source	**Amount**		**Percent**
TSIP Funds (for purchase of RRFB equipment at 4 locations)	$	60,000	75%
Local Funds (cost of installation at 4 locations)	$	20,000	25%
Total	**$**	**80,000**	**100%**

If awarded, the requested TSIP funds would only be used to pay for the equipment costs associated with the project. Installation would be paid with local City funds.

Schedule

- [x] July 2023 .....Data Collection and Analysis of School Crosswalks
- [x] August 2023 .....TSIP Application submitted
- [ ] January 2024 .....Iowa DOT Approval
- [ ] Spring 2024 .....TSIP Agreement
- [ ] Summer 2024.....Purchase of Equipment
- [ ] Winter 2024 .....Receive Equipment, Begin Installations
- [ ] Spring/Summer 2025 .....Completion

Overview Map



Source: Google

★ Project Locations

Pictures

56th Street crosswalk near Highland Court, serving Westridge Elementary

Source: Google

Western Hills Drive crosswalk near 40th Street, serving Western Hills Elementary

Source: Google

Buffalo Road crosswalk near Dowling Catholic Entrance, serving Dowling Catholic High School

Source: Google

Woodland Avenue crosswalk near Saint Francis Northeast Entrance, serving Saint Francis Elementary/Junior High School

Source: Google

Plan View

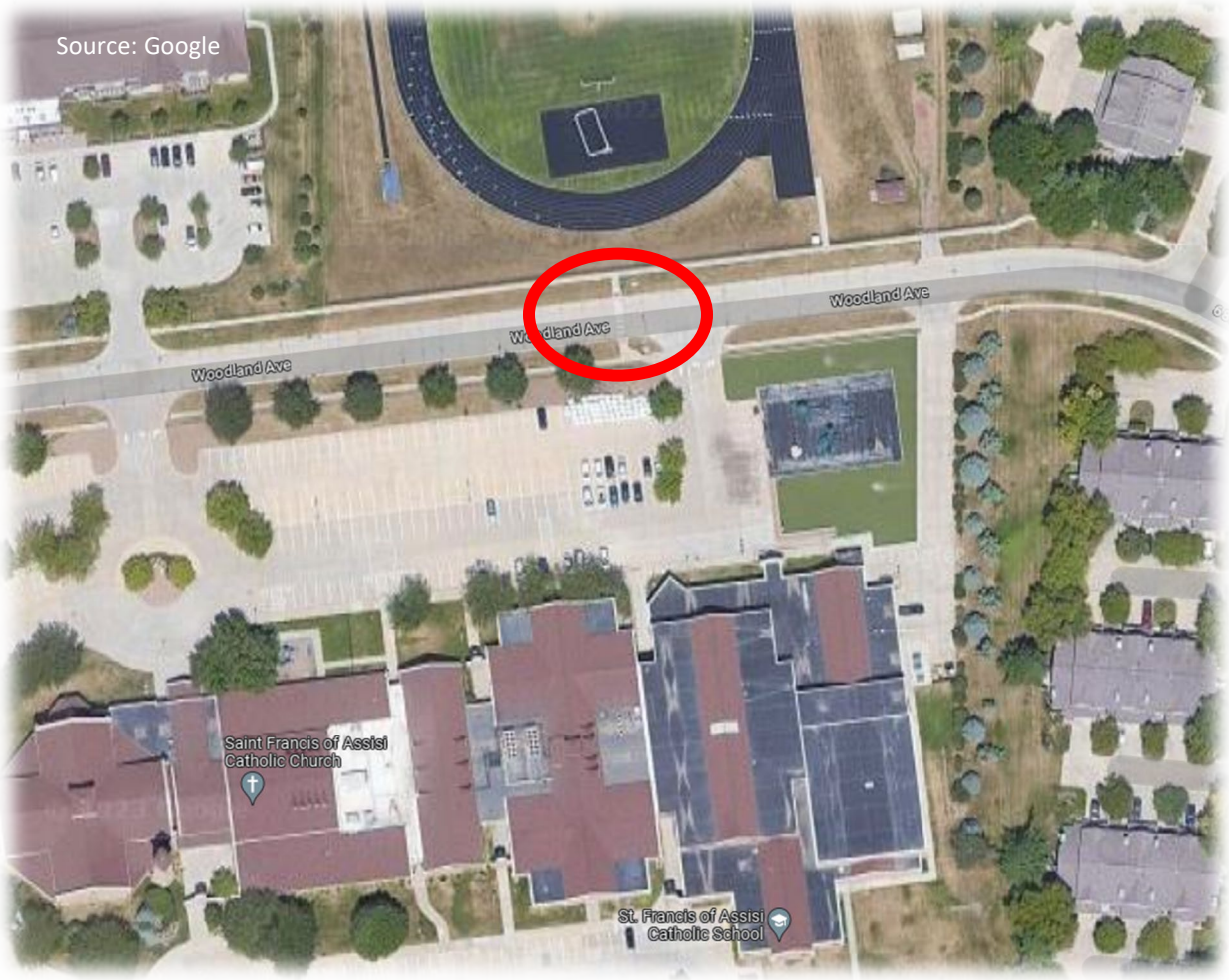
56th Street crosswalk near Highland Court, serving Westridge Elementary

Western Hills Drive crosswalk near 40th Street, serving Western Hills Elementary

Buffalo Road crosswalk near Dowling Catholic Entrance, serving Dowling Catholic High School

Source: Google

Woodland Avenue crosswalk near Saint Francis Northeast Entrance, serving Saint Francis Elementary/Junior High School



Traffic Volumes

Annual average daily traffic (AADT) volumes in the area of the proposed improvements are given below:

- 56th Street at Westridge Elementary
  - Iowa DOT estimate of less than 1,000 AADT
- Western Hills Drive at Western Hills Elementary
  - Iowa DOT estimate of less than 1,000 AADT
- Buffalo Road at Dowling Catholic High School
  - Iowa DOT estimate of 5,000+ AADT
  - Traffic counts collected by West Des Moines in June 2023 using radar equipment collected about 5,150 vehicles per day
- Woodland Avenue at Saint Francis Elementary/Junior High School
  - Iowa DOT estimate of less than 1,000 AADT

Application for TRAFFIC CONTROL DEVICE
TSIP FUNDS

GENERAL INFORMATION **DATE:** _____

Location / Title of Project Clay County / Temporary Traffic Signals

Applicant Clay County Secondary Roads

Contact Person William Rabenberg Title County Engineer

Complete Mailing Address Clay County Engineer Administration Building, 300 West 4th,

Street Suite 5, Spencer, Iowa 51301

Phone (712) 262-2825 (Area Code) E-Mail wrabenberg@claycounty.iowa.gov

If more than one highway authority is involved in this project, please indicate and fill in the information below (use additional sheets if necessary).

Co-Applicant(s) _____

Contact Person _____ Title _____

Complete Mailing Address _____

_____

Phone _____ (Area Code) E-Mail _____

PLEASE COMPLETE THE FOLLOWING PROJECT INFORMATION

Funding Amount

Total Safety Cost	$	68,750.00
Total Project Cost	$	68,750.00
Safety Funds Requested	$	68,750.00

Does this project appear on a Safety Improvement Candidate List or is there a safety study recommendation for this project?

[ ]Yes – Explain _____

[X]No

APPLICATION CERTIFICATION FOR PUBLIC AGENCY

To the best of my knowledge and belief, all information included in this application is true and accurate, including the commitment of all physical and financial resources. This application has been duly authorized by the participating public agency(ies). I understand the attached resolution(s), where applicable, binds the participating public agency(ies) to assume responsibility for any additional funds, if required, to complete the project. In addition, the participating public agency(ies) agrees to maintain any new or improved public streets or roadways for a minimum of five years.

I understand that, although this information is sufficient to secure a commitment of funds, a firm contract between the applicant and the Department of Transportation is required prior to the authorization of funds.

Representing the Clay County Engineer's Office

Signed: William D. Rabenberg 6/27/23
Signature Date Signed

William D. Rabenberg
Printed Name (County Engineer)

Attes: Randy Swanson 6-27-23
Signature Date Signed

Randy Swanson, Clay County Board Chair
Printed Name (Chair, Clay County Supervisor)

RESOLUTION NO. #2023-20
Transport Safety Improvement Program Grant Application
Sign Improvement

WHEREAS the Iowa Department of Transportation Traffic Safety Improvement Program operates under the rules of Iowa Administrative Code 761-Ch. 164; and

WHEREAS said program allows for the distribution of traffic safety funds to cities, counties, and the Iowa DOT for roadway safety improvements, research, studies, or public information initiatives; and

WHEREAS the Clay County Engineer has determined that materials funded by this grant would improve the roadway safety in Clay County.

THEREFORE BE IT RESOLVED BY THE BOARD OF SUPERVISORS OF CLAY COUNTY, IOWA on this 27th day of June 2023 that this County does hereby support the attached application for Traffic Safety Improvement Program funding.

AYES: Batschelet, Hamrick, Anderson, Swanson
NAYES: None.
ABSTENTIONS: None.

ATTEST:

Ann Baschke, Clay County Auditor

Randy Swanson, Chairperson
Clay County Board of Supervisors

Narrative

The Clay County Secondary Roads Department is applying for funding from the Iowa DOT Traffic Safety Improvement Program to purchase a set of temporary traffic signals. While the Clay County Secondary Roads Department partakes in multiple projects yearly where these could be useful, it does not possess any device with such capabilities. Their ability to replace traffic flaggers would greatly benefit the safety of all persons involved in necessary one lane road closures.

Clay County participates in a variety of projects to maintain over 970 miles of total roads, 229 of which are paved, and 137 bridges each year. The county typically does paving and bridge replacements each year, using flaggers, pilot cars, detour routes, and road closures, all of which contain inherent safety risks. The use of flaggers involves two county road crew members working in close proximity to oncoming vehicles and manually signaling when it is and is not safe for cars on either side of the project to pass through. The procedure requires perpetual communication and situational awareness by these workers to ensure safety for themselves and the traveling public.

Replacing human flaggers with temporary signals will offer a significant safety upgrade by providing an automated way of traffic redirection. Clay County intends on purchasing a pair of extendable OMJC Heavy Duty signal lights along with two knockdown board adaptors, two microwave vehicle detectors, and a manual remote. These additional features will allow adaptive integration into an existing traffic light system in the case an existing light falls over, maximum traffic directing efficiency, and the ability to override the programmed light phasing during complex traffic scenarios. This will increase in both driver and worker safety by:

- Eliminating the possibility of a human/traffic interaction involving a flagger
- Eliminating flagger and pilot car usage
- Allowing the road to be left open to one lane traffic overnight

The variety of benefits that these devices offer during roadwork projects, combined with the significant quantity of roadwork projects Clay County engages in, makes a pair of temporary traffic signals a worthwhile investment in the County's roadway safety. The cost will translate into frequent and effective use allowing road, culvert, and bridge construction projects to be completed with enhanced traffic safety and efficiency throughout the county.The ability to obtain these MUTCD compliant devices will provide many years of usefulness and safety benefits to the workers and traveling public of Clay County. The Clay County Secondary Roads Department greatly appreciates the TSIP's consideration of this grant application.

[C]

Itemized Breakdown of Cost

OMJCSignal
PO Box 1594
Waterloo, IA 50704
403 Chestnut St.
Waterloo, IA 50703
800.776.5999
Fax: 319.236.1554
Email: sales@omjcsignal.com
omjcsignal.com

Quotation

Quote Number
8791

Quote Date
May 22, 2023

Page:
1

Quoted to:
ATTN: DREW THOMPSON
CLAYCOUNTYIA
CLAY COUNTY ADMIN BUILDING
300 W 4TH ST STE #5
SPENCER, IA 51301

PH: 712.260.2905
FAX:

SHIP TO:

CLAYCOUNTYIA
CLAY COUNTY ADMIN BUILDING
300 W 4TH ST STE #5
SPENCER, IA 51301

Customer ID	Good Thru	Payment Terms	Sales Rep Name
CLAY COUNTY IOWA	6/21/23	Net 30 Days	DAVID T. KNAPP

Quantity	Item	Description	Unit Price	Extension
1.00	HDPTS	ONE PAIR OF POP-UP HEAVY DUTY TRAILERS (ONE MASTER, ONE SECONDARY) W/ WIRELESS TRAFFIC CONTROL AND SOLAR POWER. .	58,750.00	58,750.00
2.00	TC26-B-OMJC	VEHICLE DETECTOR	1,400.00	2,800.00
1.00	FALCON MAX_OMJC03HF	5 BUTTON LONG RANGE YELLOW JAC	4,200.00	4,200.00
2.00	KNOCKDOWNBOARD	KNOCKDOWN RELAY BOARDS TO UTILIZE SIGNALS AS TEMPORARY REPLACEMENTS FOR A SIGNAL IN A PERMANENT INTERSECTION **DELIVERY AND On-site training included at no additional cost if done on the same date	1,500.00	3,000.00

Freight & handling are in addition to the prices quoted above unless otherwise specified. All parts, materials and components are new unless otherwise specifi OMJC has been in business since July of 1985 to serve you.

Subtota	68,750.00
Sales Ta	
Freight	
Tota	68,750.00

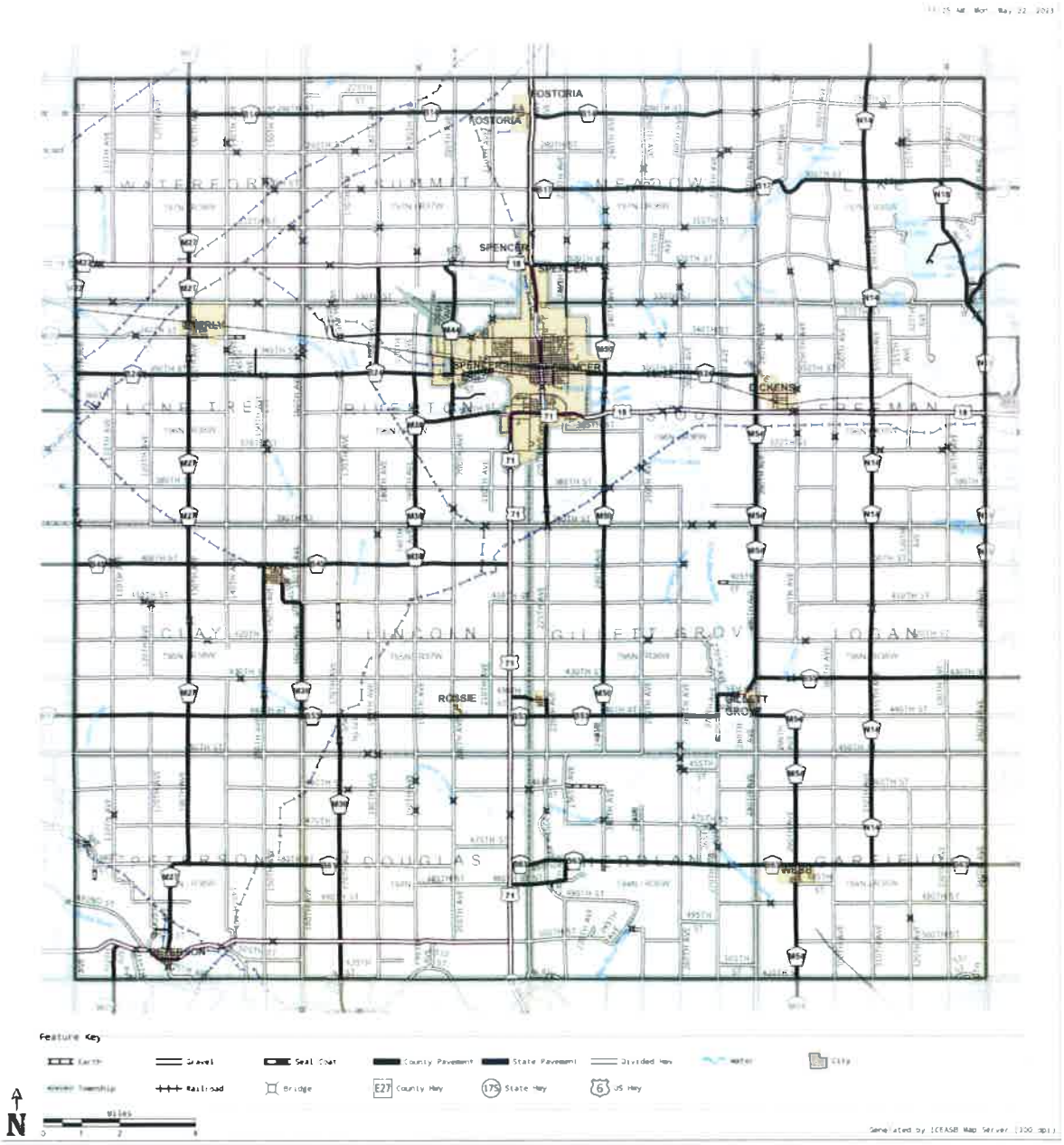
[D]

Time Schedule

- TSIP Application Due: August 15, 2023
- TSIP Approval Notice: Mid-January 2024
- TSIP Funding Available: July 1, 2024
- Purchase Temporary Signals: July 2024
- Use of Temporary Signals: Shortly after receiving them

[E]

Map



Colored Pictures

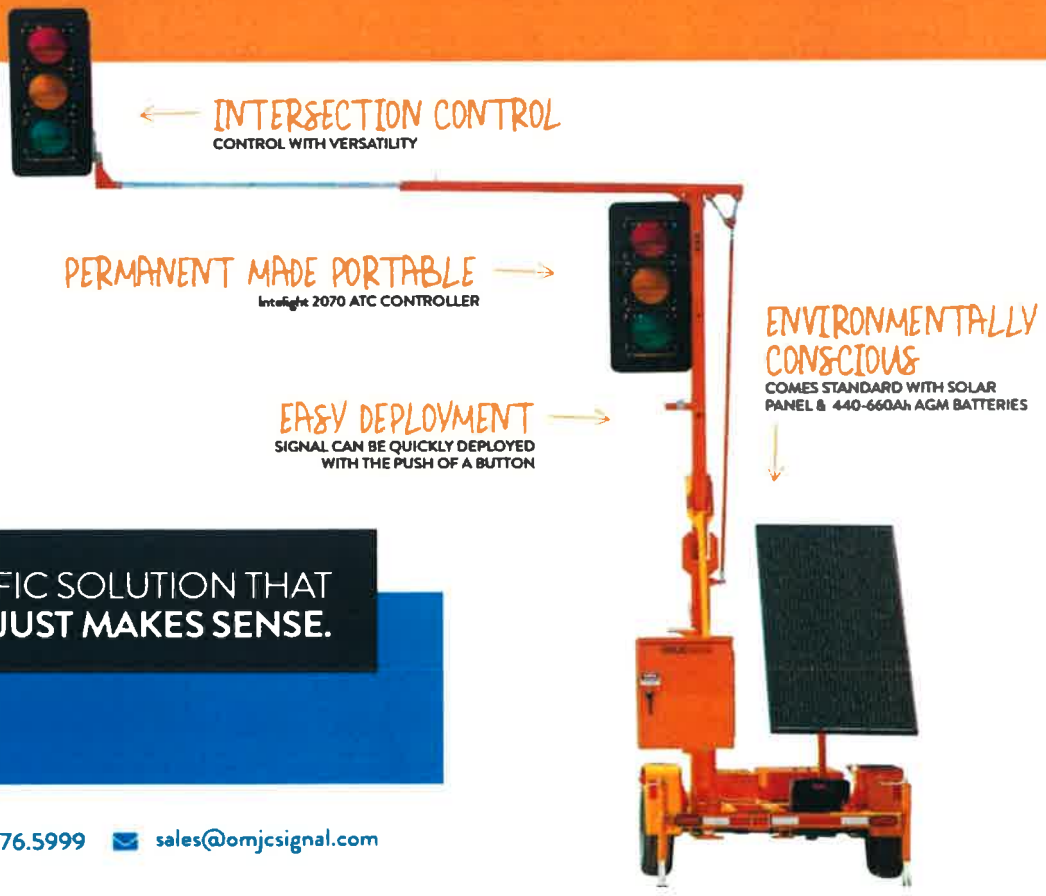
OMJC INTEGRITY AT THE CORE

Pop-Up HD

INTERSECTION CAPABLE

TWO LANE TRAFFIC CONTROL

The Pop-Up HD is capable of signalizing up to two lanes of traffic. The 15' arm is engineered to handle a 5 section left turn signal in the overhead position. With the HD, two 12" ITE approved signals can be quickly deployed into positions mandated by the MUTCD at the mere push of a button. Because the footprint is only 6' wide (the narrowest in the industry), it can fit almost anywhere. The HD features the Intelight 2070 ATC Controller running MAXTIME software. The custom radio system allows communication between OMJC Pop-Up units along with complex phasing ability. The HD comes standard with a 385 watt solar panel (adjustable on 2 axes) and 440-660Ah of AGM batteries.



A TRAFFIC SOLUTION THAT **JUST MAKES SENSE.**

1.800.776.5999 sales@omjcsignal.com

Pop-Up HD

INTERSECTION CAPABLE

Pop-Up HD • STANDARD FEATURES

DEPLOYMENT

Vertical | Hydraulic with remote pendant

Horizontal | Manual slide out

ARM EXTENSION

Adjusts to 15'

SIGNAL HEADS

3 section overhead

3 section side of mast

12" RYG LED's, ITE compliant

180° rotation

TRAFFIC CONTROL EQUIPMENT

Intelight 2070 ATC with MAXTIME software

Actuated 8 phase, dual ring, with pedestrian movements

Encrypted wireless connection between master and secondaries

EDI real time conflict monitor

CHARGING SOURCE

DC | MPPT solar charge controller

AC | 120V plug-in charger

SPECIFICATIONS

CHASSIS LENGTH	112.0" (removable hitch adds 56" for 168" total)
CHASSIS WIDTH	72.0" - narrowest in industry
TRAVEL HEIGHT	114.0" w/ solar
STANDARD WEIGHT	3,400lbs.
CLEARANCE (UNDER ARM)	17' (meets MUTCD requirements)
BATTERIES	440-660 Ah of AGM batteries, no-spill, no-maintenance
SOLAR	(1) - 385 watt solar panel, adjustable on 2 axes

Pop-Up HD • ADDITIONAL OPTIONS

DETECTION

- ☐ Microwave
- ☐ Video
- ☐ Loop

KNOCKDOWN AVAILABILITY (EMERGENCY POLE REPLACEMENT)

- ☐ Wireless Knockdown Kit (AC to DC from existing infrastructure)
- ☐ Wired Knockdown Kit (AC to DC from existing infrastructure)

SIGNAL CONFIGURATION

- ☐ 1 additional overhead signal (custom LED configuration available)
- ☐ 4 section - with all arrows or custom combination
- ☐ 5 section doghouse - with left turn arrows or custom combination

PREEMPTION

- ☐ Audible
- ☐ Strobe
- ☐ GPS

COORDINATION

- ☐ GPS time based

REMOTE MANAGEMENT & ALERTING

- ☐ Cellular wireless router (Verizon, AT&T, or Sprint Certified Device)

WIRELESS MANUAL CONTROL

- ☐ Push button control with long range antenna (pilot car remote)

ADDITIONAL ADD-ONS

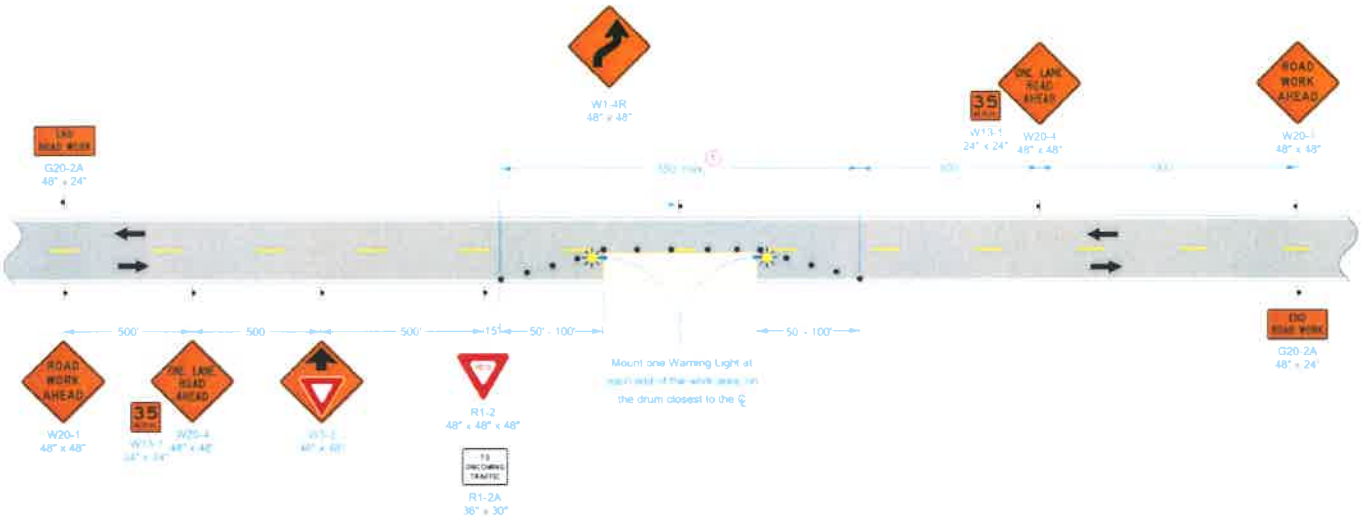
- ☐ Pedestrian signalization
- ☐ Auto-start generator for on-board ancillary power
- ☐ Work zone lighting
- ☐ Countdown timer

[G]

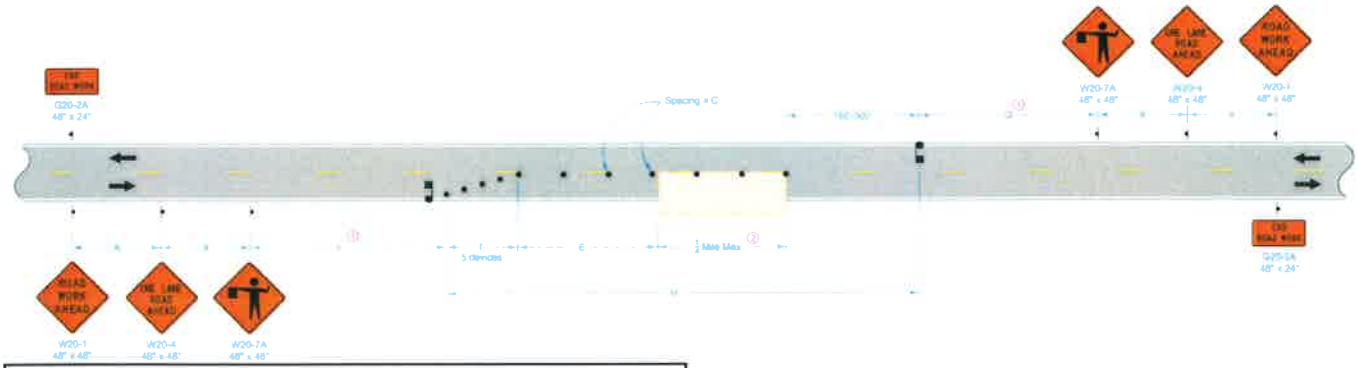
Plan View: existing

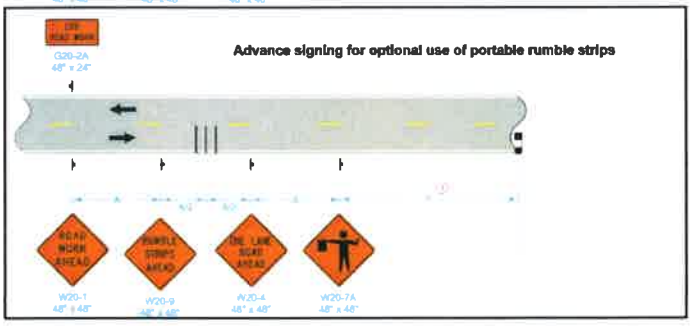
Application of Temporary Traffic Signals will alter the design, mechanism, and driver experience of one lane road closures from the following current layouts.

Lane Closure on Low Volume Roadway:

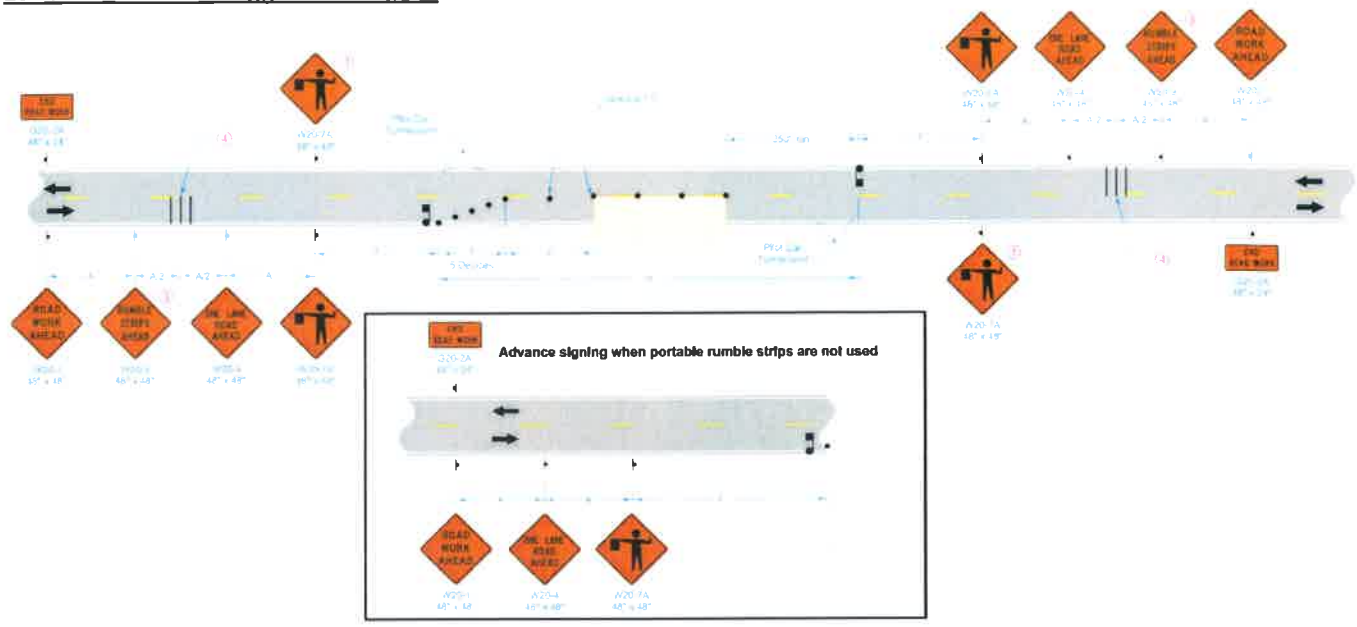


Lane Closure with Flaggers:





Lane Closure with Flaggers & Pilot Car:

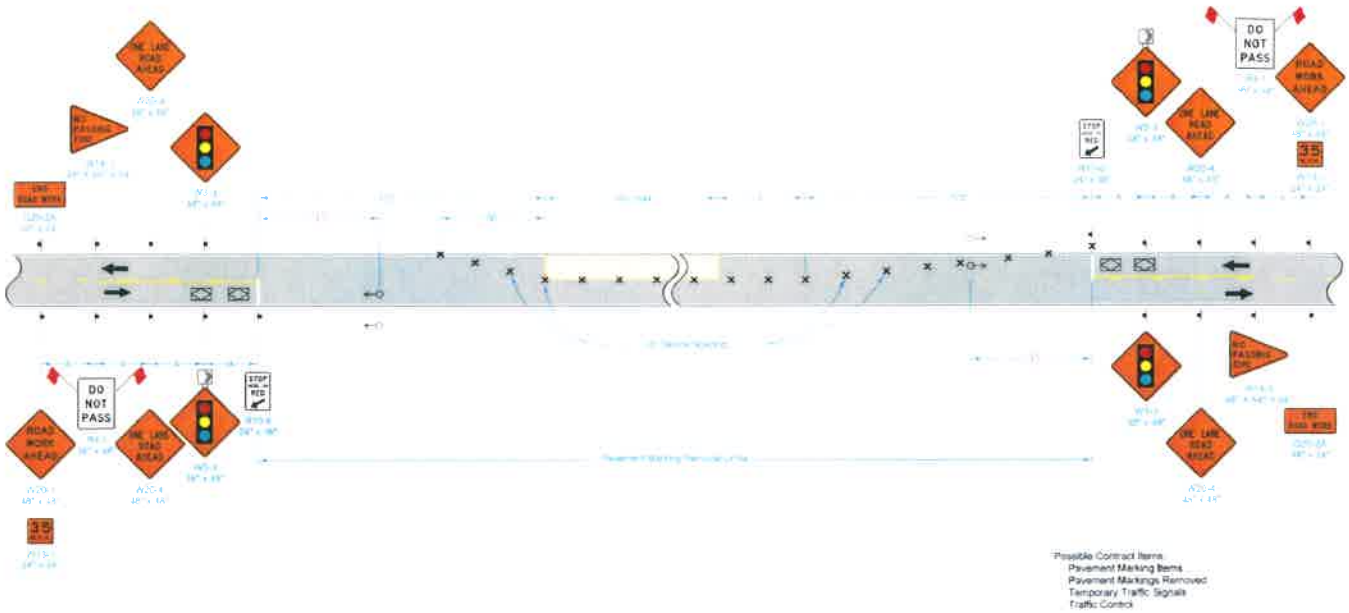


Advance signing when portable rumble strips are not used

Plan View: proposed

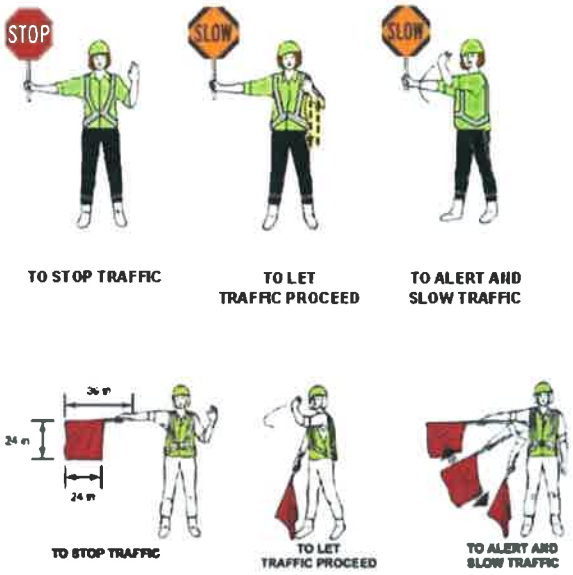
Below contains the proposed temporary traffic control signal setup to replace the existing setups above for one lane road closures.

Lane Closure with Temporary Traffic Signals:

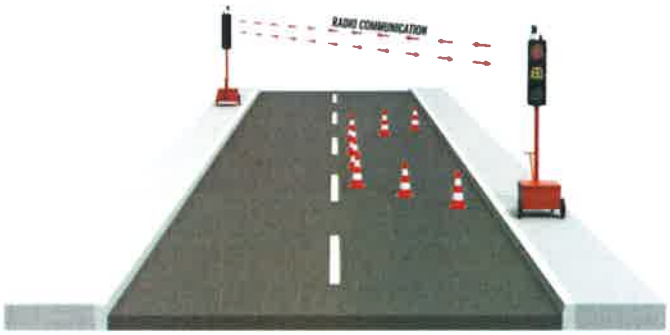


Setup Comparison

Existing Conditions:



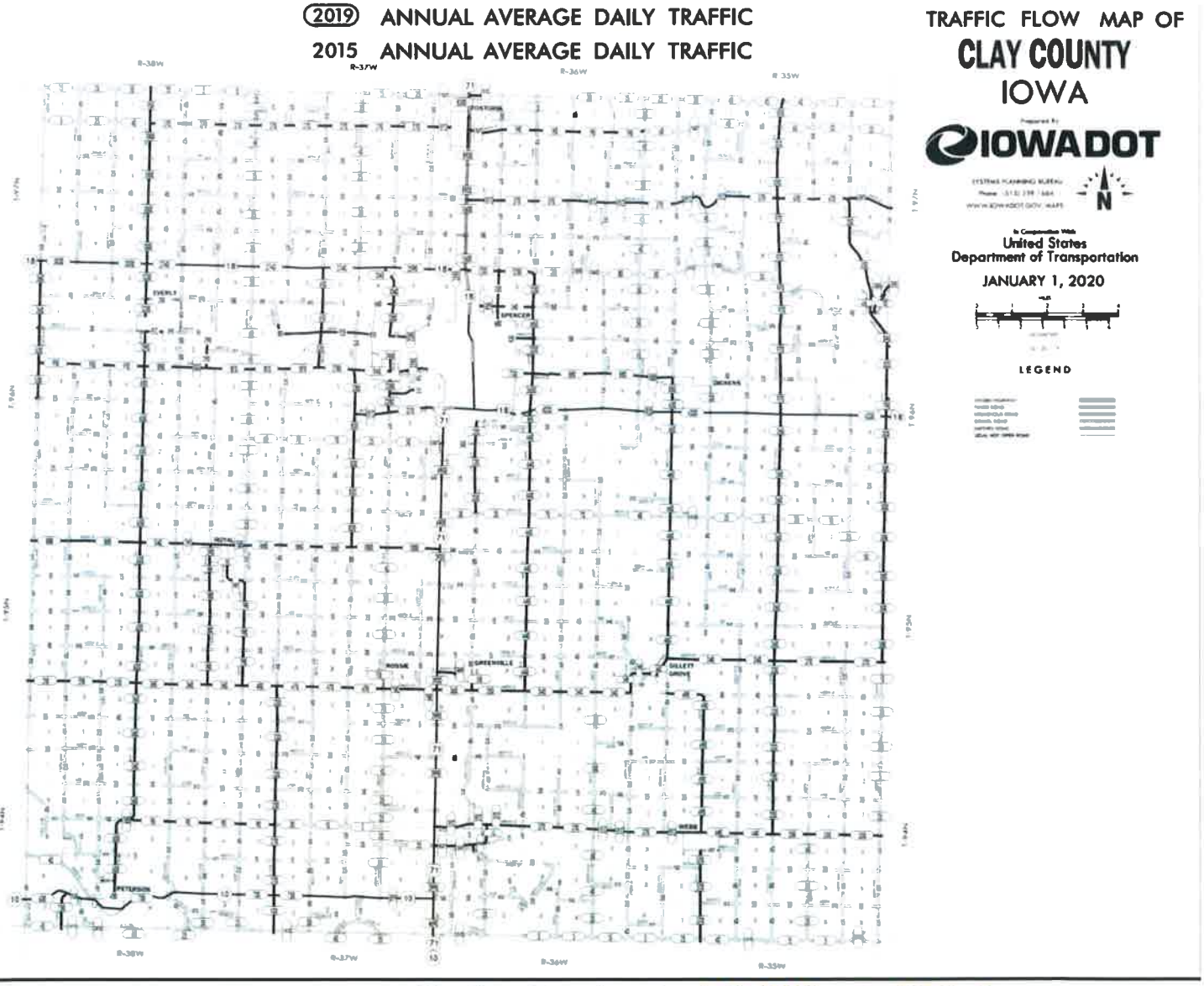
Proposed Plan Conditions:



Note: Implementation would not require any access or ROW complications

[H]

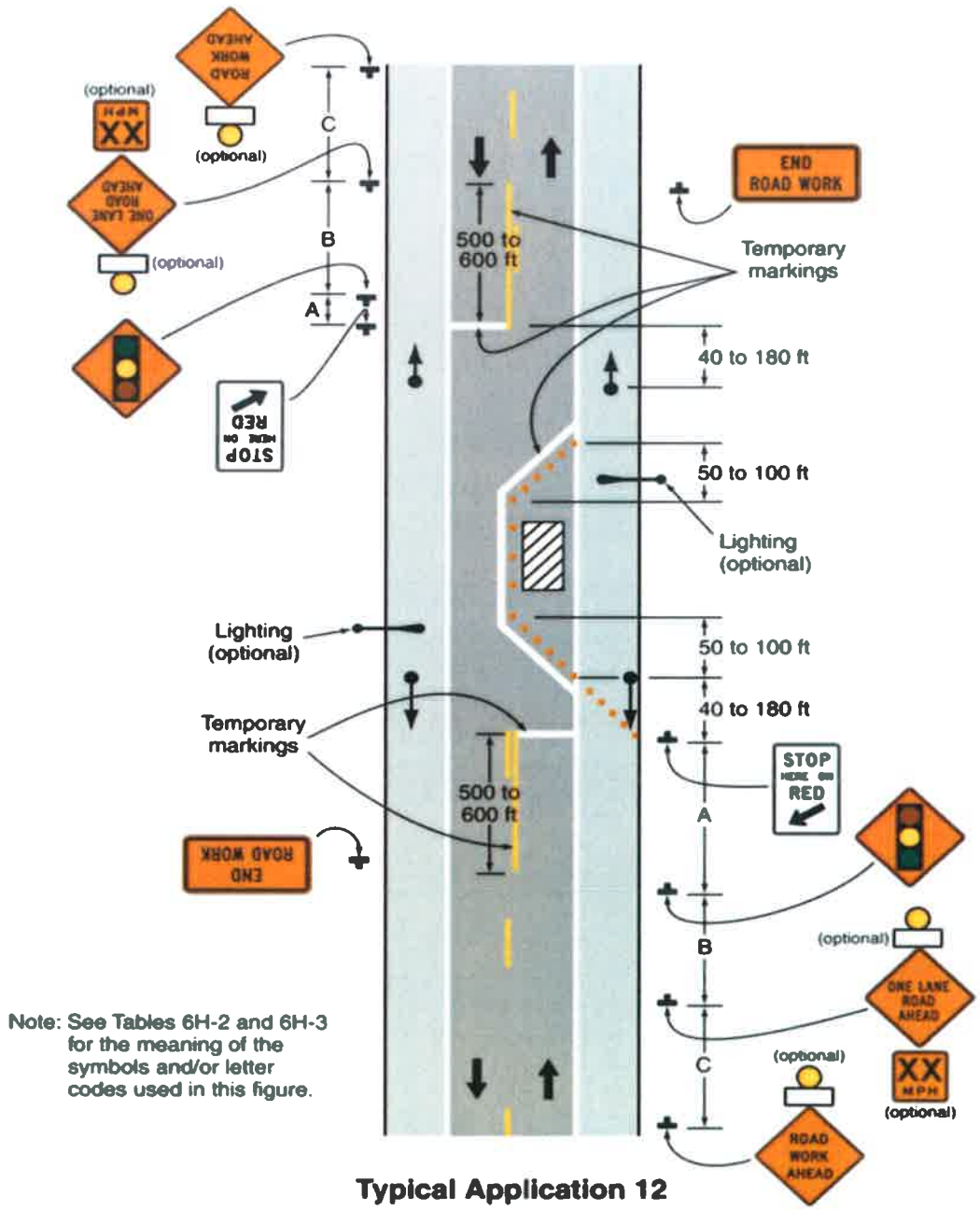
Traffic Volumes



Reference to higher quality map: https://iowadot.gov/maps/msp/traffic/2019/counties/CLAY.pdf

Signal Information

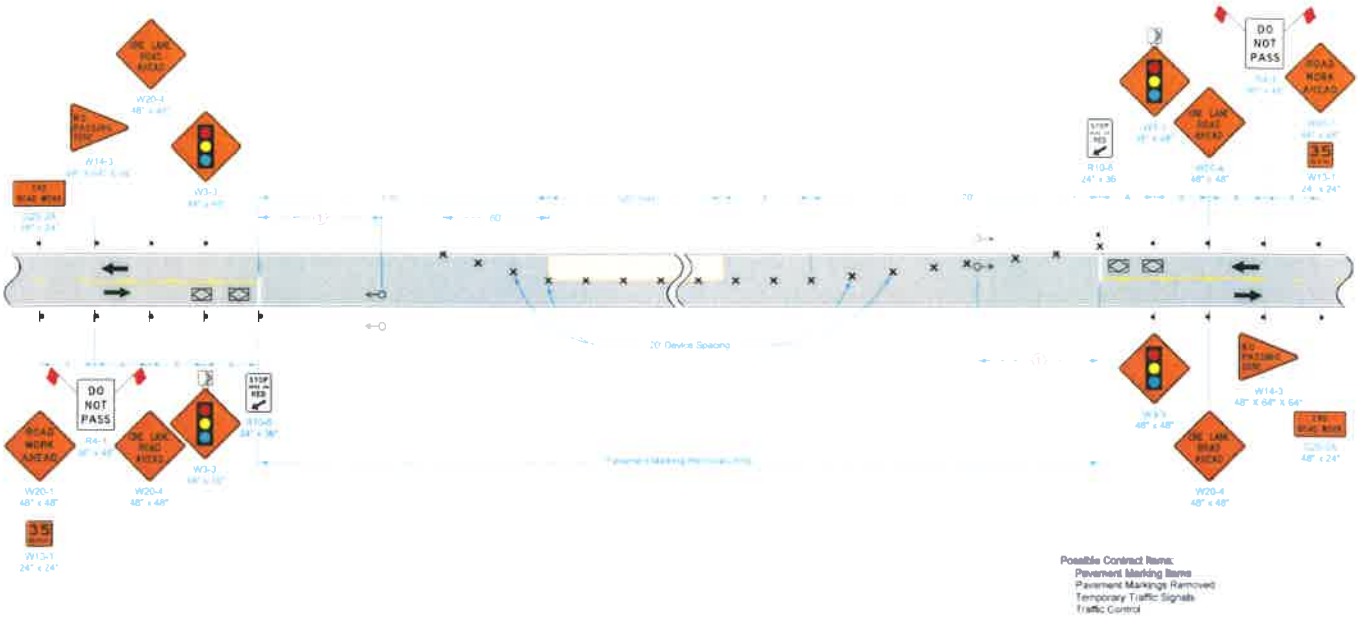
MUTCD Layout Example:



Note: See Tables 6H-2 and 6H-3 for the meaning of the symbols and/or letter codes used in this figure.

Typical Application 12

Iowa DOT Layout Example:



Notes:

- These light signals are programmed with phase and timing software
- Usable with or without microwave traffic sensors on each signal, allowing for increased efficiency
- Each detector would sit on the extended overhanging arm and detects oncoming vehicles

Application for TRAFFIC CONTROL DEVICE
TSIP FUNDS

GENERAL INFORMATION **DATE:** _____

Location / Title of Project Clay County / Sign Improvement

Applicant Clay County Secondary Roads

Contact Person William Rabenberg Title County Engineer

Complete Mailing Address Clay County Engineer Administration Building, 300 West 4th,

Street Suite 5, Spencer, Iowa 51301

Phone (712) 262-2825 (Area Code) E-Mail wrabenberg@claycounty.iowa.gov

If more than one highway authority is involved in this project, please indicate and fill in the information below (use additional sheets if necessary).

Co-Applicant(s) _____

Contact Person _____ Title _____

Complete Mailing Address _____

_____

Phone _____ (Area Code) E-Mail _____

PLEASE COMPLETE THE FOLLOWING PROJECT INFORMATION

Funding Amount

Total Safety Cost	$ 5,616.60
Total Project Cost	$ 5,616.60
Safety Funds Requested	$ 5,616.60

Does this project appear on a Safety Improvement Candidate List or is there a safety study recommendation for this project?

[ ]Yes – Explain _____

[X]No

APPLICATION CERTIFICATION FOR PUBLIC AGENCY

To the best of my knowledge and belief, all information included in this application is true and accurate, including the commitment of all physical and financial resources. This application has been duly authorized by the participating public agency(ies). I understand the attached resolution(s), where applicable, binds the participating public agency(ies) to assume responsibility for any additional funds, if required, to complete the project. In addition, the participating public agency(ies) agrees to maintain any new or improved public streets or roadways for a minimum of five years.

I understand that, although this information is sufficient to secure a commitment of funds, a firm contract between the applicant and the Department of Transportation is required prior to the authorization of funds.

Representing the Clay County Engineer's Office

Signed: William D. Rabenberg 6/27/23
Signature Date Signed

William D. Rabenberg
Printed Name (County Engineer)

Attes: Randy Swanson 6-27-23
Signature Date Signed

Randy Swanson, Clay County Board Chair
Printed Name (Chair, Clay County Supervisor)

RESOLUTION NO. #2023-19
Transport Safety Improvement Program Grant Application
Portable Traffic Signals

WHEREAS the Iowa Department of Transportation Traffic Safety Improvement Program operates under the rules of Iowa Administrative Code 761-Ch. 164; and

WHEREAS said program allows for the distribution of traffic safety funds to cities, counties, and the Iowa DOT for roadway safety improvements, research, studies, or public information initiatives; and

WHEREAS the Clay County Engineer has determined that materials funded by this grant would improve the roadway safety in Clay County.

THEREFORE BE IT RESOLVED BY THE BOARD OF SUPERVISORS OF CLAY COUNTY, IOWA on this 27th day of June 2023 that this County does hereby support the attached application for Traffic Safety Improvement Program funding.

AYES: Batschelet, Hamrick, Anderson, Swanson
NAYES: None.
ABSTENTIONS: None.

ATTEST:

Ann Baschke, Clay County Auditor

Randy Swanson, Chairperson
Clay County Board of Supervisors

Narrative

The Clay County Secondary roads department is applying for funding from the Iowa DOT Traffic Safety Improvement Program to allow for the purchase of reflective sign post strips. These would be applied to stop and chevron signs throughout the county, improving their effectiveness through an increase in noticeability. Due to the importance of these signs, this investment will ultimately make Clay County a safer environment for all of its roadway travelers.

The Clay County Secondary roads department currently maintains 450 stop signs and 212 chevron signs throughout the county. However, only 12 of these stop signs and 11 chevrons contain reflective strips on their post. These signs play a vital role in roadway safety by establishing directions and instructions on 970 miles of paved and gravel roads and 137 bridges throughout Clay County. Their ability to prevent vehicle collisions and keep vehicles on the road is invaluable, but only effective when they are properly noticed. The increased area of reflectivity from the reflective strips will make the stop and chevron signs more noticeable to help reduce accidents. Clay county seeks to improve the safety of the roadway with the installation of these reflective strips.

The funding requested will allow for the purchase of 438 red and 413 yellow reflective strips to be attached to stop and chevron signs respectively. This would equip all of Clay County's stop and chevron signs with their maximum reflective potential. 2 reflective strips will be allocated to each chevron sign, with one placed on each side of the post. This will allow oncoming traffic from both sides to see the reflector strip well in advance of the curve. This will offer superior warning to a single reflector strip placed in the center of the post so it is visible by both sides of traffic, as these can only be seen as a driver is passing the sign and already on the curve. Installing the reflective strips on various sign posts would increase the overall safety of Clay County roads in several ways, including:

- Greatly increasing the noticeability of signs at night by making the posts much more visible than they would otherwise be without the added reflectivity
- Making the signs more visible during the day by adding a stripe of bright color to every post they are on
- Increasing the effectiveness of signs for drivers that regularly see the signs by adding a small yet noticeable change to the signs

Approval of this application will allow Clay County to purchase 438 red and 413 yellow signpost reflector strips to thoroughly enhance the currently existing network of chevron and stop signs. These are readily and rapidly implementable, while offering a potentially lifesaving upgrade to the effectiveness of current road signs. In addition, they fulfill all MUTCD compliance requirements. In conclusion, safety benefits, even life saving, far outweigh the cost of installing reflective strips for chevron and stop signs. Clay County appreciates the Traffic Safety Improvement Program's consideration of this grant application.

[c]

Itemized Breakdown of Cost

Red 2x48 Aluminum Diamond Grade Reflector Strips: $2,890.80
Quantity: 438 Price per Unit: $6.60

Yellow 2x48 Aluminum Diamond Grade Reflector Strips: $2,725.80
Quantity: 413 Price per Unit: $6.60

Total Cost: $5,616.60

Product Description	Unit Price	Quantity	Total
 IPIR100: RED REFLECTOR STRIP 2X48 Sign Pricing & Configurations .080 Aluminum Red Diamond Grade Reflective Remove Move to List	$6.60	438	$2,890.80
 IPIW100: YELLOW REFLECTOR STRIP 2X48 Sign Pricing & Configurations .080 Aluminum Yellow Diamond Grade Reflective Remove Move to List	$6.60	413	$2,725.80

SUBTOTAL $5,616.60

Zip Code Go

+ COUPON CODE
Click to Enter a Coupon Code.

Shipping $0.00

Estimated Total $5,616.60

Proceed to Checkout

Pay With

Purchase Order, Personal Check or Money Order, MasterCard, Visa
(NOTE: State of Iowa P-Cards are not accepted!)

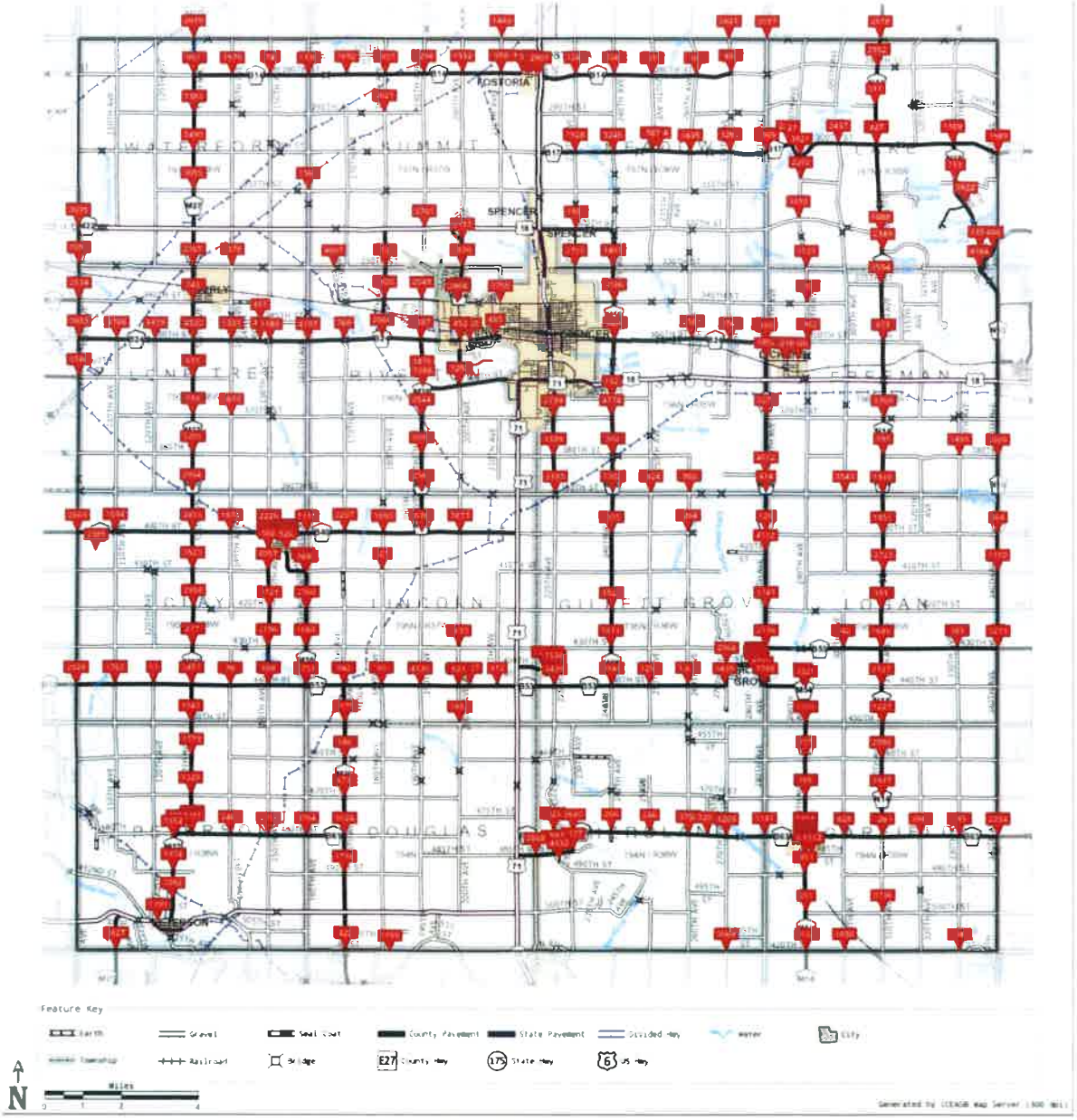
[D]

Time Schedule

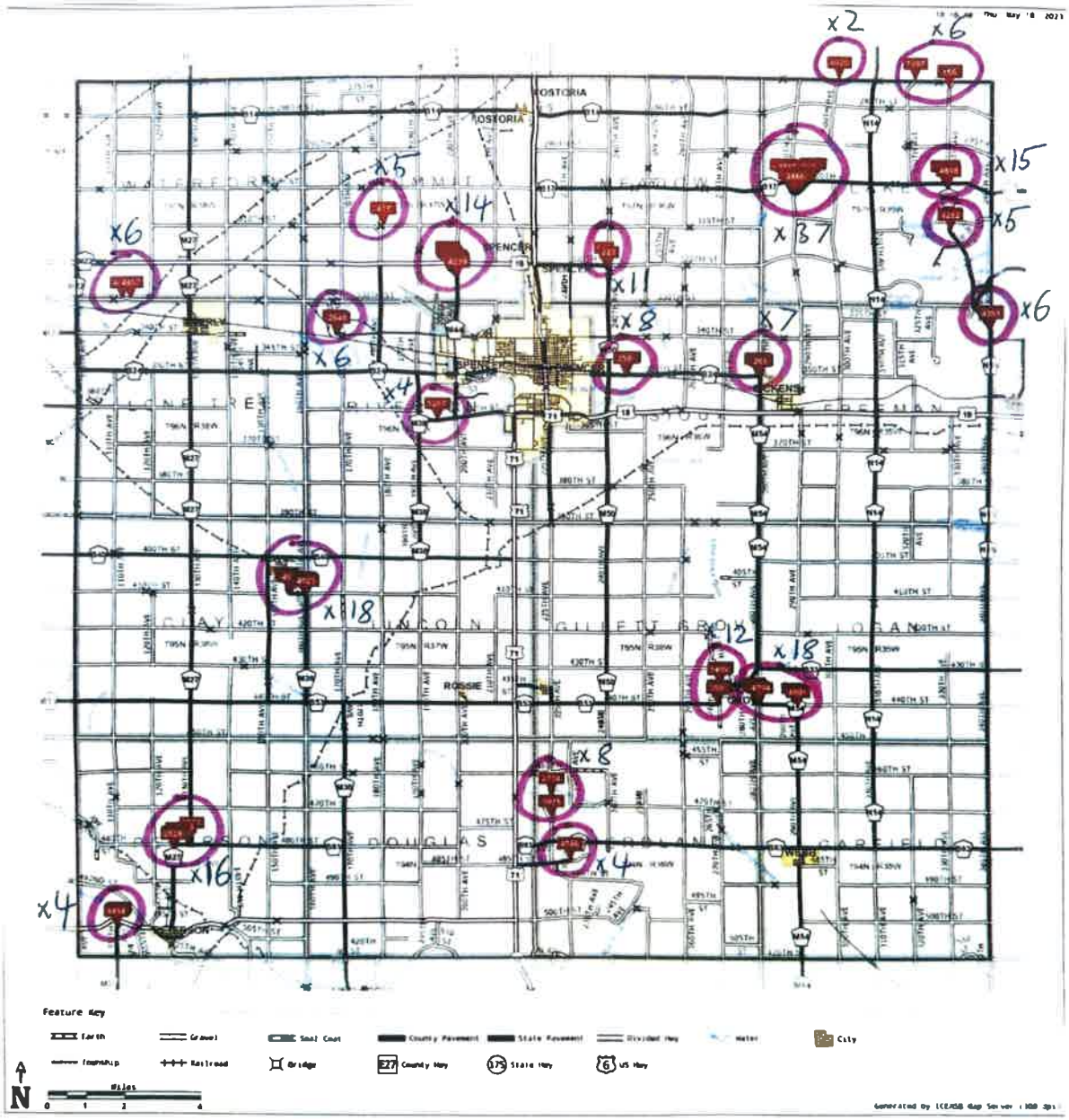
- TSIP Application Due: August 15, 2023
- TSIP Approval Notice: Mid-January 2024
- TSIP Funding Available: July 1, 2024
- Purchase of Reflective Strips: July 2024
- Installation of Reflective Strips Begins: Immediately after receiving them

Maps

Locations of Stop signs:

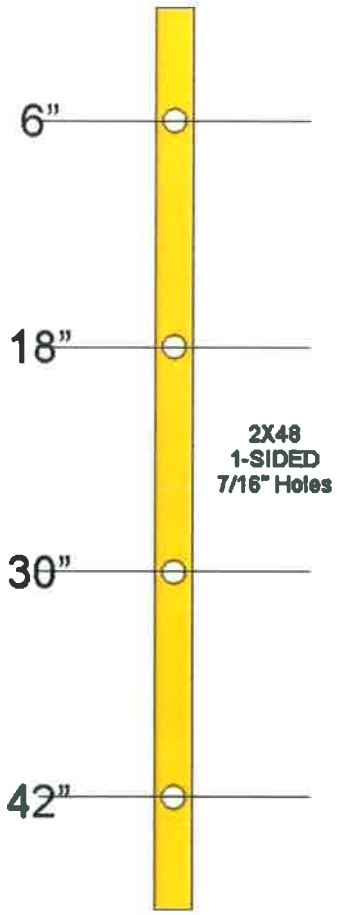


Locations of Chevron Signs:

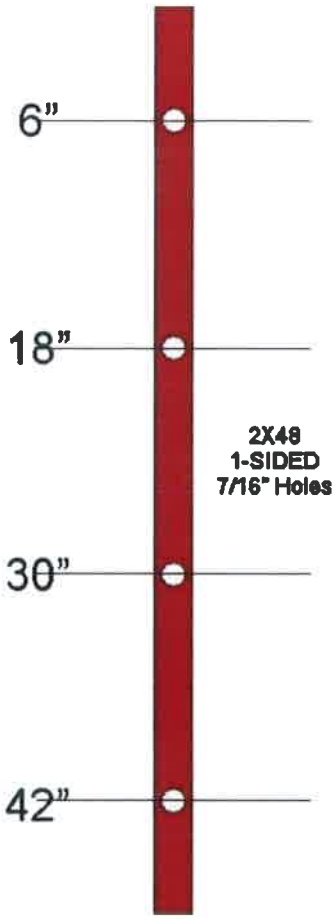


[F]

Colored Pictures



Yellow Reflector Strip for Chevron Signs



Red Reflector Strip for Stop Signs

[G]

Plan View

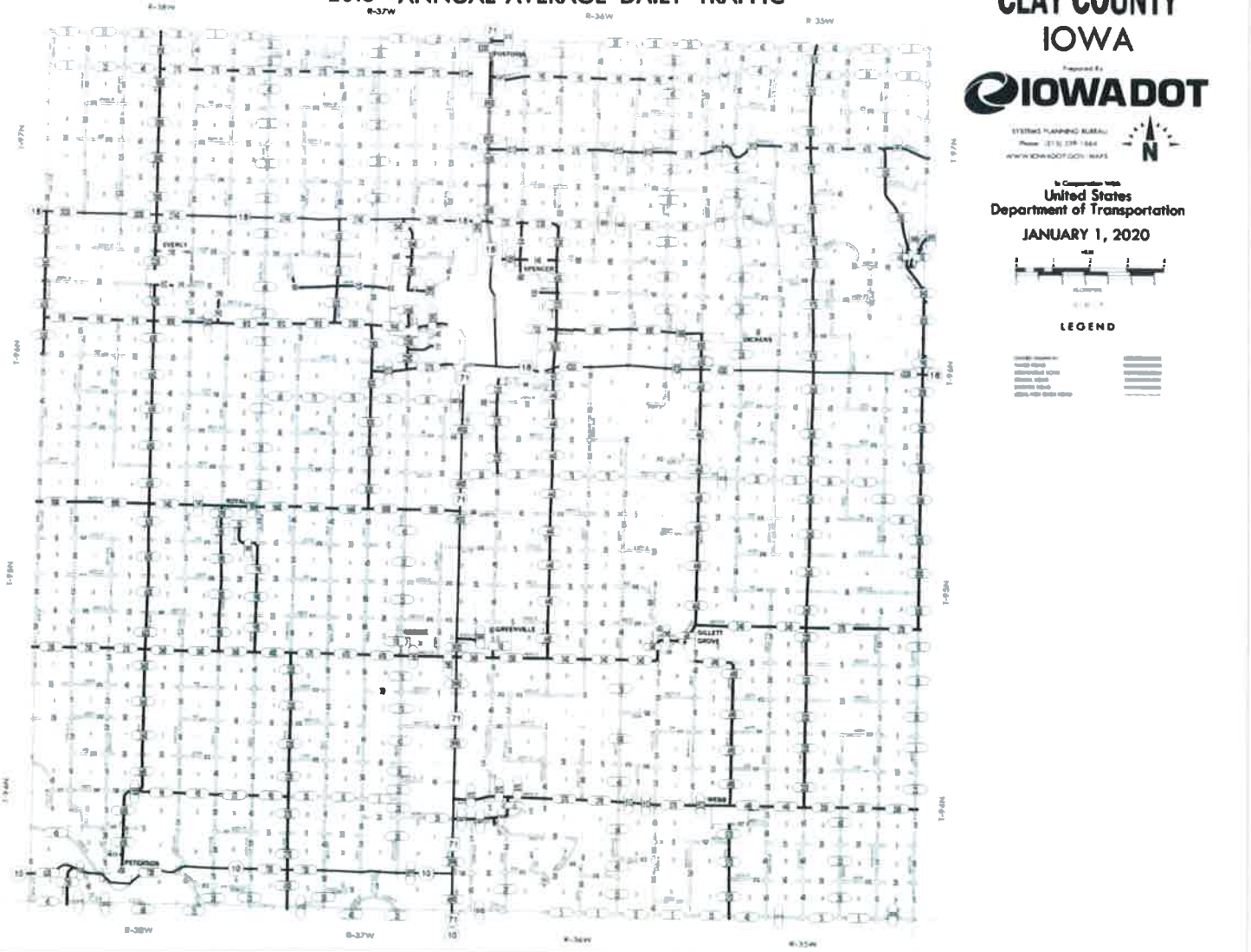
Existing Conditions:

Proposed Project Conditions:

Note: All chevron and stop signs are accessible within existing ROW, which will not be altered

Traffic Volumes

(2019) ANNUAL AVERAGE DAILY TRAFFIC
2015 ANNUAL AVERAGE DAILY TRAFFIC



Reference to higher quality map: https://iowadot.gov/maps/msp/traffic/2019/counties/CLAY.pdf

A

Application for TRAFFIC CONTROL DEVICE TSIP FUNDS

GENERAL INFORMATION **DATE:** March 13, 2023

Location / Title of Project Davis County Temporary Traffic Signals

Applicant Davis County Highway Department

Contact Person Ryan Schock Title County Engineer

Complete Mailing Address 21585 Lilac Ave

Bloomfield, IA 52537

Phone (641) 664-2542 E-Mail schockr@daviscountyiowa.org
(Area Code)

If more than one highway authority is involved in this project, please indicate and fill in the information below (use additional sheets if necessary).

Co-Applicant(s) _____

Contact Person _____ Title _____

Complete Mailing Address _____

_____

Phone _____ E-Mail _____
(Area Code)

PLEASE COMPLETE THE FOLLOWING PROJECT INFORMATION:

Funding Amount

Total Safety Cost	$ 63,500
Total Project Cost	$ 63,500
Safety Funds Requested	$ 63,500

Does this project appear on a Safety Improvement Candidate List or is there a safety study recommendation for this project?

☐ Yes – Explain _____

☒ No

A

Rev. 5/18

APPLICATION CERTIFICATION FOR PUBLIC AGENCY

To the best of my knowledge and belief, all information included in this application is true and accurate, including the commitment of all physical and financial resources. This application has been duly authorized by the participating public agency(ies). I understand the attached resolution(s), where applicable, binds the participating public agency(ies) to assume responsibility for any additional funds, if required, to complete the project. In addition, the participating public agency(ies) agrees to maintain any new or improved public streets or roadways for a minimum of five years.

I understand that, although this information is sufficient to secure a commitment of funds, a firm contract between the applicant and the Department of Transportation is required prior to the authorization of funds.

Representing the County of Davis

Signed: _____ 3-13-23
Signature Date Signed

Ryan Schock
Printed Name

Attest: Brenda Johnson 3-14-23
Signature Date Signed

Brenda Johnson
Printed Name

A

March 13, 2023

RESOLUTION # 31323

RESOLUTION TO AUTHORIZE THE SUBMITTAL OF A
TRAFFIC SAFETY FUND APPLICATION

WHEREAS, the Traffic Safety Fund program allows for the award of traffic safety funds to cities, counties and the IDOT for roadway safety improvements, research studies and traffic control devices; and

WHEREAS, Davis County has determined that providing temporary traffic control signals at work zone sites will improve safety to Davis County employees and to the traveling public; now

THEREFORE BE IT RESOLVED by the Board of Supervisors of Davis County, Iowa, that Ryan Schock, County Engineer of Davis County, Iowa, be and is hereby designated, authorized, and empowered on behalf of the Board of Supervisors of said County to submit a Traffic Safety Improvement Program Application to the Iowa Department of Transportation for portable traffic signal trailers; and

BE IT FURTHER RESOLVED by the Board of Supervisors of Davis County, Iowa, that the chairperson be authorized to sign the grant application and should funding be awarded that Davis County will assume responsibility and ensure proper maintenance of any new or improved installations.

Roll Call:

Ron Bride, Chairman

Dave Henderson, Vice Chairman

Absent
Alan Yahnke, Member

ATTEST:

County Auditor, Linda Humphrey

B. Narrative

Davis County is applying for the Transportation Safety Improvement Program (TSIP) funds in the amount estimated to be 100% of the cost of a pair of portable temporary traffic signals. The primary purpose of the temporary traffic signals would be to replace flagging operations in Secondary Road Department work zones and to allow lane closure areas in overnight closure situations.

The Davis County Secondary Roads Department is responsible for the engineering, construction and maintenance of the county's secondary road system. The secondary road system in Davis County consists of 168 bridges, 91 miles of paved roads, 648 miles of granular surfacing, and 56 miles of dirt roads totaling 795 miles. Typical paved route daily traffic county in Davis County ranges from 130 to 1440 vehicles per day.

Part 6F.84 of the MUTCD provides warrants, standards, guidance, and support for the use of traffic signals in work zones. Additional information regarding signal use is located in Part 4. The primary use of the temporary traffic signals would be in a work zone temporary lane closure scenario for one lane, two-way traffic operation.

Secondary Road Crews routinely are required to close lanes of travel for numerous maintenance activities including, but not limited to, the following: PCC patching, HMA patching, culvert repair and replacement, bridge approach repair and replacement, tile repair and installation, guardrail repair and replacement, bridge rail repair and slope repairs. The deployment of temporary traffic signals utilizing traffic control plan 6H-12 in work zones (see section I) would reduce the number of employees exposed to the traveling public which reduces risk of injury and possible conflicts between drivers and flaggers.

The safety benefits of utilizing temporary traffic signals over flaggers is hard to quantify in dollars. However, a list of safety benefits for maintenance crews and motorists in situations utilizing temporary traffic signals is available below:

- Increased visibility to approaching motorists (additional signage and overhead signal)
- More direct communication with motorist
- Clearer understanding and familiarity with drivers
- Significantly more viable for nighttime operations
- Relieves the physical demands, stress, fatigue and hazards of flagging
- Elimination of two positions from work zone with the highest risk exposure

Davis County is requesting TSIP funding for an amount equal to the cost of a pair of temporary traffic signals with pilot car remote and vehicle detections options included. Signals with these options would facilitate safe and efficient traffic flow in and around various work zones on Davis County secondary roads. Other County Departments, Cities and other jurisdictions could also benefit from these signals in the event of a signal knock down, disaster event or routine maintenance when not in use by Davis County. Additionally, it would allow Davis County the flexibility to establish short-term overnight closures for road and bridge repairs and remove employees from high-risk situations in close proximity to an ever-growing inattentive driving population.

C, D, E

C. Itemized Breakdown of Costs

Quotes listed here are for set of two signals with vehicle detection and pilot car remote for temporary traffic control. These preliminary quotes are attached in Appendix A.

Date	Vendor	Cost
2/6/23	Iowa Plains Signing, Inc.	$63,500.00
2/7/23	Tapco	$85,738.10
2/9/23	Horizon Signal	$58,873.50

D. Time Schedule

TSIP Application Due	8/15/23
TSIP Award Notification	1/15/24
TSIP Funding Available	7/1/24
Quote Review	7/31/24
Place Order	7/31/24
Delivery and Deployment Availability	9/15/24

E. Map

Project locations would be any county secondary road where lane closure is required.

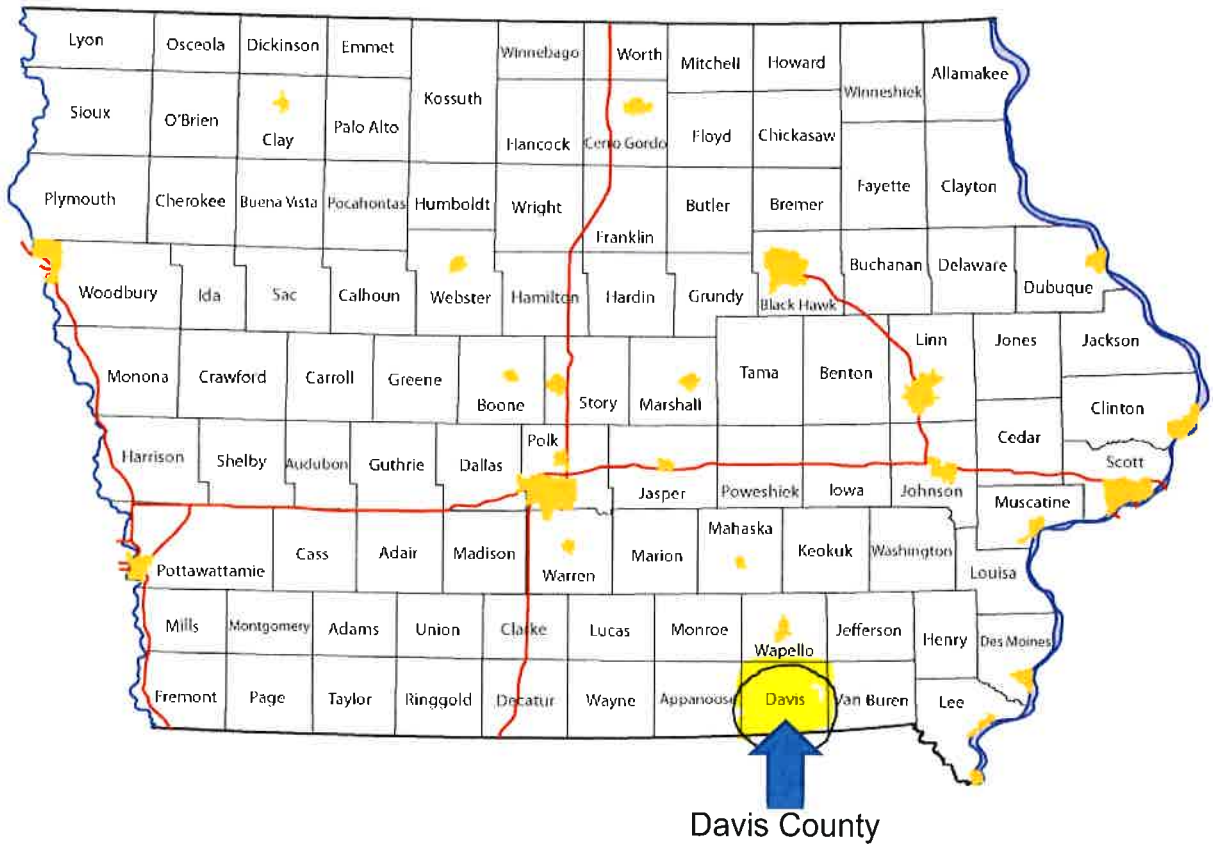
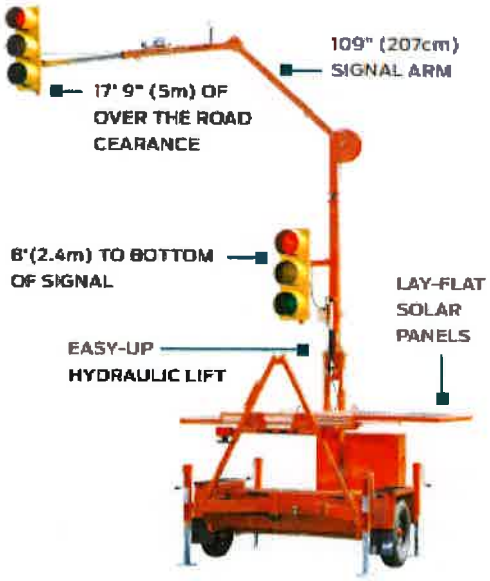
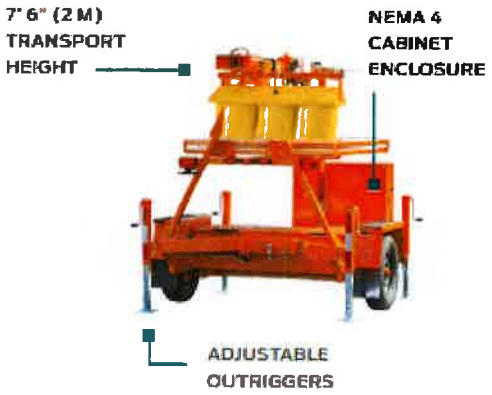


Image Source: https://iowadot.gov/maps/Digital-maps/City-and-county-maps

F

F. Color Pictures



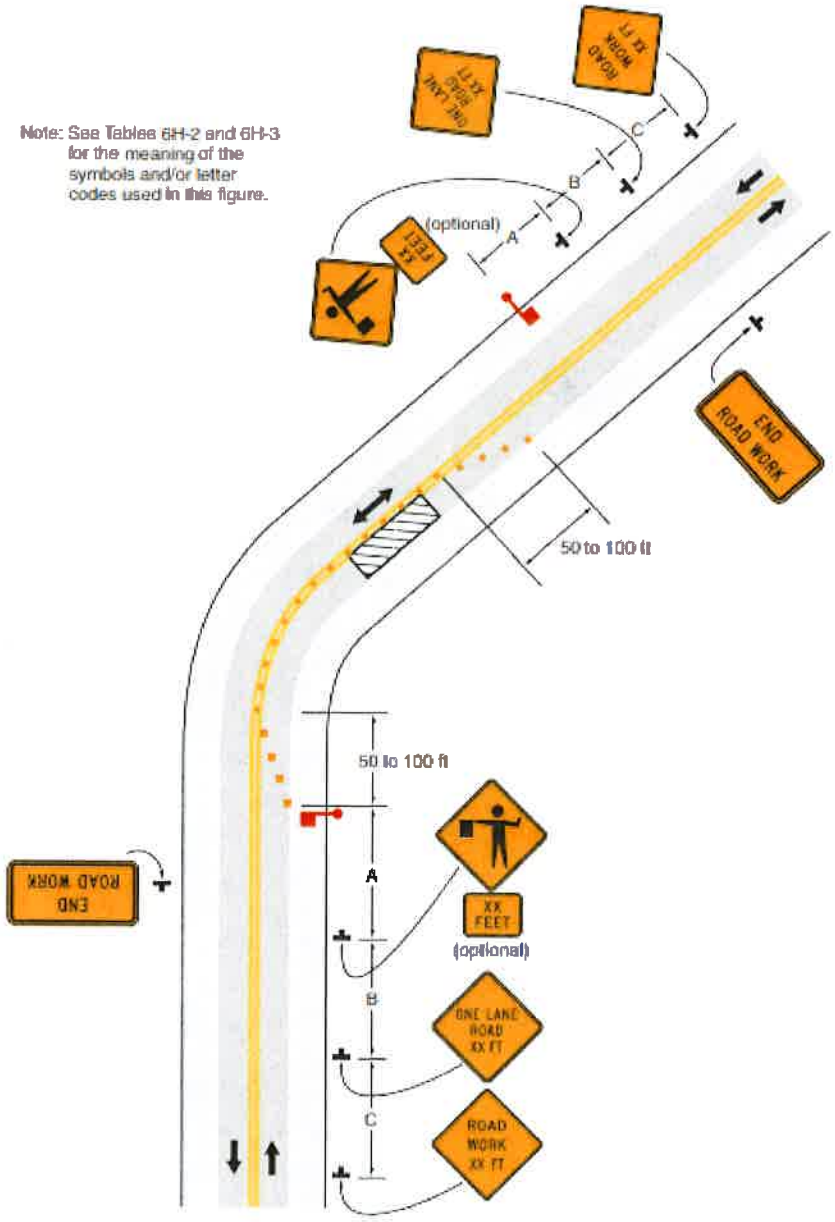


From the Horizon Signal quote

G

G. Plan View

Figure 6H-10. Lane Closure on a Two-Lane Road Using Flaggers (TA-10)

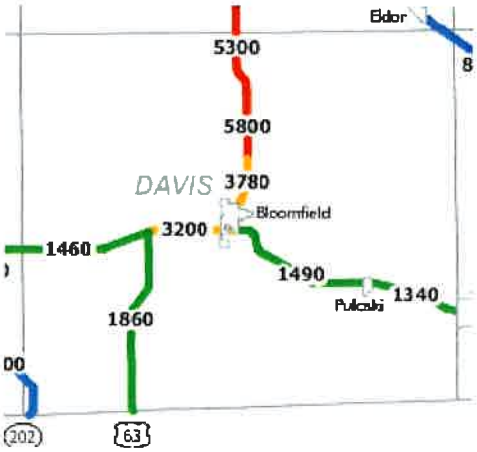


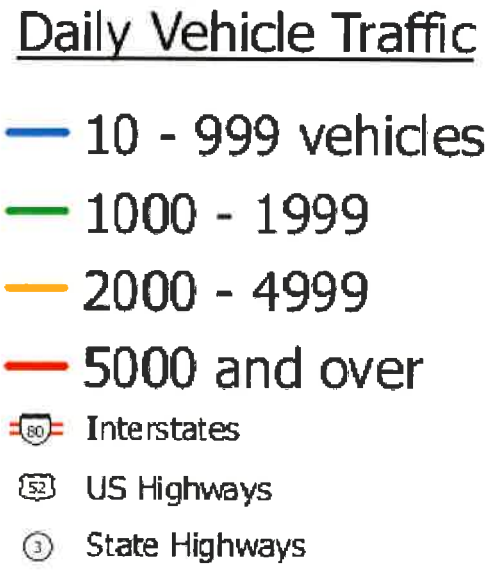
Typical Application 10

Image Source: MUTCD 2009

H. Traffic Volumes/Turning Movement

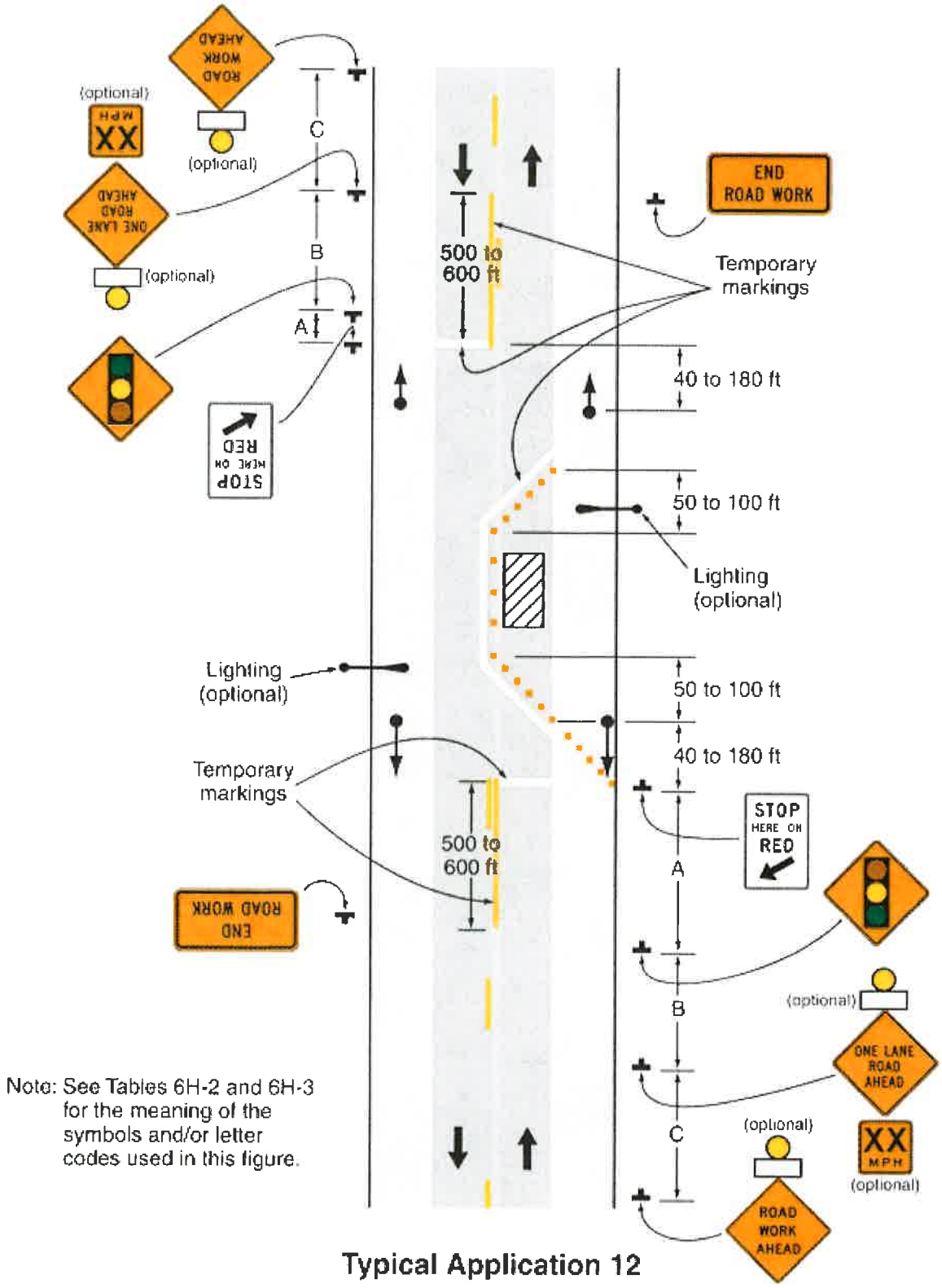
https://iowadot.gov/maps/msp/pdf/VehicularTrafficMap.pdf





I. Traffic Signal Layout

Figure 6H-12. Lane Closure on a Two-Lane Road Using Traffic Control Signals (TA-12)



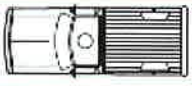
Note: See Tables 6H-2 and 6H-3 for the meaning of the symbols and/or letter codes used in this figure.

Typical Application 12

Image Source: MUTCD 2009

I

Table 6H-2. Meaning of Symbols on Typical Application Diagrams

Symbols	Description
	Arrow board
	Arrow board support or trailer (shown facing down)
	Changeable message sign or support trailer
	Channelizing device
	Crash cushion
	Direction of temporary traffic detour
	Direction of traffic
	Flagger
	High-level warning device (Flag tree)
	Longitudinal channelizing device
	Luminaire
	Pavement markings that should be removed for a long-term project
	Shadow vehicle
	Sign (shown facing left)
	Surveyor
	Temporary barrier
	Temporary barrier with warning light
	Traffic or pedestrian signal
	Truck-mounted attenuator
	Type 3 barricade
	Warning light
	Work space
	Work vehicle

I

Table 6H-3. Meaning of Letter Codes on Typical Application Diagrams

Road Type	Distance Between Signs**		
	A	B	C
Urban (low speed)*	100 feet	100 feet	100 feet
Urban (high speed)*	350 feet	350 feet	350 feet
Rural	500 feet	500 feet	500 feet
Expressway / Freeway	1,000 feet	1,500 feet	2,640 feet

* Speed category to be determined by highway agency

** The column headings A, B, and C are the dimensions shown in Figures 6H-1 through 6H-46. The A dimension is the distance from the transition or point of restriction to the first sign. The B dimension is the distance between the first and second signs. The C dimension is the distance between the second and third signs. (The "first sign" is the sign in a three-sign series that is closest to the TTC zone. The "third sign" is the sign that is furthest upstream from the TTC zone.)

Image Source: MUTCD 2009

J. Cost/Benefit Worksheet

Not Applicable

Appendix A

Quotes

IOWA PLAINS SIGNING, INC.

SAFER ROADS SAVE LIVES

Associated General Contractors of Iowa

AGC NEBRASKA

1110 W. 6TH AVENUE (HWY. 210 W) | P.O. BOX 654 | SLATER, IOWA 50244-0654
TELEPHONE:(515) 685-3536 FAX: (515) 685-3530

Quote For:	Davis County Engineer	Att.	Ryan Schock
Type of Sale:		Phone	641-680-2075
Quote Date:		Fax #	

Bid Item #	Description	Quantity	Units	Per Unit	Total
1	(2) SQ3TS Signal pair Solar Assisted signal trailers w/ tandem tow, (2) Signal Heads per trailer w/ Motion Sensors and Back Plates	1	EA	$ 63,500.00	$ 63,500.00
				Total	**$ 63,500.00**

Conditions or Notes:

This price includes delivery to customer. This price does not include sales tax.

6-Feb-23 **Date**

Signature

Mac Campbell
Cell (515) 494-8591

Date

Acceptance Signature

TAPCO
Safe travels.

Traffic and Parking Control Co.
5100 West Brown Deer Rd
Brown Deer, WI 53223
Phone No.:800-236-0112
E-Mail: info@tapconet.com

SALES QUOTE

SALES QUOTE DATE
2/7/2023
SALES QUOTE NUMBER
Q23001969
CUSTOMER NO.
C99004

BILL TO
Davis County
Ryan Schock
21585 Lilac Ave
Bloomfield, IA 52537-7597
United States of America

SHIP TO
Davis County
Ryan Schock
21585 Lilac Ave
Bloomfield, IA 52537-7597
United States of America

SHIP VIA	TERMS	SALESPERSON	VALID UNTIL
BEST RATE	Net 30 DAYS	Deidre Jones	3/9/2023

Item/Description	U/M	Quantity	Unit Price	Total Price
119573 Portable Traffic Signal System,SQ3TS,Solar Assisted Model w/2 signal trailers,wireless radios	Each	1	70,315.00	70,315.00
149518 Motion Detector, 1 Sensor, For Signal Actuation	Each	2	1,535.00	3,070.00
138441 Remote Package, Wireless, 1 Handheld Remote for SQ3	Each	2	3,750.00	7,500.00

Plus Shipping and Handling

Furnish only quote. Installation is not included.
Solar powered equipment requires no shading
or obstructions

TAPCO will make every effort to ship all systems
in normal process; however, as a result of global
supply chain constraints some components might be
impacted by extended lead times.

Thank you! Deidre Jones
Email: Deidre.jones@tapconet.com
Phone: 262-649-5227

Subtotal:	**80885.00**
Invoice Discount:	0.00
Total Sales Tax:	4,853.10
Total:	**85,738.10**

All prices are listed in US Dollar (USD)
For terms and conditions, please visit https://tapconet.com/terms-conditions

HORIZON SIGNAL

ADVANCING WORKZONE SAFETY

Quotation

Quote #JGH2309
2-9-23

CUSTOMER
Davis County Secondary Rd. Dept.
Attn: Ryan Schock, Engineer
PO Box 365
Bloomfield, IA 52537
Phone 641-664-2542
Email: schockr@daviscountyiowa.org

RE: SQ3TS Portable Traffic Signal System

Part #	Item/Description	Unit Price	Qty	Total Price
	SQ3TS Portable Traffic Signal System (2 Trailers) (2) Solar-assisted signal trailers with tandem tow capability. (2) two signal heads per trailer, all LED lamps, (2) controllers (1) PTS Programmer and wireless radio communication System. Wind Rating at 100 mph, with gusts to 110 mph.	$ 52,500.00	1	$ 52,500.00
	Motion Sensors Motion detectors for signal actuation. Price includes (2) sensors.	$ 1,725.00	1	$ 1,725.00
	Wireless Remote Package Provides wireless control of SQ2 or SQ3 signal system. One package required per system. Includes receiver and transmitter.	$ 1,987.50	1	$ 1,987.50
	Pilot Car/Flagger Module Allows flagger/pilot car driver to operate signals remotely using handheld transmitter. Price includes (2) receivers and (1) transmitter.	$ 2,661.00	1	$ 2,661.00
	Total			$ 58,873.50

Terms: Net 30 days
FOB: Reading, PA 19608
*** 5 year warranty on LED Lights. Signals and components are warranted for a period of 2 years, excluding batteries and tires. 10-year limited warranty on the trailers themselves. ***

Ryan,
Current lead times once we receive a signed quote or P.O. are 3-4 weeks. I included a few extra components, namely the wireless remote package... You can pick and choose should you go ahead with the purchase.

The SQ3TS Trailer-Mounted PTS is the most dynamic and dependable portable traffic signal available today. With an industry-leading 100-mph wind load, and a 25-year design life, the SQ3TS Portable Traffic Signal is the temporary traffic control workhorse that you can rely on year after year. From a simple one-lane bridge repair project, to complete intersection control, the SQ3TS System has you covered, under even the most demanding conditions.
Please call me with any questions!
Thanks,

HORIZON SIGNAL

Jesse Heitkamp
NW Regional Sales Manager
Fargo, ND
Horizon Signal Technologies
Office: 852-8796 x407
Mobile: 701-371-2669
jheitkamp@horizonsignal.com
www.horizonsignal.com

Signature_____ Date_____

NEMA TS-5 Type TR1 Portable Traffic Signal System

APPROVED BY MORE STATE DOTs THAN ANY OTHER PTS

The SQ3TS Trailer-Mounted PTS is the most dynamic and dependable portable traffic signal available today. With an industry-leading 100-mph wind load, and a 25-year design life, the SQ3TS Portable Traffic Signal is the temporary traffic control workhorse that you can rely on year after year. From a simple one-lane bridge repair project, to complete intersection control, the SQ3TS System has you covered, under even the most demanding conditions.

"WE COULD NOT BE HAPPIER WITH THE SQ3TS."

TAD BROOKS
Vice President - LMC
Safety Barricade Corp.

The SQ3TS Portable Traffic Signal exceeds NEMA TS-5 specifications for Type TR1 PTS, and is available with a wide range of add-on components to meet any project requirements.

SQ3TS® Portable Traffic Signal

SPECIFICATIONS

Signal Lamp	12" (300 mm) diameter LED
Signal Arm Extension	68 to 109" (173 to 277 cm)
Solar Charge	520W min
Power Source	12V / (16) 6V batteries
Tow Height	89" (226 cm)
Trailer Width	85" (216 cm)
Trailer Weight	3000 lb. (1361 kg)

SQ3TS FEATURES

- Heavy-duty trailer with 25-year design life
- Dual-Processor Malfunction Management System
- Withstands sustained winds of 100 mph, gusts up to 110 mph
- 10-year structural warranty on trailer
- Lifting Ring for easy signal placement
- Hydraulic lift system
- 30 days run time on batteries alone
- Up to 14 phases of traffic per system
- Tandem-tow trailers
- Exceeds NEMA TS-5 requirements for Type TR1 PTS
- MUTCD Compliant

AVAILABLE OPTIONS

TILTING SOLAR PANELS | Allows for solar panel adjustment on SQ3TS for maximum sun exposure.

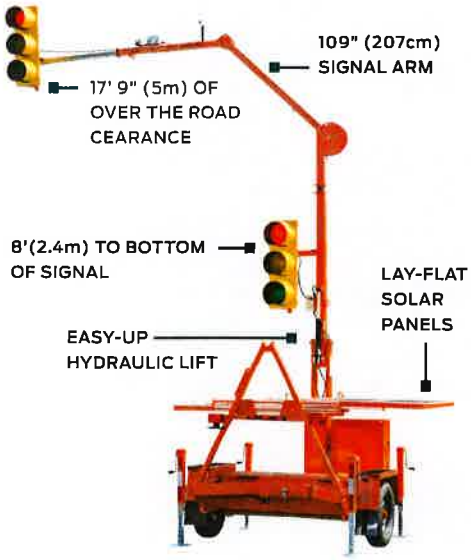
15-FOOT EXTENSION ARM | Longer extension arm for greater horizontal reach on SQ3TS trailer. Ideal for 2-lane applications.

ADVANCED REMOTE MONITORING | Receive text and/or email alert notifications of signal operation and battery voltage levels.

WIRELESS KNOCKDOWN | Allows signal to operate in conjunction with a standard street corner control cabinet.

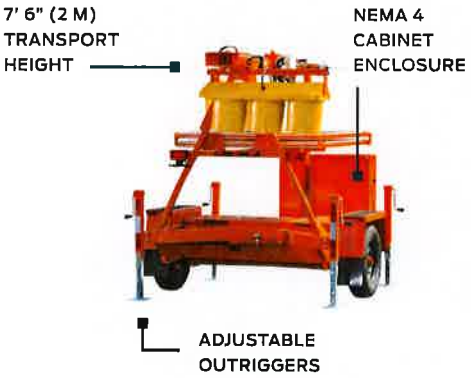
PRE-EMPTION SYSTEM | Recognizes emergency vehicles and provides earliest safe green indications.

WAIT TIME & FAULT DISPLAY | Informs motorists of wait time before next green indication.



EASY TO DEPLOY

The SQ3TS Portable Traffic Signal is equipped with a one-touch, easy-up hydraulic lifting system to make deployments simple.



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HORIZON SIGNAL

ADVANCING WORKZONE SAFETY

5 Corporate Blvd
Reading, PA 19608

800.852.8796
horizonsignal.com

Regional Support Centers

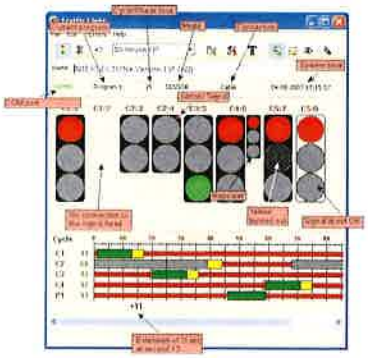
Philadelphia, PA
Albuquerque, NM
Birmingham, AL
Chicago, IL
Fargo, ND
Indianapolis, IN
Orlando, FL
St. Catharines, ON
Waco, TX
Santiago, Chile

ISO 9001:2015
Certified Quality Management System

SQ3TS® Upgrades

WORK ZONE VIDEO MONITORING

The Work Zone PTZ Camera allows users to monitor work zone activites via live stream video, accessible from any internet-connected device. 360-degree rotation, as well as zoom and tilt controls are included.



REMOTE SIGNAL MANAGEMENT

Remote connection to your SQ3 system for real time signal operation information including active signal displays, alerts, Program Mode, and more. Remote signal timing adjustments can also be made by authorized users.

ADVANCED REMOTE MONITORING (ARM)

The ARM system sends text message and/or email alerts, reporting signal status and operation. Battery voltage, signal location, and fault status is reported in real-time or on demand from our dedicated monitoring website.

WAIT TIME & STATUS DISPLAY

Provides drivers with a visual display of the amount of time remaining before the next green indication. The system is ideal for long work zones with high Red Clearance intervals and potentially long wait times.

VIDEO DETECTION

Video actuation allows for true presence vehicle detection via the creation of customized detection zones. This non-intrusive detection system is easily installed and does not require a PC for configuration.

WIRELESS REMOTE

With up to a 1/2 mile range, the wireless remote is the most convenient method of manual signal control. The built-in vibration function works as a confirmation of each button press, and the signals can be switched back to automatic mode with just one tap.

BICYCLE DETECTION

Detects cyclists and adjusts signal timings to allow them to clear the work area. The Bicycle Detection System can also include customized bicycle LED indications for increased safety for cyclists when dedicated bike lanes are available.

WIRELESS KNOCKDOWN

The Wireless Knockdown system allows a Horizon SQ3TS signal to be wirelessly operated by a standard street corner traffic signal controller. The system is ideal for pole knockdowns, or temporary traffic pattern reconfigrations.

SQ3TS® Portable Traffic Signal

SPECIFICATIONS

Signal Lamp	12" (300 mm) diameter LED
Signal Arm Extension	68 to 109" (173 to 277 cm)
Solar Charge	520W min
Power Source	12V / (16) 6V batteries
Tow Height	89" (226 cm)
Trailer Width	85" (216 cm)
Trailer Weight	3000 lb. (1361 kg)

SQ3TS FEATURES

- Heavy-duty trailer with 25-year design life
- Dual-Processor Malfunction Management System
- Withstands sustained winds of 100 mph, gusts up to 110 mph
- 10-year structural warranty on trailer
- Lifting Ring for easy signal placement
- Hydraulic lift system
- 30 days run time on batteries alone
- Up to 14 phases of traffic per system
- Tandem-tow trailers
- Meets/exceeds NEMA TS-5 requirements for Type TR1 PTS
- MUTCD Compliant

AVAILABLE OPTIONS

WORK ZONE VIDEO MONITORING | Get a live look at your work zone with resolutions up to 1080p and 60fps.

15-FOOT EXTENSION ARM | Longer extension arm for greater horizontal reach on SQ3TS trailer. Ideal for 2-lane applications.

ADVANCED REMOTE MONITORING | Receive text and/or email alert notifications of signal operation and battery voltage levels.

WIRELESS KNOCKDOWN | Allows signal to operate in conjunction with a standard street corner control cabinet.

PRE-EMPTION SYSTEM | Recognizes emergency vehicles and provides earliest safe green indications.

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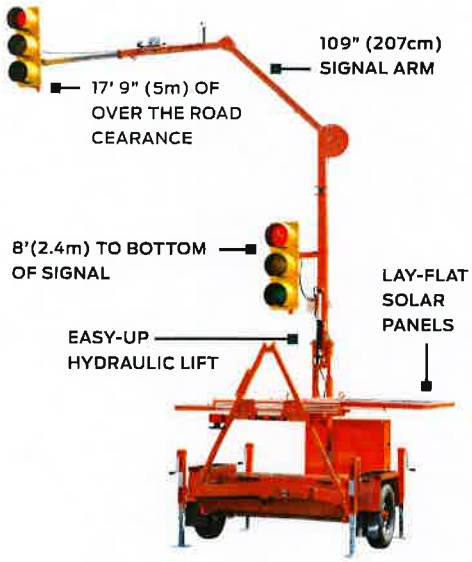

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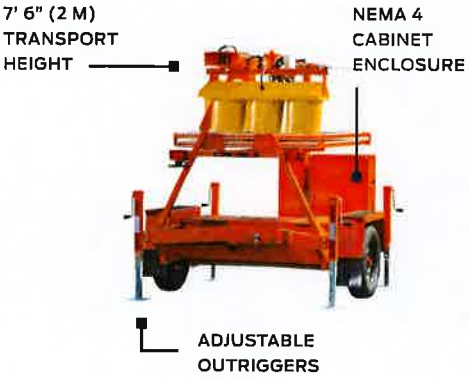

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5 Corporate Blvd
Reading, PA 19608

800.852.8796
horizonsignal.com

Regional Support Centers

Philadelphia, PA
Albuquerque, NM
Birmingham, AL
Chicago, IL
Fargo, ND
Indianapolis, IN
Orlando, FL
St. Catharines, ON
Waco, TX
Santiago, Chile

ISO 9001:2015
Certified Quality Management System

Application for TRAFFIC CONTROL DEVICE TSIP FUNDS

GENERAL INFORMATION **DATE:** 8/3/2023

Location / Title of Project P28 Curve Signs approx. 3 miles South of Panora

Applicant Guthrie County

Contact Person Evan Subbert Title Asst. to Engineer

Complete Mailing Address 2211 215th Rd. Guthrie Center, Iowa 50115

Phone (641)-747-2274 (Area Code) E-Mail e.subbert@guthriecounty.gov

If more than one highway authority is involved in this project, please indicate and fill in the information below (use additional sheets if necessary).

Co-Applicant(s) _____

Contact Person _____ Title _____

Complete Mailing Address _____

Phone _____ (Area Code) E-Mail _____

PLEASE COMPLETE THE FOLLOWING PROJECT INFORMATION:

Funding Amount

Total Safety Cost	$ 41,355.70
Total Project Cost	$ 41,355.70
Safety Funds Requested	$ 41,355.70

Does this project appear on a Safety Improvement Candidate List or is there a safety study recommendation for this project?

☐ Yes – Explain _____

☒ No

Rev. 5/18

APPLICATION CERTIFICATION FOR PUBLIC AGENCY

To the best of my knowledge and belief, all information included in this application is true and accurate, including the commitment of all physical and financial resources. This application has been duly authorized by the participating public agency(ies). I understand the attached resolution(s), where applicable, binds the participating public agency(ies) to assume responsibility for any additional funds, if required, to complete the project. In addition, the participating public agency(ies) agrees to maintain any new or improved public streets or roadways for a minimum of five years.

I understand that, although this information is sufficient to secure a commitment of funds, a firm contract between the applicant and the Department of Transportation is required prior to the authorization of funds.

Representing the Secondary Road Department for Guthrie County

Signed: _____ August 8, 2023
Signature Date Signed

Josh Sebern
Printed Name

Attest: _____ 8-8-23
Signature Date Signed

Brian Johnson
Printed Name

APPROVAL OF TRANSPORTATION SAFETY IMPROVEMENT PROGRAM GRANT APPLICATION

Guthrie County Resolution No. 24-05

WHEREAS, the Iowa Department of Transportation has adopted Administrative Rule 761-Chapter 164, which created the Traffic Safety Improvement Program (TSIP) to allow funding to be provided to local jurisdictions for eligible traffic safety improvement projects; and

WHEREAS, Guthrie County has determined the upgrading of traffic control devices for a curve approximately 3 miles south of Panora on Wagon Road (P28) will aid in improving the safety of the traveling public; and

WHEREAS, the traffic control devices shall be replaced or installed in accordance with the Manual on Uniform Traffic Control Devices, 2009 Edition

WHEREAS, the Guthrie County Engineer recommends a TSIP application be submitted to the Iowa Department of Transportation for possible safety funding of the above-mentioned traffic control devices.

THEREFORE, BE IT RESOLVED BY THE BOARD OF SUPERVISORS OF GUTHRIE COUNTY that this County does hereby endorse the preparation and submittal of the application for TSIP assistance to the Iowa Department of Transportation, and commit to the stipulations of public maintenance to the proposed improvements outlined within said application.

Resolution adopted this 8th day of August, 2023.

Guthrie County Board of Supervisors

Board of Supervisors Chairperson

ATTEST:

Guthrie County Auditor

Guthrie County Wagon Rd(P28) Curve Sign Upgrade – *NARRATIVE*

The Guthrie County Secondary Roads Department is applying for the Traffic Safety Improvement Program (TSIP), with plans to purchase and replace current signage with TAPCO's BlinkerSign LED advanced warning curve ahead (W1-2) and Chevrons (W1-8). In order to install these signs, Guthrie County also plans on installing new posts and solar power battery packs at each location to power the signs. The location of the signs are approximately 3 miles south of Panora on Wagon Rd (P28) in a horizontal curve. The current signs are 36" Diamond Grade Cubed (DGC) Advanced Warning Curve (W1-2) and 24"x30" Diamond Grade Cubed (DGC) Florescent Chevrons (W1-8). The signs are spaced in accordance with the Manual on Uniform Traffic Control Devices (MUTDC) Section 2C.09 "Chevron Alignment Sign (W1-8)" at 160' for the radius of the curve of which is 730.50'. The site has an advisory speed of 45 mph, which is 5mph less than the suggested MUTDC Table 2C-6 "Typical Spacing of Chevron Alignment Signs on Horizontal Curves". The recommended clear zone for this area is 20'. In areas of the curve where the slopes exceed 4:1, there are cable guardrails in place. Within the last year there have been four accidents in this curve. Three of those were property damage only, with one having a suspected minor injury. Over the last 10 years there have been 12 accidents most of which have been property damage only.

Wagon Rd (P28) is a very winding road that is approximately 14 miles long with 12 major horizontal curves on it. However, only one of these curves currently has the frequency of accidents to suggest additional safety measures be put in place. It is Guthrie County's belief that by emphasizing this one curve with TAPCO's BlinkerSigns it will set this curve apart and force drivers to pay more attention to it. A major factor in many of the accidents in this curve is the vertical curve coming down into the horizontal curve. This catches drivers off guard and brings them into the curve with too much speed. Guthrie County's plan of action, adding TAPCO's BlinkerSign LED Signs, would bring a great deal of attention to the curve, better alerting drivers of the hazard and allowing them to reduce to a safer traveling speed. With many of the accidents happening after dusk the LED blinking signs will perform especially well in the these most vulnerable hours. In a case study in Wisconsin, a similar vertical curve coming down to a horizontal curve saw a 97% reduction in accidents after installing TAPCO's BlinkerSign Advanced Warning and Chevron system.

Guthrie County Secondary Roads Department believes TAPCO's BlinkerSign system sign upgrade would greatly reduce the number of accidents at the curve location proposed in this application. Guthrie County will replace the sign locations with their own personnel and equipment making for a more cost effective and efficient process to upgrade the safety of this particular curve's alignment. Because of this reason Guthrie County is applying for the Traffic Safety Improvement Program (TSIP) Grant.

Guthrie County Wagon Rd (P28) Curve Sign Upgrade - *ITEMIZED BREAKDOWN OF COST*

TAPCO
Safe travels.

Traffic and Parking Control Co., Inc.
5100 West Brown Deer Rd
Brown Deer, WI 53223
Phone No.:800-236-0112
E-Mail: customerservice@tapconet.com

SALES QUOTE

SALES QUOTE DATE
7/12/2023
SALES QUOTE NUMBER
Q22018203
CUSTOMER NO.
C98339
Page: 1

BILL TO
Guthrie County
William Rouse
221 215th Rd
Guthrie Center, IA 50115
United States of America

SHIP TO
Guthrie County
William Rouse
221 215th Rd
GUTHRIE CENTER, IA 50115
United States of America

Ext. Document No.	SHIP VIA	TERMS	SALESPERSON	VALID UNTIL
CURVE WARNING	ABF Free Shipping	Net 30 DAYS	Deidre Jones	8/11/2023

Item/Description	U/M	Quantity	Unit Price	Total Price
Advanced BlinkerSigns				
500146 Controller, 12V, 136921, Radio, 30W TOP, No Pushbutton, No Battery	Each	2	1,900.00	3,800.00
137480 DUAL 22AH BATTERY PACK HARNESSED AND FUSED	Each	2	420.85	841.70
2180-C00206DF Blinkersign, W1-2L, 36", Left Curve, DG3, FY, Direct Fire, 8 Amb LEDs	Each	1	1,330.00	1,330.00
2180-C00341DF BlinkerSign, W1-2R, 36", Right Curve, DG3, FY, Direct Fire, 8 Amber LEDs	Each	1	1,330.00	1,330.00
114830 Post,Square,2.5"x2.5"x12',12 gauge Full Punch Galvanized	Each	2	228.00	456.00
129300 Post,Square,3"x3"x3' 7 Gauge Omni Anchor	Each	2	194.75	389.50
1603-00013 Bolt,Corner Bolt for for 2.5" Square Posts or smaller	Each	2	1.85	3.70
3177-00001 Nut,5/16-18 Heavy Hex Jam Nut	Each	2	0.90	1.80

All prices are listed in US Dollar (USD)
For terms and conditions, please visit https://tapconet.com/terms-conditions

TAPCO
Safe travels.

SALES QUOTE

Traffic and Parking Control Co., Inc.
5100 West Brown Deer Rd
Brown Deer, WI 53223
Phone No.:800-236-0112
E-Mail: customerservice@tapconet.com

SALES QUOTE DATE
7/12/2023
SALES QUOTE NUMBER
Q22018203
CUSTOMER NO.
C98339

BILL TO
Guthrie County
William Rouse
221 215th Rd
Guthrie Center, IA 50115
United States of America

SHIP TO
Guthrie County
William Rouse
221 215th Rd
GUTHRIE CENTER, IA 50115
United States of America

Ext. Document No.	SHIP VIA	TERMS	SALESPERSON	VALID UNTIL
CURVE WARNING	ABF Free Shipping	Net 30 DAYS	Deidre Jones	8/11/2023

Item/Description	U/M	Quantity	Unit Price	Total Price
2438-00004 Sign Mounting Kit, Square/U-Channel, Anti-Vandal For Mounting One Blinker Sign to 2.5" Sq	Each	2	38.95	77.90
Curve BlinkerSigns - Sequential				
500146 Controller, 12V, 136921, Radio, 30W TOP, No Pushbutton, No Battery	Each	6	1,900.00	11,400.00
137480 DUAL 22AH BATTERY PACK HARNESSED AND FUSED	Each	6	420.85	2,525.10
2180-00225DF BlinkerSign, W1-8, 24x30", Chevron, DG3, FY, Direct Fire, 10 Amb LEDs	Each	12	1,045.00	12,540.00
2180-BRKT-DBCV-SQ-AV Chevron Back to Back Bracket Set, 24x30, Fits Sq Poles 2-1/2, Anti-Vandal Hardware and U-bolt	Each	6	997.50	5,985.00
3200-0000 FREIGHT SALES		1	675.00	675.00

Furnish only quote. Installation is not included.
Solar powered equipment requires no shading or obstructions

All prices are listed in US Dollar (USD)
For terms and conditions, please visit https://tapconet.com/terms-conditions

TAPCO
Safe travels.

SALES QUOTE

Traffic and Parking Control Co., Inc.
5100 West Brown Deer Rd
Brown Deer, WI 53223
Phone No.:800-236-0112
E-Mail: customerservice@tapconet.com

SALES QUOTE DATE
7/12/2023
SALES QUOTE NUMBER
Q22018203
CUSTOMER NO.
C98339

BILL TO
Guthrie County
William Rouse
221 215th Rd
Guthrie Center, IA 50115
United States of America

SHIP TO
Guthrie County
William Rouse
221 215th Rd
GUTHRIE CENTER, IA 50115
United States of America

Ext. Document No.	SHIP VIA	TERMS	SALESPERSON	VALID UNTIL
CURVE WARNING	ABF Free Shipping	Net 30 DAYS	Deidre Jones	8/11/2023

Item/Description	U/M	Quantity	Unit Price	Total Price

Thank you! Deidre Jones
Email: Deidre.jones@tapconet.com
Phone: 262-649-5227

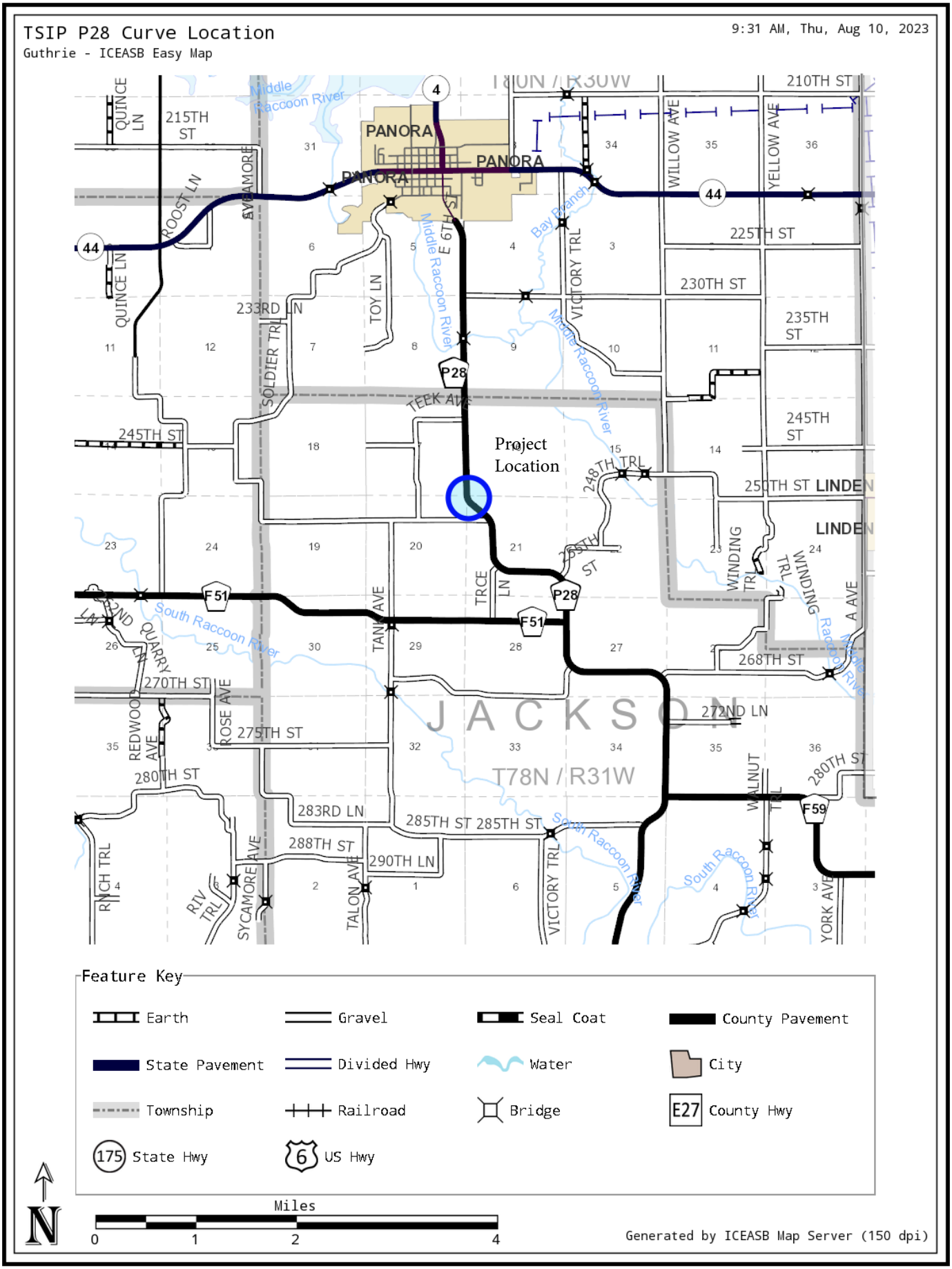
Subtotal:	**41355.70**
Invoice Discount:	0.00
Total Sales Tax:	0.00
Total:	**41,355.70**

All prices are listed in US Dollar (USD)
For terms and conditions, please visit https://tapconet.com/terms-conditions

Guthrie County P28 Curve Sign Upgrade - *TIME SCHEDULE*

- TSIP Application Due: August 15th 2023
- TSIP Award Notification: Mid-January 2023
- TSIP Funding Available: July 1st 2023
- Purchase of Advanced Blinker Signs July 2023
- Installation of Advanced Blinker Signs Immediately after receiving them

Guthrie County P28 Curve Sign Upgrade - *MAP*



Guthrie County P28 Curve Sign Upgrade - *COLOR PICTURES*

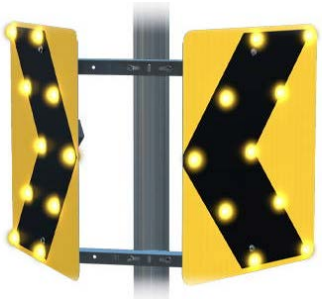
Existing Site: Advanced Warning Southbound

Existing Site: Chevron Southbound

Existing Site: Advanced Warning Northbound

Existing Site: Curve Northbound

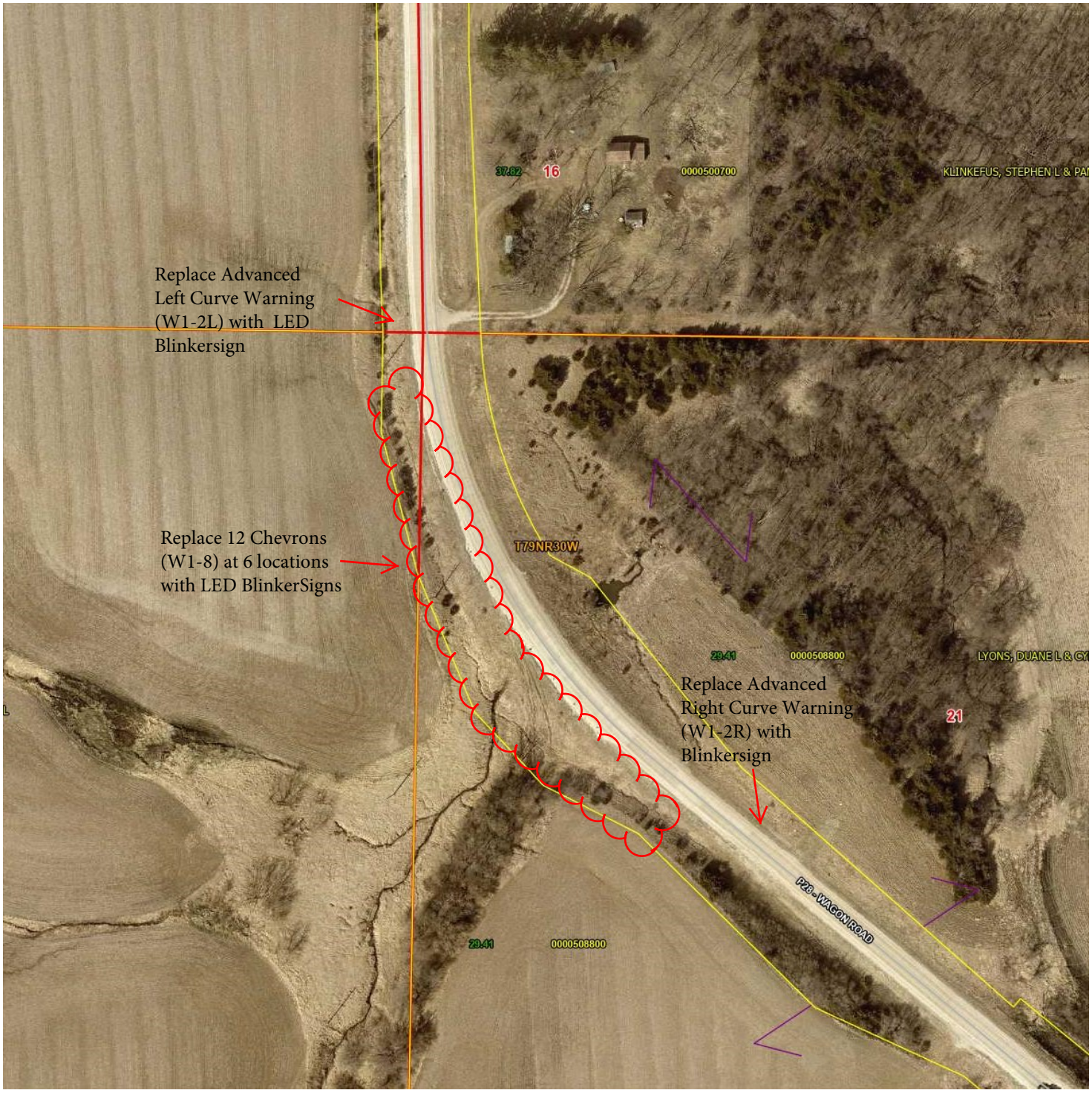
Proposed: BlinkerSign W1-8 Cheveron



Proposed: BlinkerSign Advanced Warning*

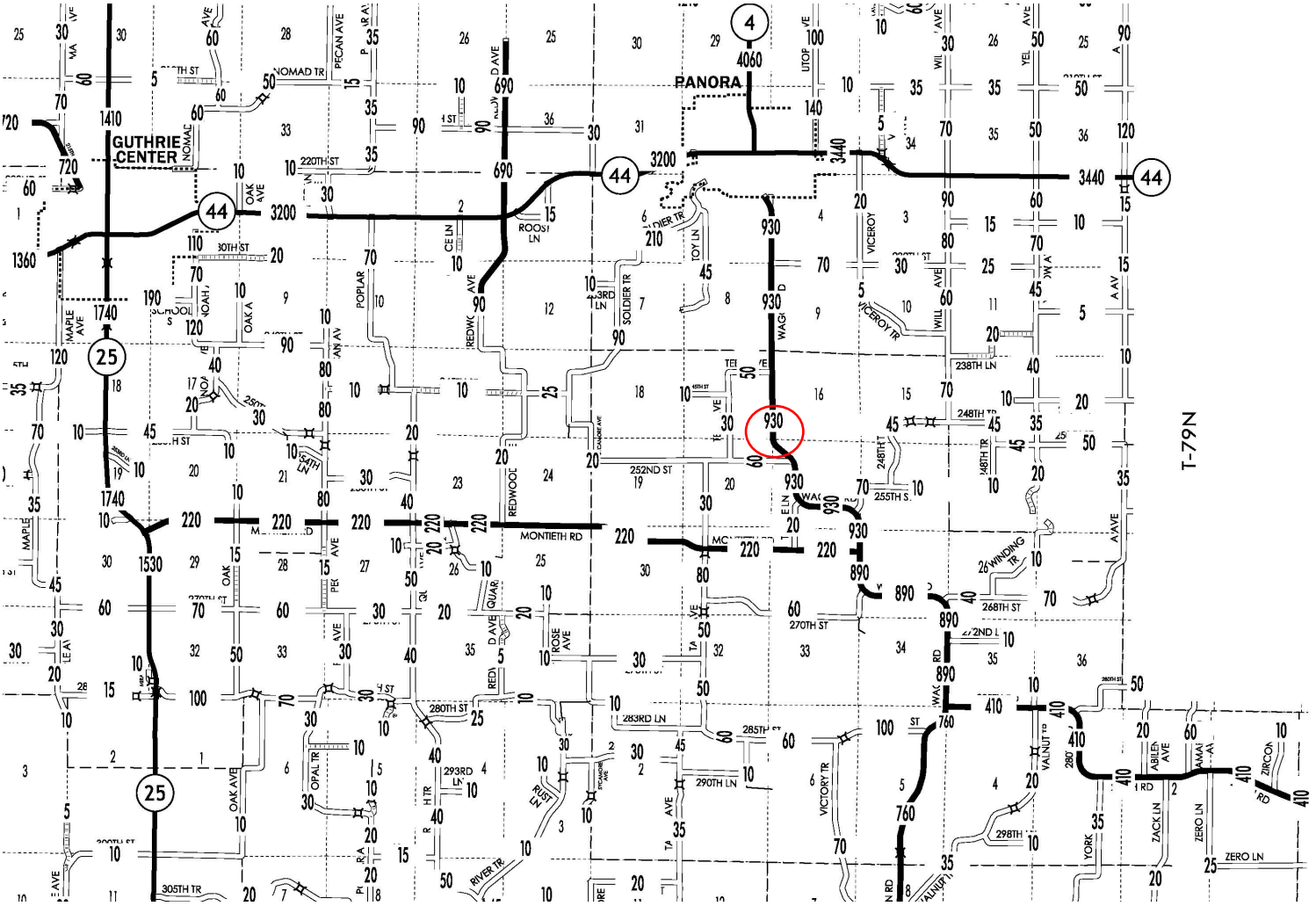
*The Proposed sign in the picture above is not an exact replica of the Advance Warning sign we are proposing in this application it is simply a example of the LED Blinker Advanced Warning Sign.

Guthrie County P28 Curve Sign Upgrade - *PLAN VIEW*



Guthrie County P28 Curve Sign Upgrade - *TRAFFIC VOLUMES*

The most recent and up to date traffic volumes for Guthrie County are from the Iowa DOT count from 2016. Guthrie County estimates that traffic volumes on the section of road in this application have increased significanly since 2016 due to rural developing along Wagon Road (P28)



Rev. 5/18

Application for TRAFFIC CONTROL DEVICE
TSIP FUNDS

GENERAL INFORMATION **DATE:** August 8, 2023

Location / Title of Project Hamilton County / Changeable Message Boards

Applicant Hamilton County Secondary Roads

Contact Person Ryan Weidemann Title County Engineer

Complete Mailing Address 2300 Superior Street, Suite #4
Webster City, IA 50595

Phone 515-832-9520 (Area Code) E-Mail rweidemann@hamiltoncounty.org

If more than one highway authority is involved in this project, please indicate and fill in the information below (use additional sheets if necessary).

Co-Applicant(s) N/A

Contact Person _____ Title _____

Complete Mailing Address _____

_____

Phone _____ (Area Code) E-Mail _____

PLEASE COMPLETE THE FOLLOWING PROJECT INFORMATION:

Funding Amount

Total Safety Cost	$ 40,150
Total Project Cost	$ 40,150
Safety Funds Requested	$ 40,150

Does this project appear on a Safety Improvement Candidate List or is there a safety study recommendation for this project?

☐ Yes – Explain _____

☒ No

APPLICATION CERTIFICATION FOR PUBLIC AGENCY

To the best of my knowledge and belief, all information included in this application is true and accurate, including the commitment of all physical and financial resources. This application has been duly authorized by the participating public agency(ies). I understand the attached resolution(s), where applicable, binds the participating public agency(ies) to assume responsibility for any additional funds, if required, to complete the project. In addition, the participating public agency(ies) agrees to maintain any new or improved public streets or roadways for a minimum of five years.

I understand that, although this information is sufficient to secure a commitment of funds, a firm contract between the applicant and the Department of Transportation is required prior to the authorization of funds.

Representing the Hamilton County

Signed: _____ 8/8/23
Signature Date Signed

Jerry Kloberdanz
Printed Name

Attest: Kim Schaa 8/8/23
Signature Date Signed

Kim Schaa
Printed Name

RESOLUTION NO. 2023-39

APPROVAL OF TRAFFIC SAFETY IMPROVEMENT PROGRAM APPLICATION FOR CHANGEABLE MESSAGE SIGNS

WHEREAS, The Iowa Department of Transportation has adopted Administrative Rule 761-Chapter 164, which created the Traffic Safety Improvement Program (TSIP) to allow funding to be provided to local jurisdictions for eligible traffic safety improvement projects; and

WHEREAS, Hamilton County has determined that providing information to the traveling public using changeable message signs at the below listed sites would enhance safety:

- Any county road used as a detour when a State route is closed due to maintenance, construction, or emergency road closure.
- Any road that requires temporary use of a changeable message signs due to detours, natural disasters, or maintenance/construction projects.
- Other related traffic incident management events within the County.

WHEREAS, the Hamilton County Engineer recommends a TSIP application be submitted to the Iowa Department of Transportation for possible safety funding of the above mentioned traffic control devices.

NOW THEREFORE BE IT RESOLVED, that the Hamilton Count Board of Supervisors,

1. Supports the application for Iowa Department of Transportation Traffic Improvement Program Funding.
2. Certifies that Hamilton County will provide continuous maintenance to these changeable message signs.
3. Authorize the Board of Supervisors Chairperson to sign application and supporting documents in relation to the TSIP funding.

Dated at Hamilton County, Iowa, this 8th day of August, 2023.

Board of Supervisors of Hamilton County, Iowa

ATTEST:

By Kim Schaa

County Auditor

COUNTY OF HAMILTON IOWA 1857

B. NARRATIVE

Hamilton County Secondary Road Department is applying for Transportation Safety Improvement (TSIP) funds for two of changeable message sign traffic signals. The primary purpose of the message sign would be warn the traveling public of upcoming work zones, changes in traffic patterns or access, or relay messages of special concern.

Hamilton County Secondary Roads is responsible for the engineering, construction, and maintenance of the county's Secondary Road System. This system includes 933 miles of rural roads, of which 215 miles are hard surfaced. Located on these roads are 106 bridges over 20 feet in length, and hundreds of smaller drainage structures.

Changeable message signs would be used at the following sites:

- Any county road used as a detour when a State route is closed due to maintenance, construction, or emergency road closure.
- Any road that require temporary use of a changeable message sign due to detours, natural disasters, or maintenance/construction projects.
- Other related traffic incident management events within the County.

The quotation from Street Smart is $36,500.00 with the freight included. The quote from Patriot is $43,265.00. These quotes include wireless functions from laptop or cell phone. Hydraulic rising included. Due to current instability in price quotations, we are requesting 10% additional funding from the low quoted price, to cover potential inflation from the time of application to the time of purchase.

Hamilton County is requesting TSIP funding for the cost of two of changeable message signs with hands-on and laptop/cell phone options included. These message boards will increase the safety of our work zones, for both the traveling public, and our Secondary Roads workers.

C. ITEMIZED BREAKDOWN OF COSTS

Below is a cost quotation from Street Smart for the PCMS-548 Hydraulic Trailer-Mounted message sign from StreetSmart.com.

Street Smart
SALES · RENTALS · SERVICE

Sale Quote

Street Smart Rentals, LLC
6811 137th Ave NE
Columbus, MN 55025

PREPARED FOR

Travis Elmore
Hamilton County Engineers Office
(515) 835-3036
telmore@hamiltoncounty.org

Quote #	Q-19345-2
Date	6/13/2023
Expires On	7/12/2023
Rep Name	Ryan Kilpatrick
Rep Phone	(612) 597-5547
Rep Email	rkilpatrick@streetsmartrental.com

Billing Address

Hamilton County Engineers Office
Hamilton County Courthouse
2300 Superior Street
Webster City, IA 50595

Shipping/Pick Up Address

Hamilton County Engineers Office
Hamilton County Courthouse 2300 Superior Street
Webster City, IA 50595

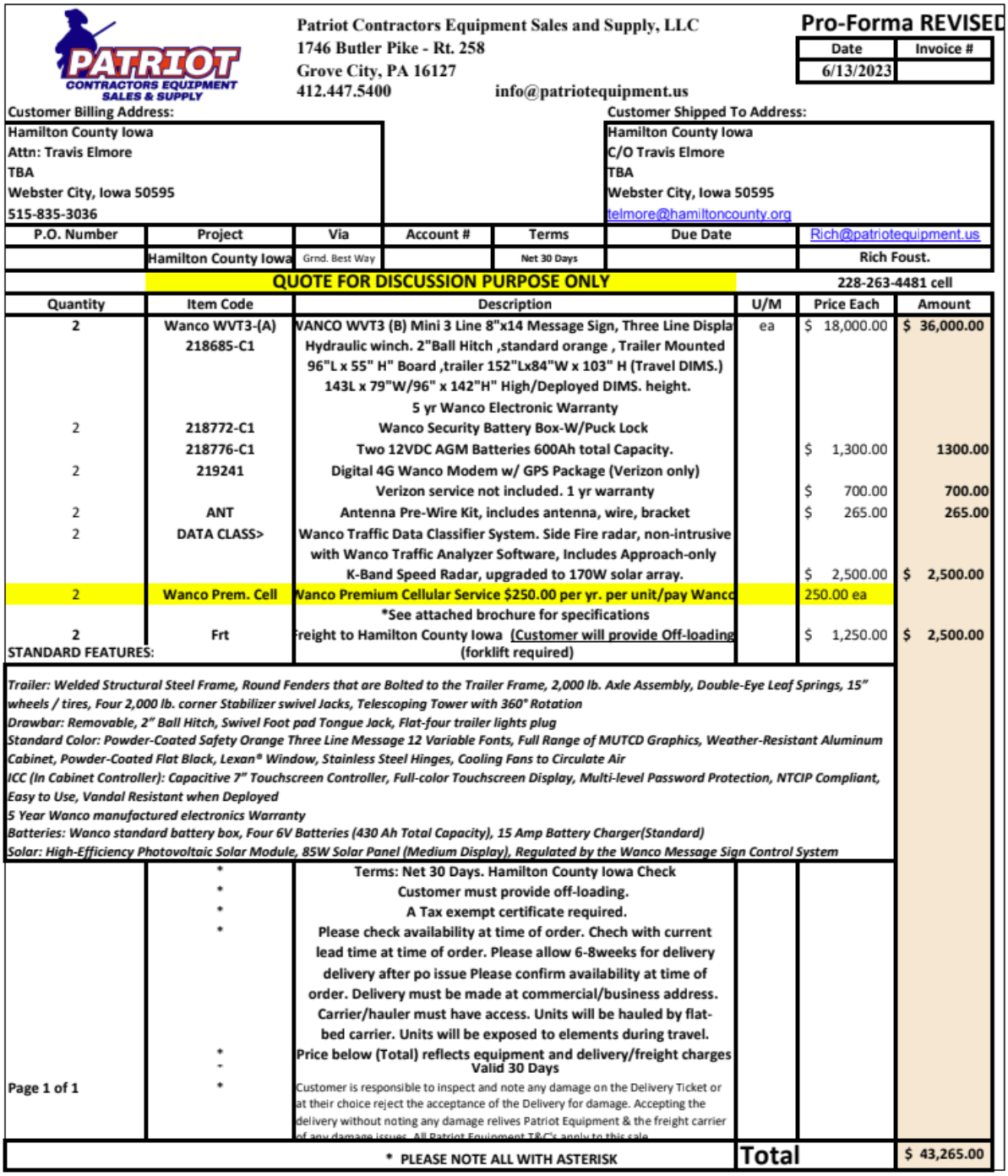
Pricing provided on this quote is valid for up to 30 days after the printed date. Thank you for your business!

PRODUCT CODE	DESCRIPTION	QTY	UNIT PRICE	TOTAL
PCMS-548/HYD	Mini Full-Matrix CMS	2	$16,500.00	$33,000.00
OPT-2-BALL	2" Ball Hitch	2	$0.00	$0.00
OPT-7-PIN-RV	7-Pin Flat RV Plug	2	$0.00	$0.00
OPT-MS-Modem	Modem for New Build CMS at Factory	2	$0.00	$0.00
OPT-MS-STEALTH CHARGER	15-Amp Charger for Stealth Batteries	2	$500.00	$1,000.00
OPT-MS-Tilt-Rotate	Tilt & Rotate	2	$500.00	$1,000.00
OPT-MS-TWJ	Tongue Wheel Jack 548/320	2	$250.00	$500.00

Subtotal*	$35,500.00
Est. Freight*	$1,000.00
Total*	$36,500.00

***Totals do not include Tax.** Taxes are applied on invoices if your account is not exempt.

Below is a cost quotation from Patriot for the Vanco WVT3 Hydraulic Trailer-Mounted message sign from Patriot.



PATRIOT CONTRACTORS EQUIPMENT SALES & SUPPLY

Patriot Contractors Equipment Sales and Supply, LLC
1746 Butler Pike - Rt. 258
Grove City, PA 16127
412.447.5400 info@patriotequipment.us

Pro-Forma REVISED

Date	Invoice #
6/13/2023	

Customer Billing Address:
Hamilton County Iowa
Attn: Travis Elmore
TBA
Webster City, Iowa 50595
515-835-3036

Customer Shipped To Address:
Hamilton County Iowa
C/O Travis Elmore
TBA
Webster City, Iowa 50595
telmore@hamiltoncounty.org

P.O. Number	Project	Via	Account #	Terms	Due Date	Rich@patriotequipment.us
	Hamilton County Iowa	Grnd. Best Way		Net 30 Days		Rich Foust.

QUOTE FOR DISCUSSION PURPOSE ONLY 228-263-4481 cell

Quantity	Item Code	Description	U/M	Price Each	Amount
2	Wanco WVT3-(A)	VANCO WVT3 (B) Mini 3 Line 8"x14 Message Sign, Three Line Displa	ea	$ 18,000.00	$ 36,000.00
	218685-C1	Hydraulic winch. 2"Ball Hitch ,standard orange , Trailer Mounted 96"L x 55" H" Board ,trailer 152"Lx84"W x 103" H (Travel DIMS.) 143L x 79"W/96" x 142"H" High/Deployed DIMS. height. 5 yr Wanco Electronic Warranty			
2	218772-C1	Wanco Security Battery Box-W/Puck Lock			
	218776-C1	Two 12VDC AGM Batteries 600Ah total Capacity.		$ 1,300.00	1300.00
2	219241	Digital 4G Wanco Modem w/ GPS Package (Verizon only)			
		Verizon service not included. 1 yr warranty		$ 700.00	700.00
2	ANT	Antenna Pre-Wire Kit, includes antenna, wire, bracket		$ 265.00	265.00
2	DATA CLASS>	Wanco Traffic Data Classifier System. Side Fire radar, non-intrusive with Wanco Traffic Analyzer Software, Includes Approach-only			
		K-Band Speed Radar, upgraded to 170W solar array.		$ 2,500.00	$ 2,500.00
2	Wanco Prem. Cell	Wanco Premium Cellular Service $250.00 per yr. per unit/pay Wanco		250.00 ea	
		*See attached brochure for specifications			
2	Frt	Freight to Hamilton County Iowa (Customer will provide Off-loading (forklift required)		$ 1,250.00	$ 2,500.00

STANDARD FEATURES:

Trailer: Welded Structural Steel Frame, Round Fenders that are Bolted to the Trailer Frame, 2,000 lb. Axle Assembly, Double-Eye Leaf Springs, 15" wheels / tires, Four 2,000 lb. corner Stabilizer swivel Jacks, Telescoping Tower with 360° Rotation
Drawbar: Removable, 2" Ball Hitch, Swivel Foot pad Tongue Jack, Flat-four trailer lights plug
Standard Color: Powder-Coated Safety Orange Three Line Message 12 Variable Fonts, Full Range of MUTCD Graphics, Weather-Resistant Aluminum Cabinet, Powder-Coated Flat Black, Lexan® Window, Stainless Steel Hinges, Cooling Fans to Circulate Air
ICC (In Cabinet Controller): Capacitive 7" Touchscreen Controller, Full-color Touchscreen Display, Multi-level Password Protection, NTCIP Compliant, Easy to Use, Vandal Resistant when Deployed
5 Year Wanco manufactured electronics Warranty
Batteries: Wanco standard battery box, Four 6V Batteries (430 Ah Total Capacity), 15 Amp Battery Charger(Standard)
Solar: High-Efficiency Photovoltaic Solar Module, 85W Solar Panel (Medium Display), Regulated by the Wanco Message Sign Control System

	*	Terms: Net 30 Days. Hamilton County Iowa Check
	*	Customer must provide off-loading.
	*	A Tax exempt certificate required.
	*	Please check availability at time of order. Chech with current lead time at time of order. Please allow 6-8weeks for delivery delivery after po issue Please confirm availability at time of order. Delivery must be made at commercial/business address. Carrier/hauler must have access. Units will be hauled by flat-bed carrier. Units will be exposed to elements during travel.
	*	Price below (Total) reflects equipment and delivery/freight charges
	*	Valid 30 Days
Page 1 of 1	*	Customer is responsible to inspect and note any damage on the Delivery Ticket or at their choice reject the acceptance of the Delivery for damage. Accepting the delivery without noting any damage relives Patriot Equipment & the freight carrier of any damage issues. All Patriot Equipment T&C's apply to this sale.

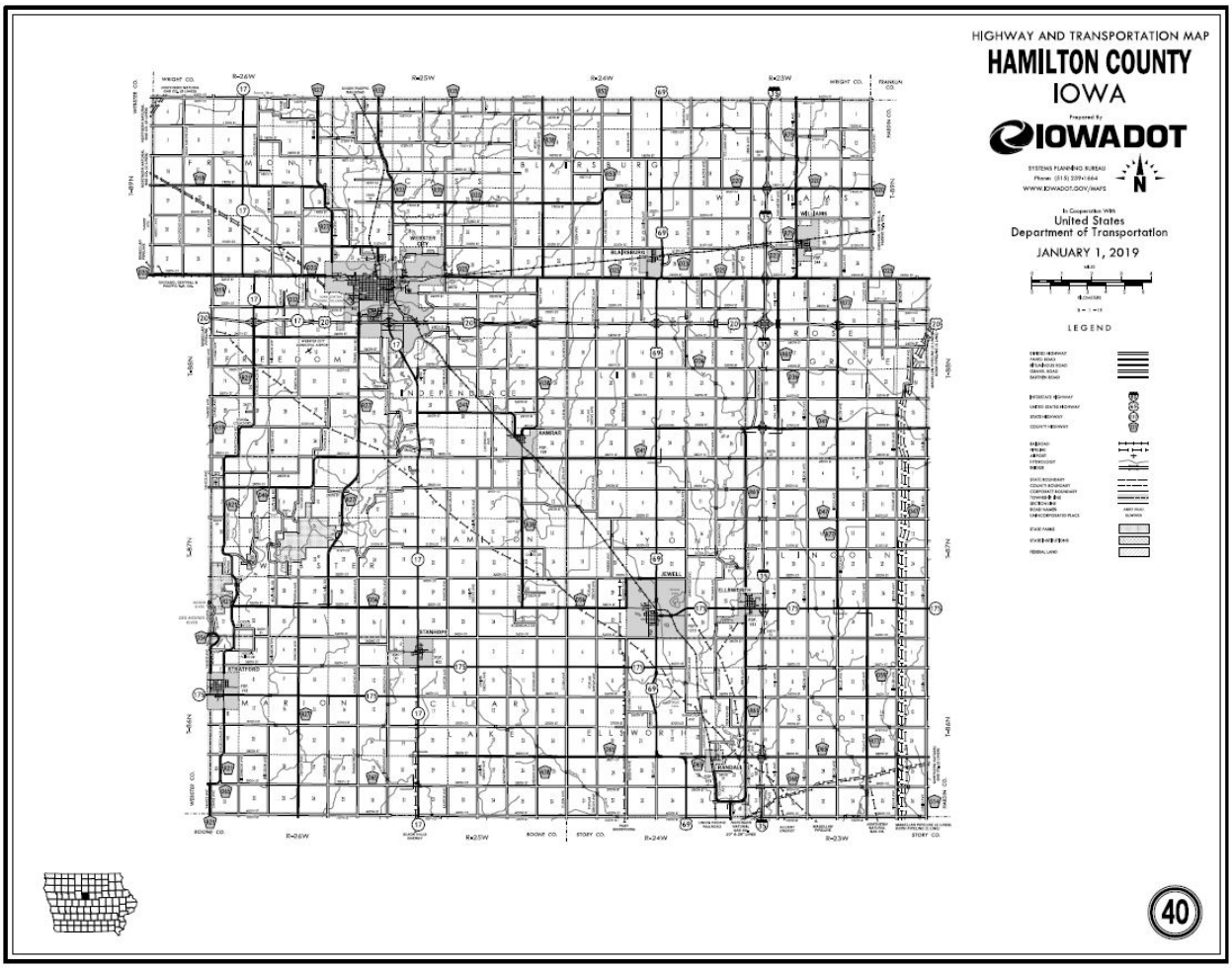
* PLEASE NOTE ALL WITH ASTERISK — **Total** $ 43,265.00

Both companies have had an 10% average increase in quotes over the last three years. We would like to include a 5% contingency for inflation.

=D. TIME SCHEDULE

- TSIP Application Due — August 15, 2023
- TSIP Award Notification — January, 2024
- TSIP Funding Available — July 1, 2024
- Purchase of Signals — July, 2024
- Implementation of Signals — August, 2024

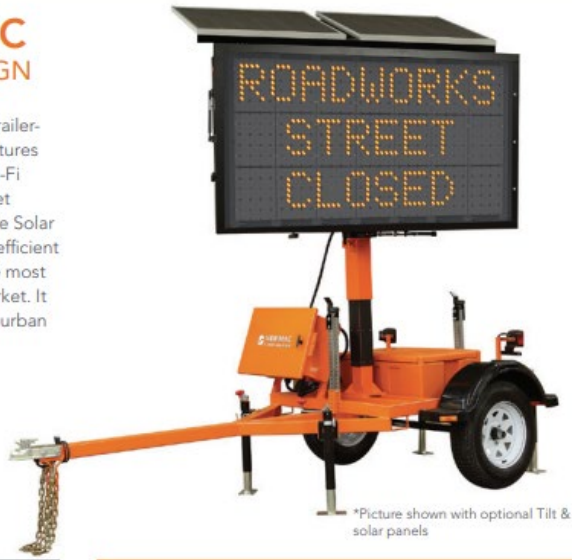
E. Map


HIGHWAY AND TRANSPORTATION MAP
HAMILTON COUNTY
IOWA
Prepared by
IOWA DOT
SYSTEMS PLANNING BUREAU
WWW.IOWADOT.GOV/MAPS
In Cooperation With
United States
Department of Transportation
JANUARY 1, 2019
LEGEND
40

F. Pictures

PCMS-548 HYDRAULIC
TRAILER-MOUNTED MESSAGE SIGN

Ver-Mac's PCMS-548 hydraulic is a mini full-matrix trailer-mounted portable changeable message sign. It features the NTCIP-compliant V-Touch Controller, V-Sync Wi-Fi Communication, Stealth Technology, JamLogic Fleet Management Software, and optional Tilt-and-Rotate Solar Panels. The PCMS-548 hydraulic combines energy-efficient design and high-quality construction to provide the most reliable and cost-effective message sign on the market. It is the perfect model for lower speed roadways and urban areas.



*Picture shown with optional Tilt & Rotate solar panels

V-TOUCH CONTROLLER

4 WAYS TO CHANGE A MESSAGE

AT THE SIGN
Using our V-Touch Controller

NEAR THE SIGN
Using our V-SYNC Wi-Fi

REMOTELY
Using JamLogic on your PC or Laptop

REMOTELY
Using JamLogic Web on your Smartphone or Tablet

PCMS-548 HYDRAULIC

JAMLOGIC® FLEET MANAGEMENT SOFTWARE

The PCMS-548 hydraulic is equipped with Ver-Mac's high-speed modem with GPS which maximizes your productivity, efficiency and profitability all remotely from your office or home! The JamLogic software is FREE and you get all the updates at no charge!

- Monitor, maintain and manage your signs from any PC, laptop, tablet or smartphone
- View your equipment in a list and GPS map view
- Change a message on one or more signs simultaneously with a simple click
- View your messages and battery voltages
- Group your signs in folders (by customer, location, project… you choose!)
- Receive e-mail or text alerts – optional (low battery cellular failure, etc.)

APPLICATIONS

- City and county (urban areas)
- School zones
- Special events

POWER SUPPLY CONFIGURATION

SOLAR PANELS
Provide maximum solar recharging during all four seasons.

- Designed to run 12 months in most regions without manual charging
- Various configurations of solar panels and batteries are available to meet your needs.

HIGH-QUALITY CONSTRUCTION

POWDER COATING SUPERIOR FINISH
Impact, humidity, salt spray and rust resistant

4 LEVELING JACKS
For stabilization and easy transportation

ELECTRO-HYDRAULIC LIFT MECHANISM
For a quick and effortless deployment

HEAVY-DUTY PLASTIC FENDERS
For durability and easy replacement

PLASTIC BATTERY BOX
To minimize battery corrosion

LOCKABLE CONTROL BOX
For security

2-IN. (51 MM) COUPLER OR 3-IN. (76 MM) PINTLE EYE
For easy towing

STEALTH TECHNOLOGY

Ver-Mac's innovative Stealth Technology design will help you significantly reduce your battery maintenance and repair costs. This technology combines two great innovations:

CLEVERLY HIDDEN BATTERY COMPARTMENT
Deter thieves from stealing batteries

LONG-LASTING SEALED BATTERIES
No maintenance required

DISPLAY

- Display panel: 45 x 80 in. (1146 x 2027 mm)
- Full matrix of 30 x 56 pixels
- 2 LEDs per pixel
- 5 x 7 pixels (8.75 in.) characters (default)
- 3 lines of 9 characters per line (default 5x7 font)
- Up to 3 lines of 12 characters per line (3 x 7 font)
- Display sign rotates 360 degrees for perfect setting
- Plug-and-play display modules for simplified maintenance

DIMENSIONS AND WEIGHTS

- Overall length: 131 in. (3338 mm)
- Overall width: 71 in. (1791 mm)
- Traveling height: 94 in. (2393 mm)
- Operating height: 164 in. (4162 mm)
- Weight (approx.): 570 kg (1255 lb.)
- Axle/suspension: 909 kg (2000 lb.)

WARRANTY

- 1 year on complete trailer
- 2 years on electronic components manufactured by Ver-Mac

OPTIONS

- Battery charger
- Tongue wheel jack
- Radar
- Data logger (requires radar)
- Tilt-and-Rotate Solar Panels
- Fixed Camera
- PTZ Camera

Other options are available to meet your needs.


LANES
CHANGE
AHEAD

G. Plan View

Iowa Department of Transportation
Office of Design

9B-8

Changeable Message Sign

Design Manual
Chapter 9
Traffic Control

Originally Issued: 09-01-95

A changeable message sign (CMS) is a traffic control device with the flexibility to display a variety of messages. Thus a CMS can be adapted to the needs of work zone traffic control as conditions change. The CMS should be used in conjunction with conventional signs, pavement markings, and lighting. CMS's have a wide variety of applications in work zones, some of which are:

- Speed control,
- Warning of road closures,
- Accident management,
- Notice of width restrictions,
- Advisories on construction scheduling,
- Advisories on traffic delays, and
- Warning of adverse conditions.

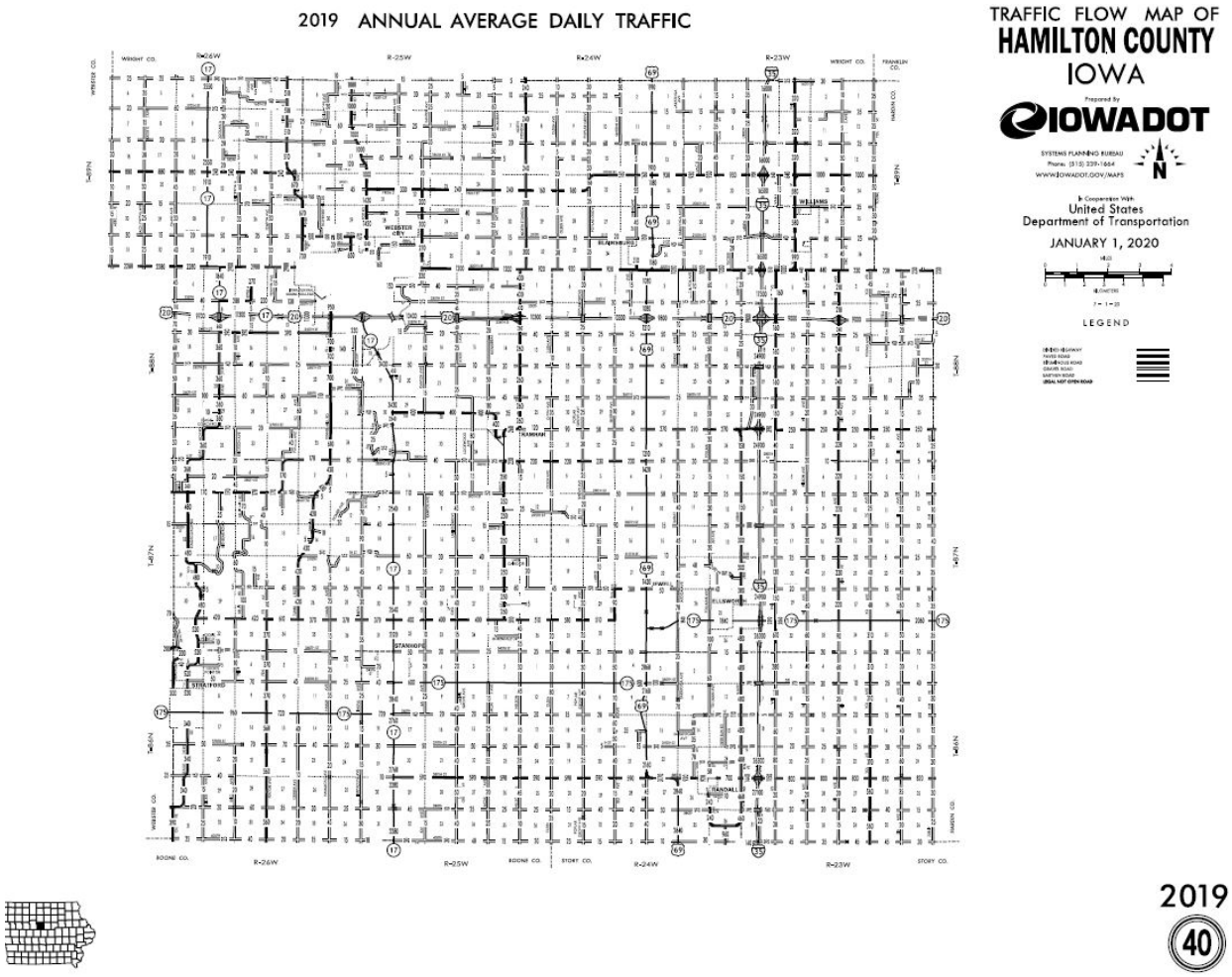
A CMS should be used only when a conventional post-mounted or skid-mounted sign would not be adequate. Frequent and prolonged use of a CMS will diminish its effectiveness.

The message panels on the CMS usually contain room for 3 lines of eight characters each. The message panel is visible from about one-half mile. Individual characters can be seen from 850 feet (260 meters) under normal conditions. Drivers need approximately one second per word to comprehend a message.

H. Aerial Photograph – N/A

I. ICAT Crash Summary– N/A

J. Traffic Volumes – See 2019 IDOT Traffic Volumes for Hamilton County



K. TRAFFIC SIGN LAYOUT – Per 9B-8, see section G.

L. BENEFIT / COST RATIO – Not required as per instructions.

Application for TRAFFIC CONTROL DEVICE
TSIP FUNDS

GENERAL INFORMATION **DATE:** June 15, 2023

Location / Title of Project Portable Rumble Strips

Applicant Hancock County Secondary Roads

Contact Person Jeremy Purvis, P.E. Title County Engineer

Complete Mailing Address 855 State Street

Garner, IA 50438

Phone 641-923-2243 E-Mail jeremy.purvis@hancockcountyia.org
(Area Code)

If more than one highway authority is involved in this project, please indicate, and fill in the information below (use additional sheets if necessary).

Co-Applicant(s) _____

Contact Person _____ Title _____

Complete Mailing Address _____

_____

Phone _____ E-Mail _____
(Area Code)

PLEASE COMPLETE THE FOLLOWING PROJECT INFORMATION:

Funding Amount

Total Safety Cost	$ 13,596
Total Project Cost	$ 13,596
Safety Funds Requested	$ 13,596

Does this project appear on a Safety Improvement Candidate List or is there a safety study recommendation for this project?

☐ Yes – Explain _____

☒ No

APPLICATION CERTIFICATION FOR PUBLIC AGENCY

To the best of my knowledge and belief, all information included in this application is true and accurate, including the commitment of all physical and financial resources. This application has been duly authorized by the participating public agency(ies). I understand the attached resolution(s), where applicable, binds the participating public agency(ies) to assume responsibility for any additional funds, if required, to complete the project. In addition, the participating public agency(ies) agrees to maintain any new or improved public streets or roadways for a minimum of five years.

I understand that, although this information is sufficient to secure a commitment of funds, a firm contract between the applicant and the Department of Transportation is required prior to the authorization of funds.

Representing the Hancock County Secondary Roads Department

Signed: _____ 6-12-23
Signature Date Signed

Jeremy Purvis
Printed Name

Attest: _____ 6-12-23
Signature Date Signed

Shawn Hackman
Printed Name

A. RESOLUTION

RESOLUTION NO. 2023-027

APPROVAL OF TRANSPORTATION SAFETY IMPROVEMENT PROGRAM
APPLICATION FOR TRAFFIC CONTROL DEVICES

WHEREAS, the Iowa Department of Transportation has adopted Administrative Rule 761 - Chapter 164, which created the Traffic Safety Improvement Program (TSIP) to allow for funding to be provided to local jurisdictions for eligible traffic safety improvement projects; and

WHEREAS, Hancock County has determined that providing portable rumble strips for use during maintenance activities will aid in improving safety for flaggers, maintenance workers, and the traveling public in road work zones; and

WHEREAS, rumble strips are recognized traffic control devices in the Manual on Uniform Traffic Control Devices, 2009 Edition; and

WHEREAS, the Hancock County Engineer recommends a TSIP application be submitted to the Iowa Department of Transportation for possible safety funding of the above-mentioned traffic control devices.

IT IS THEREFORE RESOLVED by the Hancock County Board of Supervisors to endorse the above-mentioned project and hereby commits to accepting and maintaining these portable rumble strips;

BE IT FURTHER RESOLVED that the Chairperson of the Hancock County Board of Supervisors authorize and direct the County Engineer to submit the said funding application to the Iowa Department of Transportation for possible Traffic Safety Improvement Funding.

Passed and approved this 12th **day of** June **, 2023.**

Hancock County Board of Supervisors

Jerry Tlach

Gary Rayhons

ATTEST:

Michelle K. Eisenman, Auditor

Florence "Sis" Greiman, Chair

B. NARRATIVE

Hancock County is applying for Traffic Safety Improvement Program (TSIP) funds to be used for the purchase of portable rumble strips. TSIP funds are being sought to aid in improving safety in our roadwork zones. The portable rumble strips will be used in conjunction with our temporary traffic signals, and with flagger lane closures in work zones to help improve safety for our maintenance personnel. The traveling public will also move through the work zone safely as the portable rumble strips will alert drivers of the upcoming zone, and potentially reduce their speeds driving through it.

Hancock County maintain 1,012 miles of roads with 253 miles paved and they maintain 126 bridges. The traffic volumes on the paved road system ranges from 70 AADT to 2,290 AADT. The main methods of traffic control through work zones are flaggers and pilot car, temporary traffic signals, detour routes, or full road closures. All of which present safety risks to maintenance staff, traveling public, or both.

The portable rumble strips will conform to Iowa DOT Materials IM 488.07 and be used according to Iowa DOT Road Standard TC-213 or TC-218. Their primary use will be to aid in traffic control on the paved road system and will aid in improving safety for maintenance staff and the traveling public.

C. ITEMIZED BREAKDOWN OF ALL COSTS

IOWA PLAINS SIGNING, INC.

1110 W. 6TH AVENUE (HWY. 210W)
P.O. BOX 654
SLATER, IOWA 50244-0654

TELEPHONE: (515) 685-3536
FAX: (515) 685-3530

Quote For:
Type of Sale: Portable Rumble Strips
Quote Date:

Att.
Phone
Fax #

Bid Item #	Description	Quantity	Units	Per Unit	Total
~~1~~	~~Rental of a Set Portable Rumble Strips~~ 1 Set Consist of 6 Rumble Strips	~~1~~	~~Per Week~~	~~$ 300.00~~	~~$ 300.00~~
~~2~~	~~Rental of a Set Portable Rumble Strips~~ 1 Set Consist of 6 Rumble Strips	~~1~~	~~Per Year~~	~~$ 5,500.00~~	~~$ 5,500.00~~
3	New Portable Rumble Strips 1 Set Consist of 6 Rumble Strips	6	Ea	$ 2,010.00	$ 12,060.00
4	48" x 48" "Rumble Strip Ahead" Roll-Up Signs(Signs Only)	2	Ea	$ 150.00	$ 300.00

Total:	$12,360.00
Contingency (10%):	$1,236.00
Total Amount Requested:	$13,596.00

Conditions or Notes:

Rental Rumble Strip price is picked up and delivered back to Iowa Plains Slater Iowa. New Rumble Strips will take 2 weeks ARO. Any and All damage to Rumble Strips will be billed to the customer.

_____ **Date**

_____ **Signature**

Derek Riley
Cell (515) 360-6729

_____ **Date**

_____ **Acceptance Signature**

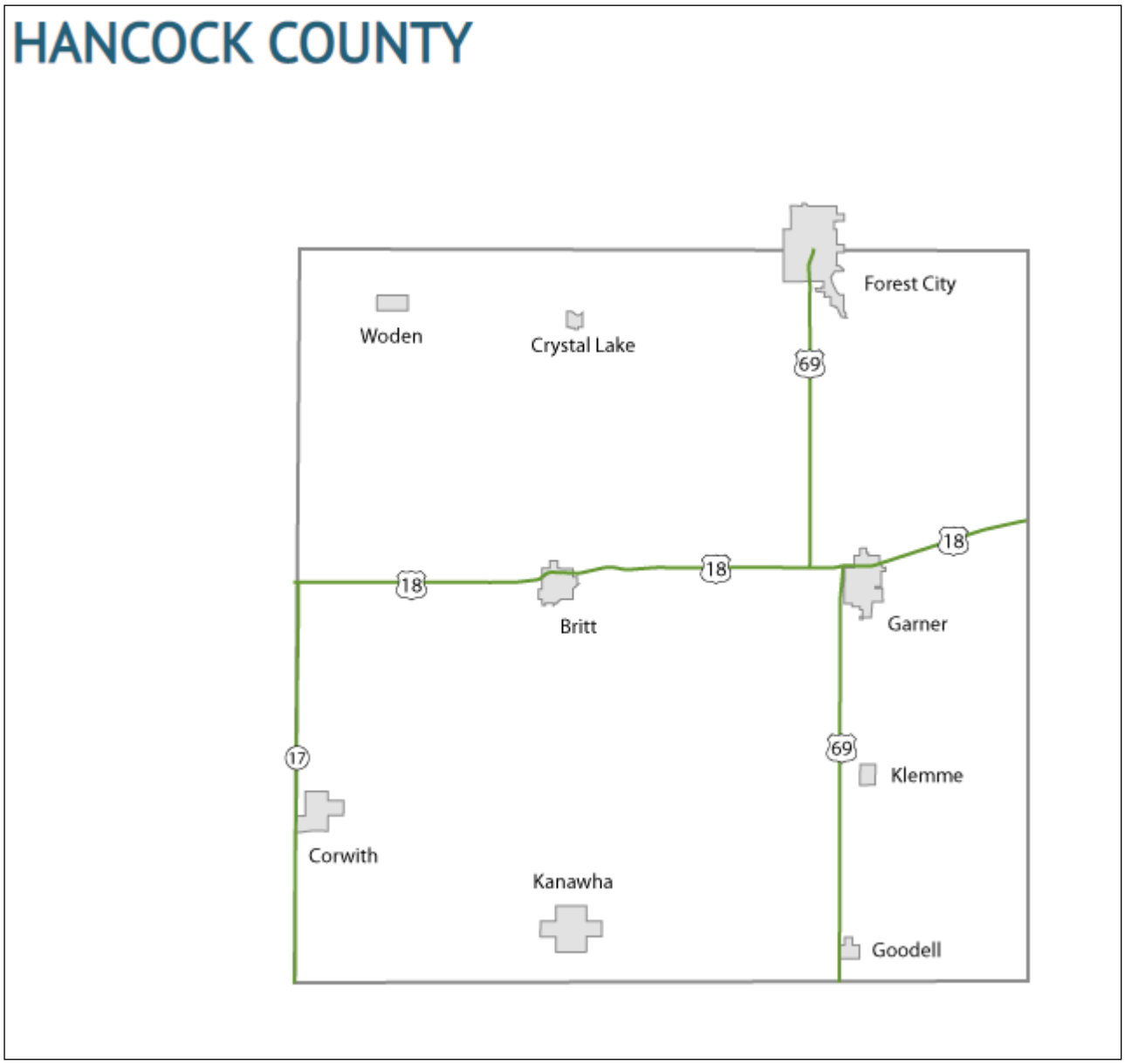
D. TIME SCHEDULE

TSIP Application Due	August 2024
TSIP Award Notification	January 2024
TSIP Funding Available	July 2024
Purchase & Use of Portable Rumble Strips	July 2024

E. MAP

See Iowa DOT maps for the latest data (link below).

https://iowadot.gov/maps/msp/pdf/hancock-co.pdf



F. COLOR PICTURES

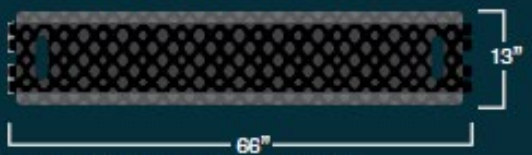
PSS
Innovations for Safety®

2444 Baldwin Road, Cleveland, OH 44104
800.662.6338 | PSS-Innovations.com

ROADQUAKE® 2F
TEMPORARY PORTABLE RUMBLE STRIPS

ROADQUAKE® 2F TPRS BENEFITS:

Designed to reduce accidents and save lives, RoadQuake 2F TPRS alerts distracted drivers to changing road conditions like work zones and checkpoints.



Showing RoadQuake 2F TPRS (1/2 Strip Shown)

TEMPORARY:

- Ideal for work zones where daily installation and removal is required.
- Quick installation and removal. No cleanup required.
- Does not require glue or fastners

PORTABLE:

- Transport RoadQuake® 2F TPRS with handling equipment like RoadQuake® CRIB® Carrier or RAPTOR® Rumble Strip Handling Machine.
- Manually deploy and retrieve by a two-person crew.

DURABLE:

- 3-5 year life under normal conditions.
- Suitable for use in the rain and in temperatures as low as 0° F and as high as 180°F.
- For use in posted speed limits up to 80 MPH.
- 3 year limited warranty

US Patent No. 7,736,087. Other Patents Pending

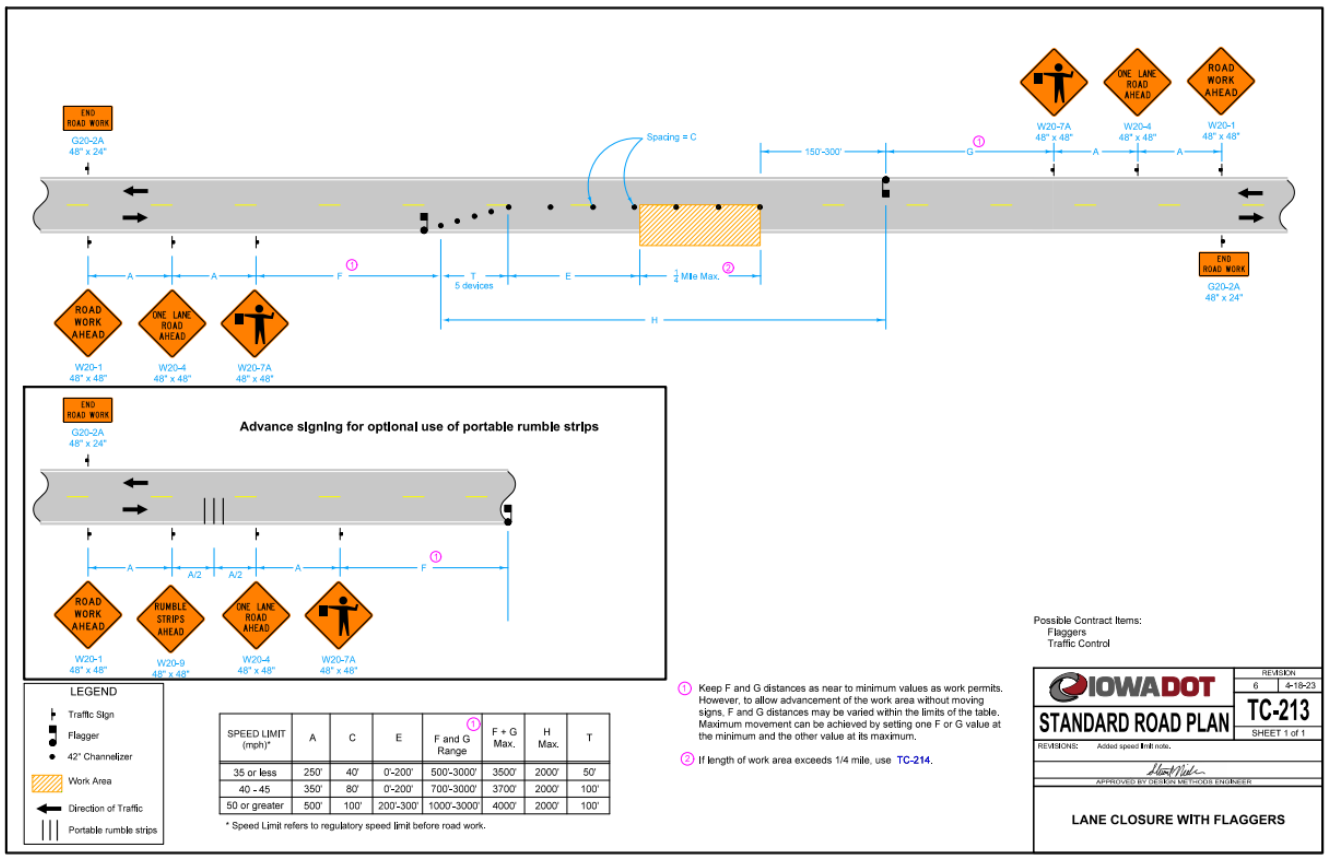
ROADQUAKE 2F TPRS FEATURES:

- RoadQuake 2F generates the same level of sound and vibration as milled strips.
- 13" W x 3/4" H x 132" L when unfolded. Covers the width of an entire lane.
- Folds to a compact 66" length. Weighs 105 lbs.
- Ergonomic handles make installation and storage easy. The non-slip textured surface helps to keep RoadQuake 2F TPRS in place.
- Bevels on both sides of RoadQuake take the guesswork out of a correct installation.
- Meets Section 6F.87 of the MUTCD, 2009 Edition.

G. PLAN VIEW

See Iowa DOT Standard Road Plan TC-213 and TC-218 (link below) with optional use of portable rumble strips.

https://www.iowadot.gov/erl/current/RS/content_eng/tc213.pdf
https://www.iowadot.gov/erl/current/RS/content_eng/tc218.pdf



SPEED LIMIT (mph)*	A	C	E	F and G Range ①	F + G Max.	H Max.	T
35 or less	250'	40'	0'-200'	500'-3000'	3500'	2000'	50'
40 - 45	350'	80'	0'-200'	700'-3000'	3700'	2000'	100'
50 or greater	500'	100'	200'-300'	1000'-3000'	4000'	2000'	100'

* Speed Limit refers to regulatory speed limit before road work.

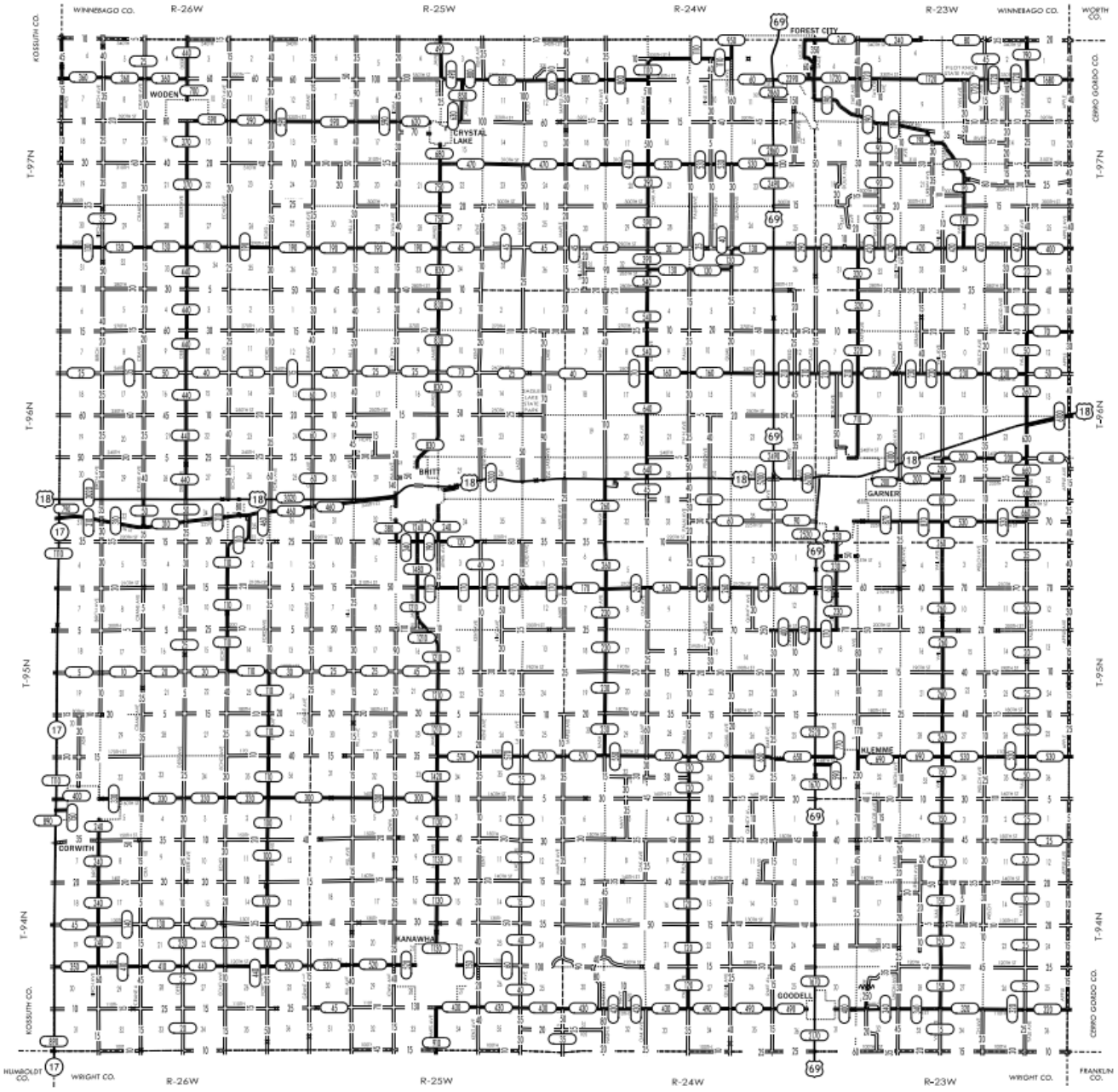
① Keep F and G distances as near to minimum values as work permits. However, to allow advancement of the work area without moving signs, F and G distances may be varied within the limits of the table. Maximum movement can be achieved by setting one F or G value at the minimum and the other value at its maximum.

② If length of work area exceeds 1/4 mile, use TC-214.

H. TRAFFIC VOLUMES

See Iowa DOT transportation data for the latest data (link below).

https://iowadot.gov/maps/msp/traffic/2019/counties/HANCOCK.pdf



Application for TRAFFIC CONTROL DEVICE
TSIP FUNDS

GENERAL INFORMATION **DATE:** June 15, 2023

Location / Title of Project B16 & R44 Intersection / Solar Flashing Beacons

Applicant Hancock County Secondary Roads

Contact Person Jeremy Purvis, P.E. Title County Engineer

Complete Mailing Address 855 State Street

Garner, IA 50438

Phone 641-923-2243 E-Mail jeremy.purvis@hancockcountyia.org
(Area Code)

If more than one highway authority is involved in this project, please indicate, and fill in the information below (use additional sheets if necessary).

Co-Applicant(s) _____

Contact Person _____ Title _____

Complete Mailing Address _____

_____

Phone _____ E-Mail _____
(Area Code)

PLEASE COMPLETE THE FOLLOWING PROJECT INFORMATION:

Funding Amount

Total Safety Cost	$ 25,141
Total Project Cost	$ 25,141
Safety Funds Requested	$ 25,141

Does this project appear on a Safety Improvement Candidate List or is there a safety study recommendation for this project?

☒Yes – Explain _TEAP study completed by Snyder & Associates October 2022_____

☐No

APPLICATION CERTIFICATION FOR PUBLIC AGENCY

To the best of my knowledge and belief, all information included in this application is true and accurate, including the commitment of all physical and financial resources. This application has been duly authorized by the participating public agency(ies). I understand the attached resolution(s), where applicable, binds the participating public agency(ies) to assume responsibility for any additional funds, if required, to complete the project. In addition, the participating public agency(ies) agrees to maintain any new or improved public streets or roadways for a minimum of five years.

I understand that, although this information is sufficient to secure a commitment of funds, a firm contract between the applicant and the Department of Transportation is required prior to the authorization of funds.

Representing the Hancock County Secondary Roads Department

Signed: _____ 6-12-23
Signature Date Signed

Jeremy Purvis
Printed Name

Attest: _____ 6-12-23
Signature Date Signed

Shawn Hackman
Printed Name

A. RESOLUTION

RESOLUTION NO. 2023-026

APPROVAL OF TRANSPORTATION SAFETY IMPROVEMENT PROGRAM
APPLICATION FOR TRAFFIC CONTROL DEVICES

WHEREAS, the Iowa Department of Transportation has adopted Administrative Rule 761 - Chapter 164, which created the Traffic Safety Improvement Program (TSIP) to allow for funding to be provided to local jurisdictions for eligible traffic safety improvement projects; and

WHEREAS, a study conducted at the intersection of Oak Avenue (R44) and 310th Street (B16) has determined that the installation of new flashing beacon traffic control devices will improve the safety of the traveling public; and

WHEREAS, flashing beacons are recognized traffic control devices in the Manual on Uniform Traffic Control Devices, 2009 Edition; and

WHEREAS, the Hancock County Engineer recommends a TSIP application be submitted to the Iowa Department of Transportation for possible safety funding of the above-mentioned traffic control devices.

IT IS THEREFORE RESOLVED by the Hancock County Board of Supervisors to endorse the above-mentioned project and hereby commits to accepting and maintaining these flashing beacons;

BE IT FURTHER RESOLVED that the Chairperson of the Hancock County Board of Supervisors authorize and direct the County Engineer to submit the said funding application to the Iowa Department of Transportation for possible Traffic Safety Improvement Funding.

Passed and approved this 12th **day of** June, **2023.**

Hancock County Board of Supervisors

Jerry Mach

Gary Rayhons

ATTEST:

Deputy Auditor
Michelle K. Eisenman, Auditor

Florence "Sis" Greiman, Chair

B. NARRATIVE

Hancock County is seeking to improve the safety and traffic operation of the intersection of Oak Ave (R44) and 310th Street (B16). The Iowa Department of Transportation recently completed a traffic and safety study through the Traffic Engineering Assistance Program (TEAP) for the intersection, and Hancock County wishes to implement the recommendations from the study. A copy of the study is attached with this TSIP application. This intersection has the highest ranking for a county road intersection in Hancock County on the Iowa DOT's Potential for Crash Reduction (PCR) site, with two fatal crashes in the last 10 years of crash history.

Both roadways are 2-lane rural cross section roadways with gravel shoulders that range in width from 2'-4'. 310th St has a federal functional classification as a major collector and Oak Ave is a major collector south of the intersection and a local roadway north of the intersection. There are no dedicated turn lanes at the study intersection. The posted speed limit through the study intersection is 55 mph.

The intersection is controlled by stop signs on the Oak Ave approaches. Both stopped approaches have three rumble strip panels on the approach, a 30" stop ahead warning sign (SB is a word message sign and NB is a symbol sign), intersecting county route marker junction assembly, a destination sign on the northbound approach, and 36" stop signs on the right side of the road. The stop signs have "Cross Traffic Does Not Stop" plaques and red reflective strips on the signposts. There is a destination streetlight in the southeast corner of the intersection.

The north leg of Oak Ave serves as a connection to the industrial area on the south side of Forest City which is located to the northeast of the intersection. The industrial area is approximately 5 miles north and east of the intersection.

CRASH HISTORY

Reviewing the Iowa DOT PCR website for 2016-2020, the intersection is currently classified as a negligible PCR level intersection (PCR between 0 and 0.2) which means it is "performing better than expected". For all crash types, the intersection is ranked 385 of 27,975 (1.4 percent) of "Undivided High-Speed Partial Stop Control" intersections statewide. The higher the intersection rank, the worse the safety performance when compared to similar intersections across the state.

While the intersection is considered to be performing better than expected, the crash record shows moderate activity. 10 years of crash data was reviewed because of the lower volume of traffic and crashes. Over the 10-year period starting in 2012, there have been 6 recorded crashes at and in advance of the study intersection. Two of the six crashes were fatalities, one in May 2014 and the other in December 2020. Five of the six collisions were right angle collisions, four involved southbound vehicles and four involved westbound vehicles. The two fatal crashes involved southbound vehicles, one with a westbound vehicle and the other with an eastbound vehicle. Five of the six crashes were the result of a driver running the stop sign (3) or failure to yield the right of way from a stop sign (2).

Table 1. Study Intersection Crash Summary (2012 - 2021)

Crashes (Injuries)	Crash Severity (Injuries)	Crash Types (# Crashes)	Major Causes (# Crashes)
6 (9)	2 – Fatal (3) 1 – Suspected (2 serious, 2 minor) 2 – Possible (1) 1 – PDO*	· Broadside (5) · Non-collision (1) · Unknown (1)	· Ran stop sign (3) · FTYROW*: From stop sign (2) · Driving too fast for conditions (1)

*Property Damage Only/Failure to Yield Right of Way

CONCLUSIONS/RECOMMENDATIONS

Maintaining the existing two-way stop control is recommended as the intersection traffic volumes did not satisfy the MUTCD criteria for all-way stop control. In addition, the following low-cost improvements are recommended for consideration:

• 310th Street:

- Install oversized (36") advance intersection warning signs, fluorescent yellow sign sheeting and retroreflective strips installed on the posts on both the left and right side of the roadway. A "Oak Avenue" street name plaque should be installed below the warning sign.
- Extend the edge line pavement markings through the intersection using a dotted line.
- Consider adding directional guide signs to both approaches to provide additional awareness of the intersection.
- Additional countermeasure to consider – install red metal flags on top of the warning signs, or yellow flashing beacons above the signs.

• Oak Avenue:

- Install oversized (36") advance traffic control sign, stop ahead symbol, on both the left and right side of the roadway. The sign should be fluorescent yellow with fluorescent yellow retroreflective strips installed on the posts.
- Install a second STOP sign with "Cross Traffic Does Not Stop" plaque and retroreflective post on the left side of the road. Replace the damaged STOP sign.
- Existing signs are already oversized at 36", could be further oversized to 48".
- Re-apply the stop lines on both approaches.
- Replace the existing rumble strips with Portland cement concrete (PCC) patches/rumble strips. The PCC rumble strips hold up better to traffic than those placed in the hot-mix asphalt.
- Consider adding directional guide signs to the southbound approach to provide additional awareness of the intersection.
- Additional countermeasure to consider – install red metal flags on top of the STOP signs, or red flashing beacons above the signs.

Following installation of the low-cost improvements at the intersection, continued monitoring of the intersection should be accomplished. If safety concerns continue, additional countermeasures can be implemented, or an all-way stop control could be installed if the above recommendations do not adequately address the safety concerns.

Hancock County is seeking TSIP funding to install red flashing solar beacons above stop signs on Oak Ave (R44), and yellow flashing solar beacons above intersection warning signs on 310th Street (B16).

C. ITEMIZED BREAKDOWN OF ALL COSTS

mobotrex™
MOBILITY & TRAFFIC EXPERTS

Quote

Quote Number: 1918503

109 West 55th Street | Davenport, IA 52806 | (563) 323-0009

Date: 11/03/2022
Expire Date: 12/3/2022
Prepared By: Zank, Justin D.

Customer: CONTRR4
Contractor Quote - Region 4
General Delivery
Davenport IA 52806-9999
United States

Description: Hancock County Engineer / Jeremy Purvis / jeremy.purvis@hancockcountyia.org

Part #	Description	Quantity	Price	Extended
R247-E	24-Hour Beacons	8	$2,857.00	$22,856.00
PMR09288-005	ENGINE:SOLAR (R247-E),PNC	8	$0.00	$0.00
PMR10679-001	TOP MT:2-2.5"SQ,2.38-2.88"OD,ROUND,PNC	8	$0.00	$0.00
CAR-67620	BATTERY:7A/HR,STAND,(E SERIES)	16	$0.00	$0.00
PMR10286-002	LED MOD:12",YLW	4	$0.00	$0.00
PMR10286-001	LED MOD:12",RED	4	$0.00	$0.00
PMR09044-002	SIG-HEAD:12",POLY,VISR,STIFF PLT,BLK	8	$0.00	$0.00
PBW10287-002	MOD HARNESS:4',LED,(INTEGRATED HEAD)	8	$0.00	$0.00

Sale Amount:	**$22,856.00**
~~Sales Tax:~~	~~1,599.92~~
~~Misc Charges:~~	~~0.00~~
~~**Total Amount:**~~	~~**$24,455.92**~~
Contingency (10%):	$2,285.00
Total Amount Requested:	$25,141.00

Terms:

THIS QUOTE IS BASED ON THE ENTIRE VALUE AND VOLUME OF ALL LINE ITEMS - Prices listed on this quote are valid only in the event of purchase of all line items in the quantities listed, in their entirety. Purchases of individual line items will require a new quote prior to acceptance of any purchase orders.

Shipment of the material will be approximately 90 days after receipt of both an acceptable purchase order and approved submittal data if required. PAYMENT TERMS ARE NET 30 DAYS with prior approved credit. MoboTrex, Inc. retains title to material until paid in full. A service charge of 1.5% per month (18% annual rate) will be assessed against all past due accounts. Prices and delivery quoted are firm for 30 days from the data of bid. The above quote does not include installation of the products quoted. On-Site technical assistance is available and will be quoted upon request.

Quotation does not include sales tax. Sales tax will be added at time of invoice unless a valid Sales Tax Exempt certificate has been provided. Sales tax exempt certificate should accompany customer Purchase Order.

Limited Warranty: MoboTrex, Inc. only obligations shall be to replace such quantity of the product proven to be defective.

Warranty Period: The length of warranty manufacturers have conveyed to the seller and which can be passed on to the buyer.

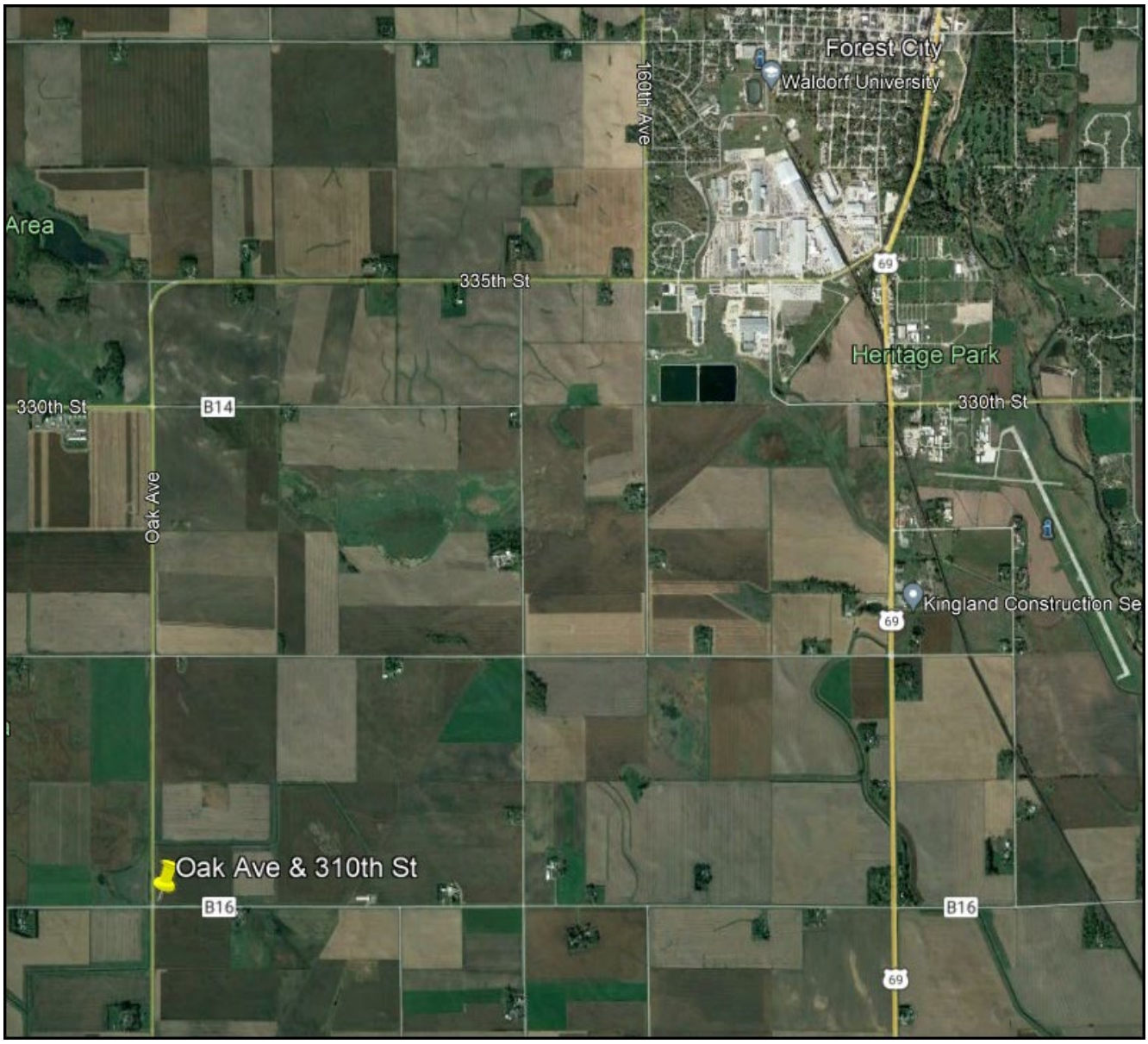
Additional terms and conditions apply - See MoboTrex, Inc. Terms & Conditions document at our website: www.mobotrex.com.

Thank you for the opportunity to provide this quote.

D. TIME SCHEDULE

TSIP Application Due	August 2024
TSIP Award Notification	January 2024
TSIP Funding Available	July 2024
Purchase Flashing Solar Beacons	July 2024
Improvement Installation Begins	August 2024
Improvement Installation Completed	November 2024

E. MAP


Forest City
Waldorf University
160th Ave
Area
335th St
69
Heritage Park
330th St
B14
330th St
Oak Ave
Kingland Construction Se
69
Oak Ave & 310th St
B16
B16
69

F. COLOR PICTURES OF THE PROJECT SITE

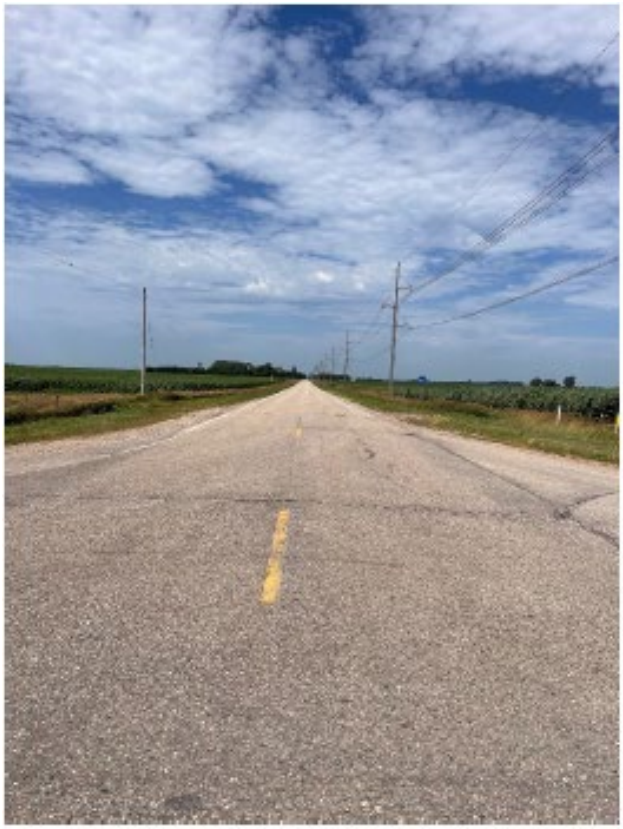


Photo 1. West approach, looking west.

Photo 2. West approach, looking east

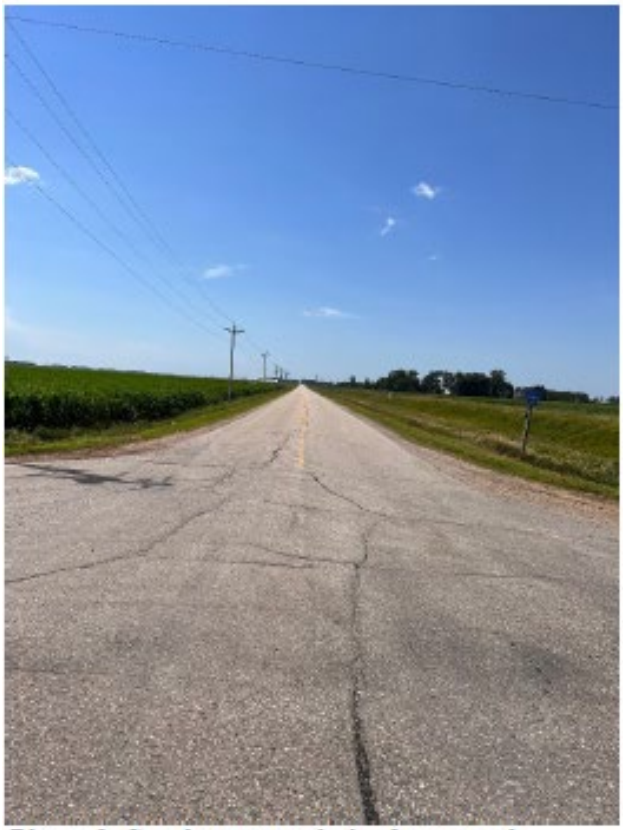


Photo 3. South approach, looking south.

Photo 4. South approach, looking north

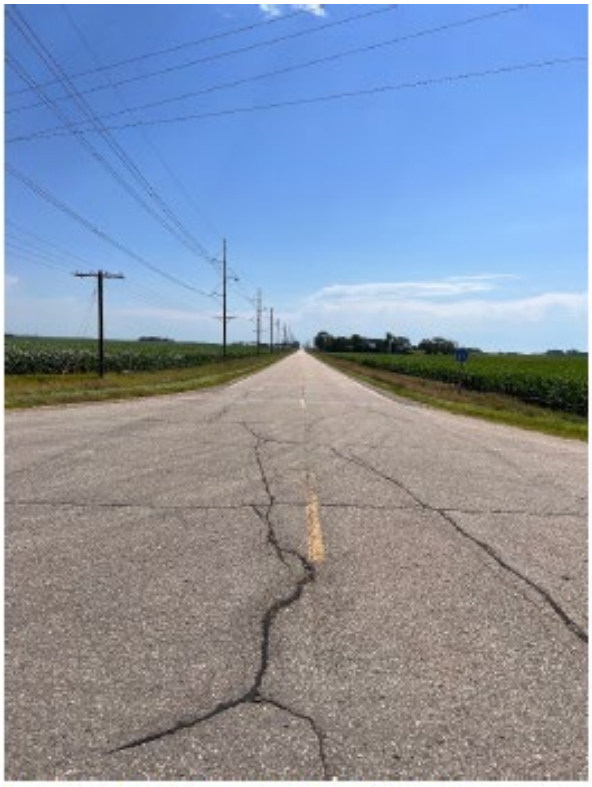


Photo 5. East approach, looking east.

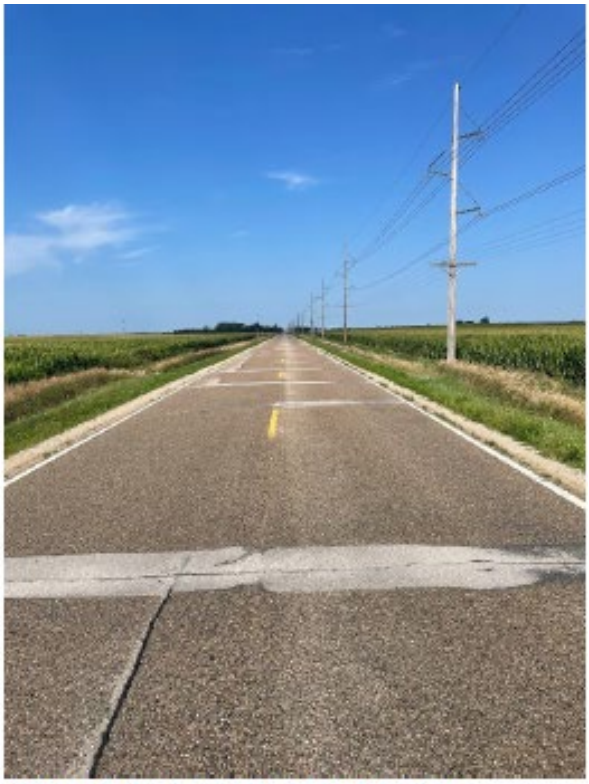


Photo 6. East approach, looking west.

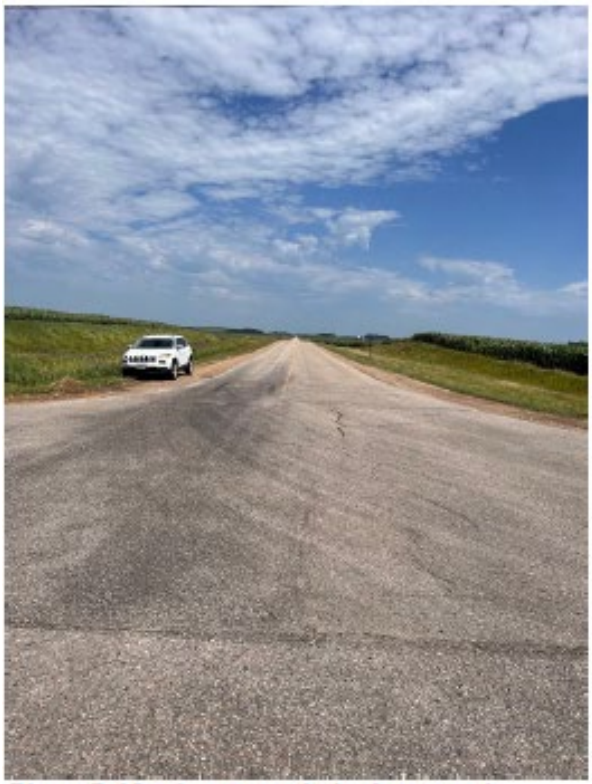


Photo 7. North approach, looking north.

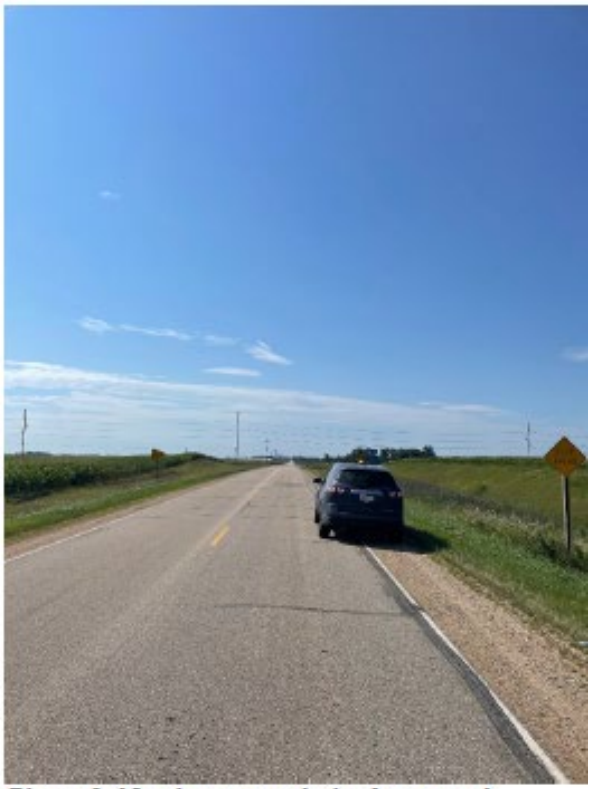
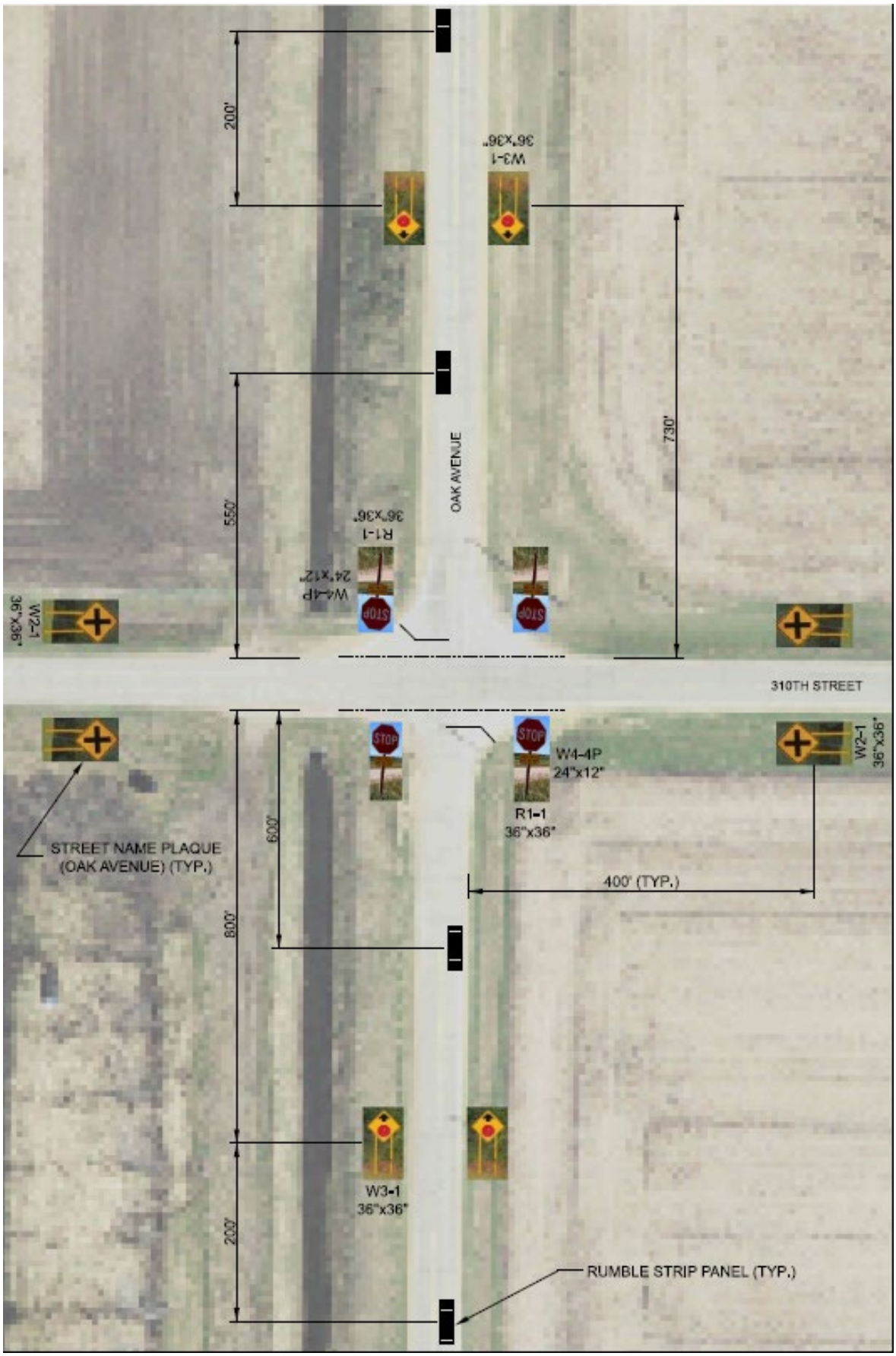


Photo 8. North approach, looking south.

North leg looking South (Expanded View)

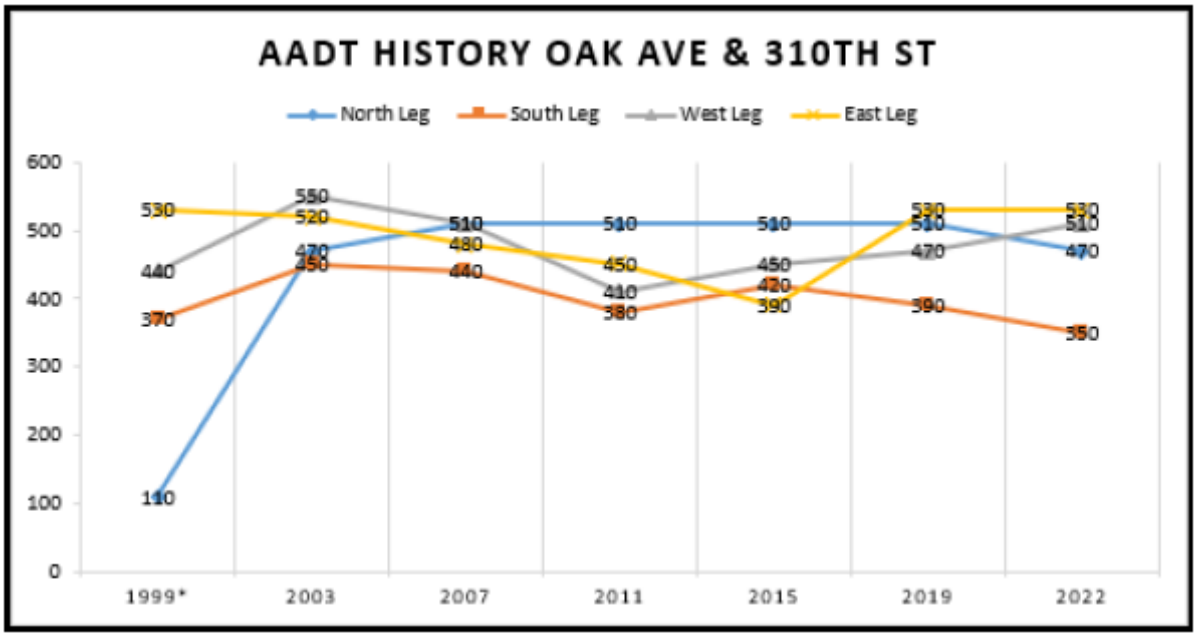
G. PLAN VIEW: PROPOSED



H. TRAFFIC VOLUMES AND TURNING MOVEMENTS

The 1999 - 2022 annual average daily traffic (AADT) traffic counts for the study intersection as reported by the Iowa DOT (1999 – 2019 volumes) and Snyder & Associates (2022 volumes) are included in Figure 2. As shown below, traffic for the Iowa DOT counts from 1999 - 2019 show stable traffic volumes, with little growth on the north/south approach legs and significant recent growth on the east/west approaches.

Figure 2: AADT History



*The north approach of Oak Avenue was gravel in 1999.

Intersection turning movement counts were collected by Snyder & Associates on July 20, 2022, for 24 hours and are included in the appendix of the TEAP study. The counts were factored using the Iowa DOT 2021 expansion factors for secondary roads to determine the 2022 AADT for the intersection approaches shown in Figure 2.

The 2022 Snyder & Associates counts include approximately 13% trucks/heavy vehicles entering the intersection through the day. A high percentage of trucks are southbound (22%) with trucks making 54% of the left turns (36 trucks in the 24-hour period). The westbound approach has similar numbers, 16% trucks with trucks making 55% of the right turns (36 trucks in the 24-hour period).

TRAFFIC ENGINEERING ASSISTANCE PROGRAM

Oak Ave/Co Rd R44 & 310th St/Co Rd B16 Intersection Study

.

Prepared for:

Hancock County

In Cooperation With:

Iowa Department of Transportation

October 14, 2022

IOWA DOT

SNYDER & ASSOCIATES

IOWA | MISSOURI | NEBRASKA | SOUTH DAKOTA | WISCONSIN

INFORMATION SHEET
IOWA DEPARTMENT OF TRANSPORTATION
TRAFFIC ENGINEERING ASSISTANCE PROGRAM

OAK AVE/CO RD R44 & 310TH ST/CO RD B16 INTERSECTION STUDY

October 14, 2022

1. Local Jurisdiction: Hancock County
2. Reason TEAP Study Originated: The County has been concerned about traffic operations and safety at the Oak Ave & 310th St intersection. This intersection has the highest ranking for a county road intersection in Hancock County on the Iowa DOT's Potential for Crash Reduction (PCR) site, with two fatal crashes in the last 10 years of crash history. This study reviewed the existing conditions, recent crash history, and traffic operations for the intersection of Oak Ave & 310th St.
3. Scope of Services Provided: Performed field review of existing conditions, collected traffic count data for the intersection, reviewed relevant crash history, identified, and evaluated potential improvement options, prepared construction cost estimates, and developed recommendations per current standards.
4. The Engineer, Snyder & Associates, submitted a final report dated October 14, 2022 with the following recommendations:

   A. Maintaining the existing two-way stop control is recommended as the intersection traffic volumes did not satisfy the MUTCD criteria for all-way stop control. In addition, the following low-cost improvements are recommended for consideration:

   B. 310th Street:
      a. Install oversized (36") advance intersection warning signs, fluorescent yellow sign sheeting and retroreflective strips installed on the posts on both the left and right side of the roadway. A "Oak Avenue" street name plaque should be installed below the warning sign.
      b. Extend the edge line pavement markings through the intersection using a dotted line.
      c. Consider adding directional guide signs to both approaches to provide additional awareness of the intersection.
      d. Additional countermeasure to consider – install red metal flags on top of the warning signs, or yellow flashing beacons above the signs.

   C. Oak Avenue:
      a. Install oversized (36") advance traffic control sign, stop ahead symbol, on both the left and right side of the roadway. The sign should be fluorescent yellow with fluorescent yellow retroreflective strips installed on the posts.

b. Install a second STOP sign with "Cross Traffic Does Not Stop" plaque and retroreflective post on the left side of the road. Replace the damaged STOP sign. Existing signs are already oversized at 36", could be further oversized to 48".
c. Re-apply the stop lines on both approaches.
d. Replace the existing rumble strips with portland cement concrete (PCC) patches/rumble strips. The PCC rumble strips hold up better to traffic than those placed in the hot-mix asphalt.
e. Consider adding directional guide signs to the southbound approach to provide additional awareness of the intersection.
f. Additional countermeasure to consider – install red metal flags on top of the STOP signs, or red flashing beacons above the signs.

Following installation of the low-cost improvements at the intersection, continued monitoring of the intersection should be accomplished. If safety concerns continue additional countermeasures can be implemented, or the all-way stop control could be installed if the above recommendations do not adequately address the safety concerns.

Planning level probable costs for the recommendations found in this study are included below:

Recommendations	Cost Estimate	Notes
310th Street:		
Oversized advance intersection warning sign.	$2,000	- Costs for 2 post mounted signs with retroreflective post on each approach. (4 signs)
Extend the edge line.	$500	- Dotted 4" line. (260 lineal feet)
Oak Avenue:		
Oversized advance traffic control signs.	$2,000	- Costs for 2 post mounted signs with retroreflective post on each approach. (4 signs)
Install additional stop sign on left side of road.	$1,000	- Costs for 1 post mounted sign with retroreflective post on each approach on the left side. (2 signs)
Re-apply stop lines.	$500	- 15 lineal feet per stop line
Replace existing rumble strip panels with rumble strips in PCC patches.	$6,000 - $8,000	- Two PCC patches per approach (4 patches)
Additional countermeasures to consider:		
Install additional directional guide signs	$1,500	- Three directional guide signs, two on 310th St and one on SB Oak Ave
Install red metal flags on top of signs.	$1,600	- Two flags per sign – intersection warning signs, stop ahead signs, and stop signs. (12 signs)

Install beacons on intersection warning signs and stop signs.	$16,000 – $20,000	- One beacon per sign on intersection warning signs and stop signs. (8 signs)

Notes:
1. This opinion represents approximate construction costs only and does not provide a detailed list of project pay items. This opinion is to be used to as a planning number only.
2. Costs represent current dollars as of report date.

5. Potential Funding Sources:
   Funding for traffic safety improvements on public roads under county, city, or state jurisdiction may be available through the Traffic Safety Improvement Program (TSIP) or the Highway Safety Improvement Program (HSIP) – Secondary Program.

   TSIP provides funding for traffic safety improvements on any public road under the jurisdiction of a public agency. There are two categories for project applications, site-specific projects, and traffic control devices. The site specific projects are evaluated based on the traffic safety aspects of the project, benefit/cost ratio, the annual funding level, and other criteria. Funding for this category of project is limited to $500,000 per site. The traffic control devices category is also evaluated based on the traffic safety benefits of the project, the annual funding level and other criteria. This category provides funding for the purchase of materials for the installation of new, or replacement of obsolete traffic control devices. This category is limited to a total of $500,000 for all approved applications. Applications are due by August 15th each year.

   The HSIP-Secondary program is a county focused highway safety program to promote the installation of low-cost systemic improvements. The program has the goal of reducing two types of crashes, lane departure crashes and intersection crashes. The systemic approach installs countermeasures along an entire corridor or at multiple intersections with similar characteristics. Applications are due by November 30, 2022 for FY 2024 or later.

TRAFFIC ENGINEERING ASSISTANCE PROGRAM
OAK AVE/CO RD R44 & 310TH ST/CO RD B16 INTERSECTION STUDY
HANCOCK COUNTY, IOWA

Prepared by:

Snyder & Associates, Inc.

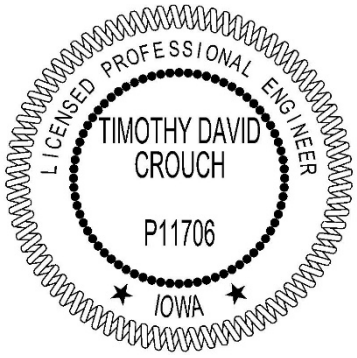
Prepared for:

Hancock County

In Cooperation with:

Iowa Department of Transportation

October 14, 2022



I hereby certify that this engineering document was prepared by me or under my direct personal supervision and that I am a duly licensed Professional Engineer under the laws of the State of Iowa.

Timothy D Crouch 10/14/2022

Timothy D. Crouch, P.E. Date

License Number P11706

My License Renewal Date is December 31, 2023

Pages or sheets covered by this seal:

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EXHIBITS (following the report)

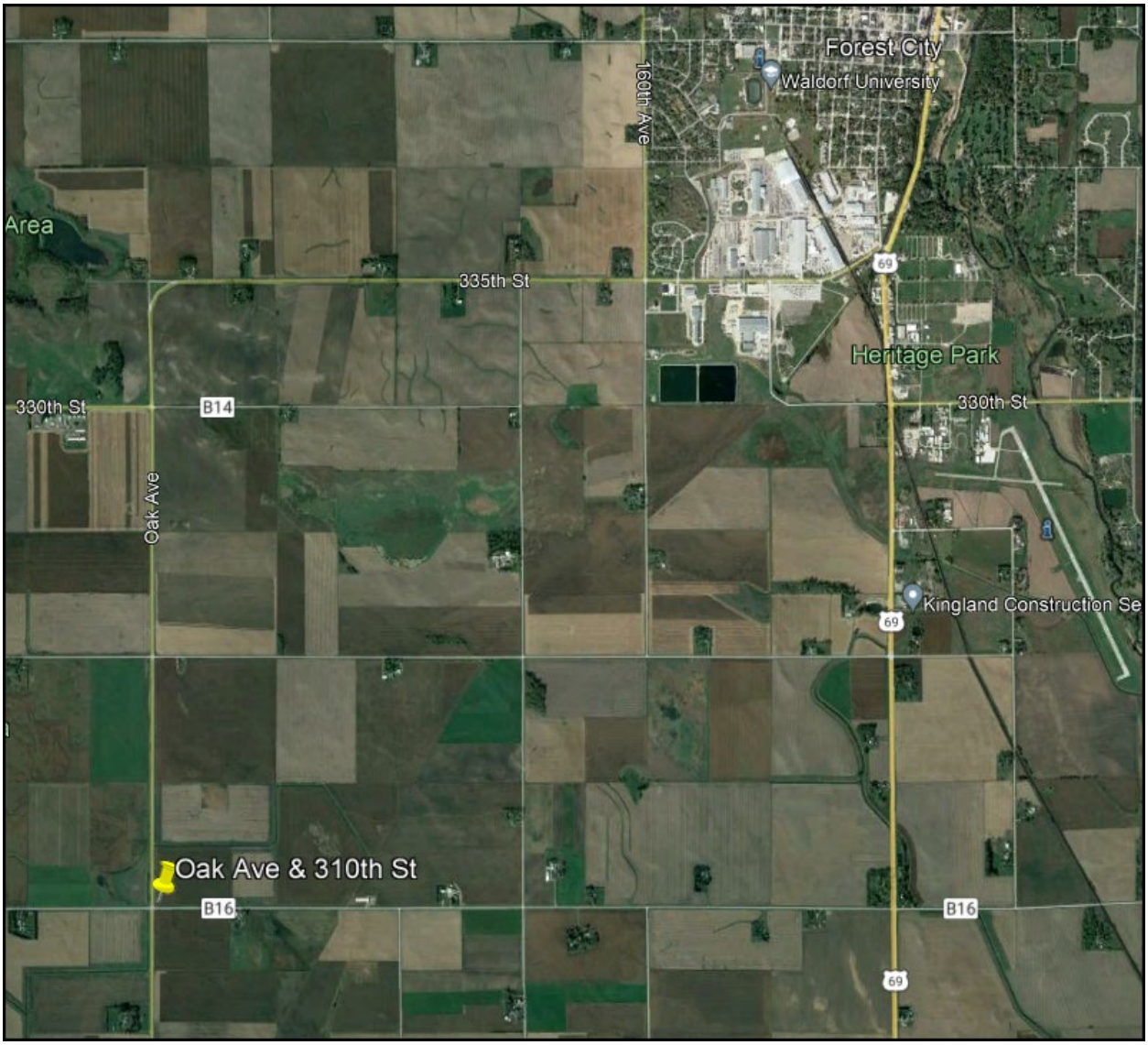
APPENDIX

- Snyder & Associates Intersection Turning Movement Counts (2022)
- Intersection Crash History (2012 – 2021)
- Traffic Operations Reports
- FHWA Low-Cost Safety Improvements for Rural Intersections Briefing Sheet

BACKGROUND

At the request of Hancock County, this study reviewed the existing conditions, recent crash history, and traffic operations for the intersection of Oak Ave & 310th St. This intersection has the highest ranking for a county road intersection in Hancock County on the Iowa DOT's Potential for Crash Reduction (PCR) site, with two fatal crashes in the last 10 years of crash history. Refer to Figure 1 for the study location.

Figure 1. Study Intersection



Existing Conditions

Both roadways are 2-lane rural cross section roadways with gravel shoulders that range in width from 2'-4'. 310th St has a federal functional classification as a major collector and Oak Ave is a major collector south of the intersection and a local roadway north of the intersection. There are no dedicated turn lanes at the study intersection. The posted speed limit through the study intersection is 55 mph.

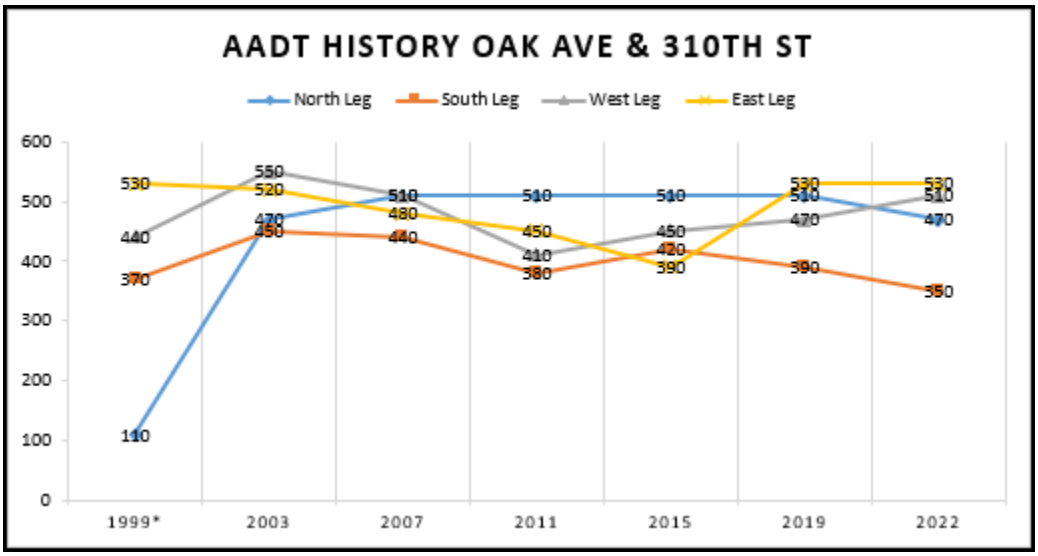
The intersection is controlled by stop signs on the Oak Ave approaches. Both stopped approaches have three rumble strip panels on the approach, a 30" stop ahead warning sign (SB is a word message sign and NB is a symbol sign), intersecting county route marker junction assembly, a destination sign on the northbound approach, and 36" stop signs on the right side of the road. The stop signs have "Cross Traffic Does Not Stop" plaques and red reflective strips on the signposts. There is a destination streetlight in the southeast corner of the intersection.

The north leg of Oak Ave serves as a connection to the industrial area on the south side of Forest City which is located to the northeast of the intersection. The industrial area is approximately 5 miles north and east of the intersection.

EXISTING TRAFFIC DATA AND AADT HISTORY

The 1999 -2022 annual average daily traffic (AADT) traffic counts for the study intersection as reported by the Iowa DOT (1999 – 2019 volumes) and Snyder & Associates (2022 volumes) are included in Figure 2. As shown below, traffic for the Iowa DOT counts from 1999 -2019 show stable traffic volumes, with little growth on the north/south approach legs and significant recent growth on the east/west approaches.

Figure 2: AADT History



*The north approach of Oak Avenue was gravel in 1999.

Intersection turning movement counts were collected by Snyder & Associates on July 20, 2022, for 24 hours and are included in the appendix. The counts were factored using the Iowa DOT 2021 expansion factors for secondary roads to determine the 2022 AADT for the intersection approaches shown in Figure 2.

The 2022 Snyder & Associates counts include approximately 13% trucks/heavy vehicles entering the intersection through the day. A high percentage of trucks are southbound (22%) with trucks

making 54% of the left turns (36 trucks in the 24-hour period). The westbound approach has similar numbers, 16% trucks with trucks making 55% of the right turns (36 trucks in the 24-hour period).

FIELD OBSERVATIONS

The following observations and conditions were observed while deploying traffic counting equipment at the study intersection:

- Rumble strips, three panels, are located on Oak Ave in advance of the stop signs. The condition of the rumble strips is good; however, some wearing was noticed in the wheel paths.
- Existing stop signs are 36" signs with "Cross Traffic Does Not Stop" plaques installed below them. Red reflective strips have been installed on the signposts. The northbound sign has been damaged and is bent and the sheeting has been scrapped.
- The stop line pavement markings on the stop approaches are worn and not visible to the driver.
- The southbound stop ahead warning sign is a word message sign and is faded. In the northbound direction the warning sign is a symbol sign and appears to be newer with fluorescent yellow sheeting. Both signs are 30" warning signs.
- There is a directional guide sign in advance of the intersection on the northbound approach, but not the southbound.
- All intersection approaches are flat and sight distance is good. On the southbound approach there is a slight dip north of the intersection, but the stop sign is visible from the stop ahead warning sign.
- There is a embankment on the west side of the southbound approach to the intersection. And a smaller embankment on the east side of the road. The embankments limit the ability of drivers to see approaching traffic on the eastbound and westbound approaches.
- A streetlight is installed on a utility pole in the southeast corner of the intersection.
- While conducting the field review, a truck in the southbound direction did not stop for the stop sign. It appeared the driver did not see the stop sign in time to stop, as they slowed, but were not able to stop before entering and proceeding through the intersection.

Below are pictures taken of each of the intersection approaches and intersection signing.

Photo 1. West approach, looking west.

Photo 2. West approach, looking east

Photo 3. South approach, looking south.

Photo 4. South approach, looking north

Photo 5. East approach, looking east.

Photo 6. East approach, looking west.

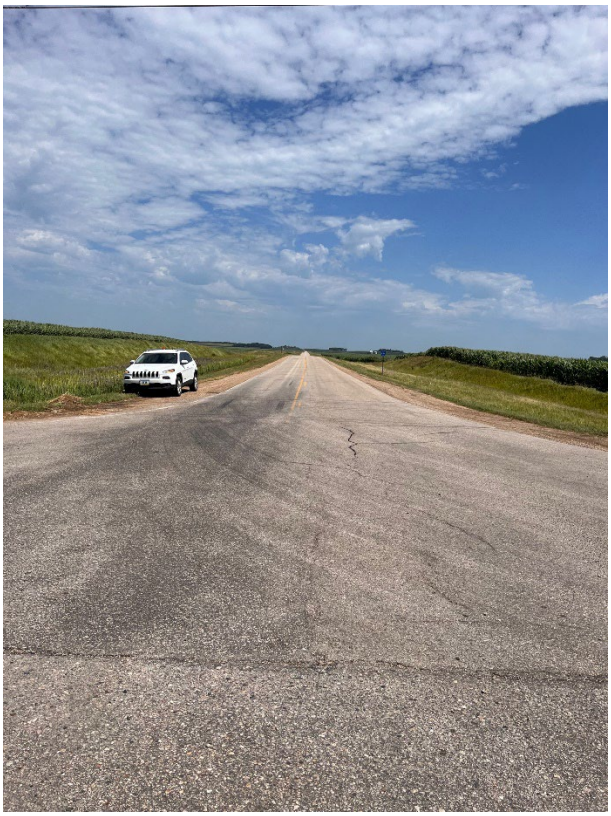


Photo 7. North approach, looking north.

Photo 8. North approach, looking south.

Photo 9. Damaged NB stop sign.

Photo 10. SB stop ahead warning sign.

Photo 11. Tire path wear in rumble strip.

Photo 12. Tire path wear in rumble strip.

Photo 13. Stop Line for NB stop condition.

Photo 14. Stop Line for SB stop condition.

Photo 15. Berm on the east side of the SB approach.

CRASH HISTORY

The Iowa DOT uses a safety performance functions (SPF) methodology to prioritize high crash intersections in Iowa. "A safety performance function (SPF) is an equation used to predict the average number of crashes per year at a location as a function of exposure and, in some cases, roadway or intersection characteristics. Generally, SPFs more realistically demonstrate the relationship between crashes and traffic volume."[1]

Reviewing the Iowa DOT PCR website for 2016-2020, the study intersection is currently classified as a negligible PCR level intersection (PCR between 0 and 0.2) which means it is "performing better than expected". For all crash types, the study intersection is ranked 385 of 27,975 (1.4 percent) of "Undivided High-Speed Partial Stop Control" intersections statewide. The higher the intersection rank, the worse the safety performance when compared to similar intersections across the state.

While the intersection is considered to be performing better than expected, the crash record shows moderate activity. For this study we reviewed 10 years of crash data because of the lower volume of traffic and crashes. Over the 10-year period starting in 2012, there have been 6 recorded crashes at and in advance of the study intersection. Two of the six crashes were fatalities, one in May 2014 and the other in December 2020. Five of the six collisions were right angle collisions, four involved southbound vehicles and four involved westbound vehicles. The two fatal crashes involved southbound vehicles, one with a westbound vehicle and the other with an eastbound vehicle. Five of the six crashes were the result of a driver running the stop sign (3) or failure to yield the right of way from a stop sign (2).

A summary of the intersection crash history obtained from the Iowa DOT's Iowa Crash Analysis Tool (ICAT) is included in Table 1, and additional details are provided in the appendix.

Table 1. Study Intersection Crash Summary (2012 - 2021)

Crashes (Injuries)	Crash Severity (Injuries)	Crash Types (# Crashes)	Major Causes (# Crashes)
6 (9)	2 – Fatal (3) 1 – Suspected (2 serious, 2 minor) 2 – Possible (1) 1 – PDO*	·Broadside (5) ·Non-collision (1) ·Unknown (1)	·Ran stop sign (3) ·FTYROW*: From stop sign (2) ·Driving too fast for conditions (1)

*Property Damage Only/Failure to Yield Right of Way

SIGHT LINE OBSTRUCTIONS AND SIGHT DISTANCES

Required stopping distance is a function of motorist reaction time, vehicle travel speed, and roadway grade, which can increase or decrease the needed stopping distance depending on a positive or negative grade. The table below is a summary of stopping distances at different speeds

[1] Iowa DOT. Potential for Crash Reduction (PCR) of Intersections Study. Online available at: https://iowadot.maps.arcgis.com/apps/MapSeries/index.html?appid=6920b9b36fa54caa90c25bd6dcdd0c7e

and roadway grade, as recommended by the American Association of State and Highway Traffic Engineers.

Table 2. Stopping Sight Distance[2]

Travel Speed	Grade %		
	-3%	0%	3%
55 mph	520 ft	495 ft	469 ft
60 mph	598 ft	570 ft	538 ft

Critical to avoiding vehicular conflict at intersections for vehicles stopped at the intersection is the ability for motorists to see approaching vehicles or pedestrians and ensure that they have adequate time to react before or while making a turn. The amount of time needed to complete a safe turning movement varies with the speed of approaching traffic as the faster an approaching vehicle is moving, the less time available to react. Additionally, motorists turning left require additional time/distance to safely complete a turn due to the increased distance they must travel as they cross the road to the opposite lane.

Table 3. Departure Sight Triangle Distances by Travel Speed for Minor Leg Turns

Approach Speed on Major Leg	Required Distance from Stop	
	Left Turn (ft)[3]	Right Turn (ft)[4]
55 mph	610	530
60 mph	665	575

The southbound approach of Oak Ave has a slight dip in elevation southbound approach. However, this dip does not impact the sight distance to the intersection, and the stopping sight distance exceeds the values in Table 2. The departure sight distance for vehicles stopped at the stop signs on Oak Ave also exceed the sight distance values in Table 3. The northbound approach sight distances also exceed the required distances shown in Tables 2 and 3.

There is a drainage ditch on the west side of Oak Ave north of the intersection. The embankment on the west side of the ditch blocks the southbound driver's view of eastbound traffic approaching the intersection. Since Oak Ave has the stop condition this sight obstruction does not restrict the sight distance to the stop sign, but drivers may not see approaching traffic from the west and make assumptions on the need to completely stop.

[2] American Association of State and Highway Transportation Officials. *A Policy on Geometric Design of Highways and Streets, 7th Edition*. Table 3-1 Stopping Sight Distance on Level Roadways & 3-2 Stopping Sight Distance on Grades.

[3] American Association of State and Highway Transportation Officials. *A Policy on Geometric Design of Highways and Streets, 7th Edition*. Table 9.7 – Design Intersection Sight Distance – Case B1, Left Turn From Stop.

[4] American Association of State and Highway Transportation Officials. *A Policy on Geometric Design of Highways and Streets, 7th Edition*. Table 9.9 – Design Intersection Sight Distance – Case B2, Right Turn From Stop.

ALL WAY STOP CONTROL WARRANT ANALYSIS

An All-Way Stop Warrant Analysis was performed for the intersection. The warrant analysis was conducted according to the Manual on Uniform Traffic Control Devices (MUTCD), 2009 Edition, Section 2B.07, Multi-way Stop Application. The criteria are included in the MUTCD guidance statement and includes the following:

- Five or more reported crashes in a 12-month period that are susceptible to correction by a multiway stop (i.e. right- and left- turn collisions and right-angle collisions),
- Minimum AADT volumes of at least 210 vehicles per hour for an 8-hour period on the major legs of the intersection, and
- The combined vehicular, pedestrian, and bicycle traffic from both minor segments of the intersection averages at least 140 users per hour during the same 8-hour period with an average delay of at least 30 seconds per vehicle.
- The minimum vehicular volume warrants are 70% of the values included in the MUTCD because the approach speed of the major street traffic is greater than 40 mph.

The intersection traffic volumes collected for this study and the intersection crash history do not satisfy the MUTCD warrants for an all-way stop. The multi-way stop analysis worksheet is included in the appendix.

While meeting or not meeting a warrant is not the only qualifying criteria for placing traffic control devices, the study intersection does not meet the established warrants for an all-way stop traffic control measure.

INTERSECTION TRAFFIC OPERATIONS

Intersection capacity analysis was completed following the methods outlined in the Highway Capacity Manual, 6th Edition (HCM), incorporated into the traffic analysis software Highway Capacity Software, Version 7.7 (HCS). Intersection delay is a function of traffic factors such as traffic volume, turning vehicles, vehicle types and arrival patterns as well as geometric factors such as number of lanes and type of traffic control. Intersection operations are categorized by equating ranges of average vehicular delay in seconds per vehicle (sec/veh) to level of service (LOS) criteria.

LOS A is considered the most desirable level, with the least delay, while LOS F experiences the most delay. LOS C is often considered the acceptable goal for intersection delay, while urban side street approaches often experience LOS D due to two-way stop operation and LOS E or F is operating over capacity. Table 4 below shows LOS criteria as defined by the HCM for unsignalized intersections.

Table 4 : Level of Service (LOS) Definition

LOS	Average Delay per Vehicle (sec/vehicle) Unsignalized Intersection
A	Less than 10
B	10-15
C	15-25
D	25-35
E	35-50
F	Greater than 50

Capacity analysis was completed for existing conditions with existing traffic and roadway geometry for the intersection. The intersection operations were determined to be at a LOS A with the Oak Ave stop approaches experiencing 9.2 sec/veh of delay. For comparison, the traffic operations for an all-way stop were evaluated as well. The intersection would operate at LOS A under all-way stop control with an average delay of 7.2 sec/veh for all approaches. The HCS reports are included in the appendix.

LOW-COST SAFETY IMPROVEMENTS FOR RURAL INTERSECTIONS

Rural intersection safety can be improved by using low-cost safety improvements that improve visibility of traffic control devices, provide additional signs, and improve pavement markings. The FHWA has several publications on low-cost safety improvements, one of which is the Local and Rural Road Safety Briefing Sheet, *Low-Cost Safety Improvements for Rural Intersections.* A copy of this briefing sheet is included in the appendix.

The low-cost safety improvements for rural intersections includes several potential measures to improve intersection recognition by enhancing the conspicuity of the intersection signing for both the stop approaches and the through approaches and improving pavement markings to reduce the crash risk at the intersection. These improvements are intended for use at spot locations or in a systemic approach across the roadway network.

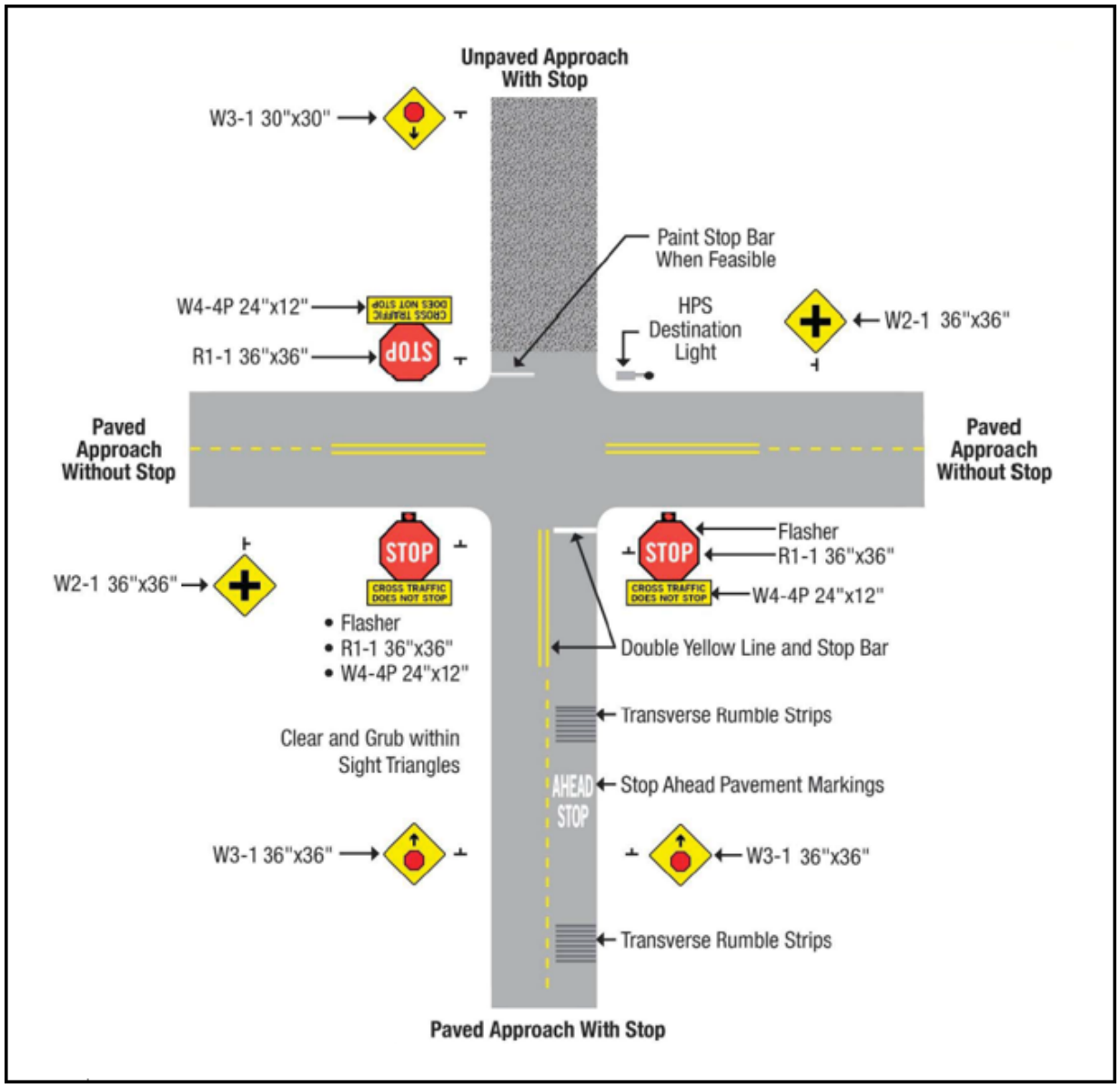
Low-cost countermeasures for stop-controlled intersection generally consist of the following treatments:

- On the through approach -
    - Oversized advance intersection warning signs with street name plaques installed on both the left and right side of the road.
    - Extension of the edge lines (dotted line) through the intersection.
- On the stop approach -
    - Oversized stop ahead warning signs installed on the right and left side of the road.
    - Oversized STOP signs installed on the left and right side of the road with CROSS TRAFFIC DOES NOT STOP plaque.
    - Properly placed and maintained stop line at the intersection.
    - Removal of any vegetation or obstruction that limits sight distance to the intersection or sight distance of opposing traffic while at the stop line.
    - Add transverse rumble strips in advance of the intersection.
    - Add STOP AHEAD pavement markings.

- General improvements to enhance sign conspicuity and awareness of the intersection -
  - Use a prismatic retroreflective sheeting, ASTM Type IV or Type XI.
  - Use fluorescent yellow sign sheeting for the warning signs.
  - Retroreflective sheeting on the signposts.
  - Add red flags to the signs.
  - Add beacons on the intersection warning sign and/or the STOP signs, or use of flashing LEDs in the borders of the signs.
  - Double yellow center line at the intersection on all approaches.
  - Install or improve intersection lighting.

Figure 3 and the following photos illustrate many of these low-cost improvements.

Figure 3. Example of Intersection Safety Improvements



*Modified from Iowa DOT District Road Safety Plan

Photo 16. Oversize STOP signs on the right and left and no passing zone markings on approach.

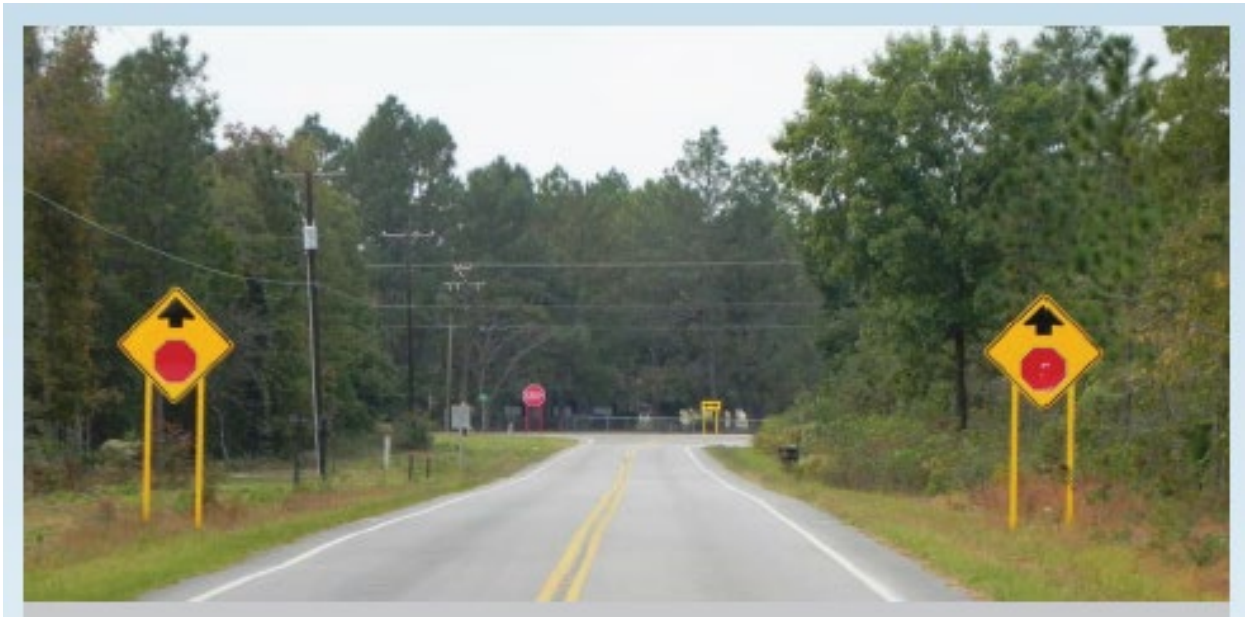


Photo 17. Oversize stop ahead warning signs on the right and left, with reflective posts.

Photo 18. Intersection warning signs with reflective posts, flashing beacons, advisory speed limit and street name plaques.

Photo 19. Edge line extension through the intersection and no passing zone markings on the approaches.

CONCLUSIONS/RECOMMENDATIONS

Maintaining the existing two-way stop control is recommended as the intersection traffic volumes did not satisfy the MUTCD criteria for all-way stop control. In addition, the following low-cost improvements are recommended for consideration:

- 310th Street:
    a. Install oversized (36") advance intersection warning signs, fluorescent yellow sign sheeting and retroreflective strips installed on the posts on both the left and right side of the roadway. A "Oak Avenue" street name plaque should be installed below the warning sign.
    b. Extend the edge line pavement markings through the intersection using a dotted line.
    c. Consider adding directional guide signs to both approaches to provide additional awareness of the intersection.
    d. Additional countermeasure to consider – install red metal flags on top of the warning signs, or yellow flashing beacons above the signs.
- Oak Avenue:
    a. Install oversized (36") advance traffic control sign, stop ahead symbol, on both the left and right side of the roadway. The sign should be fluorescent yellow with fluorescent yellow retroreflective strips installed on the posts.
    b. Install a second STOP sign with "Cross Traffic Does Not Stop" plaque and retroreflective post on the left side of the road. Replace the damaged STOP sign. Existing signs are already oversized at 36", could be further oversized to 48".
    c. Re-apply the stop lines on both approaches.
    d. Replace the existing rumble strips with portland cement concrete (PCC) patches/rumble strips. The PCC rumble strips hold up better to traffic than those placed in the hot-mix asphalt.
    e. Consider adding directional guide signs to the southbound approach to provide additional awareness of the intersection.
    f. Additional countermeasure to consider – install red metal flags on top of the STOP signs, or red flashing beacons above the signs.

The above recommendations are shown in Exhibit 1.

Following installation of the low-cost improvements at the intersection, continued monitoring of the intersection should be accomplished. If safety concerns continue, additional countermeasures can be implemented, or the all-way stop control could be installed if the above recommendations do not adequately address the safety concerns.

OPINION OF PROBABLE COSTS

Planning level probable costs for the recommendations found in this study are included below.

Table 5: Opinion of Probable Project Costs (Planning Level)

Recommendations	Cost Estimate	Notes
310th Street:		
Oversized advance intersection warning sign.	$2,000	- Costs for 2 post mounted signs with retroreflective post on each approach. (4 signs)
Extend the edge line.	$500	- Dotted 4" line. (260 lineal feet)
Oak Avenue:		
Oversized advance traffic control signs.	$2,000	- Costs for 2 post mounted signs with retroreflective post on each approach. (4 signs)
Install additional stop sign on left side of road.	$1,000	- Costs for 1 post mounted sign with retroreflective post on each approach on the left side. (2 signs)
Re-apply stop lines.	$500	- 15 lineal feet per stop line
Replace existing rumble strip panels with rumble strips in PCC patches.	$6,000 - $8,000	- Two PCC patches per approach (4 patches)
Additional countermeasures to consider:		
Install additional directional guide signs	$1,500	- Three directional guide signs, two on 310th St and one on SB Oak Ave
Install red metal flags on top of signs.	$1,600	- Two flags per sign – intersection warning signs, stop ahead signs, and stop signs. (12 signs)
Install beacons on intersection warning signs and stop signs.	$16,000 – $20,000	- One beacon per sign on intersection warning signs and stop signs. (8 signs)

Notes:
1. This opinion represents approximate construction costs only and does not provide a detailed list of project pay items. This opinion is to be used to as a planning number only.
2. Costs represent current dollars as of report date.

POTENTIAL FUNDING SOURCES

Funding for traffic safety improvements on public roads under county, city, or state jurisdiction may be available through the Traffic Safety Improvement Program (TSIP) or the Highway Safety Improvement Program (HSIP) – Secondary Program.

TSIP provides funding for traffic safety improvements on any public road under the jurisdiction of a public agency. There are two categories for project applications, site-specific projects, and traffic control devices. The site specific projects are evaluated based on the traffic safety aspects of the project, benefit/cost ratio, the annual funding level and other criteria. Funding for this

category of project is limited to $500,000 per site. The traffic control devices category is also evaluated based on the traffic safety benefits of the project, the annual funding level, and other criteria. This category provides funding for the purchase of materials for the installation of new, or replacement of obsolete traffic control devices. This category is limited to a total of $500,000 for all approved applications. Applications are due by August 15th each year.

The HSIP-Secondary program is a county focused highway safety program to promote the installation of low-cost systemic improvements. The program has the goal of reducing two types of crashes, lane departure crashes and intersection crashes. The systemic approach installs countermeasures along an entire corridor or at multiple intersections with similar characteristics. Applications are due by November 30, 2022 for FY 2024 or later.

SNYDER & ASSOCIATES

NOT TO SCALE

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Intersection Of Oak Avenue & 310th Street

Exhibit 1 Hancock TEAP | Hancock County, Iowa | 09/15/2022

Appendix

- **Intersection Turning Movement Counts**
- **Crash History (2012-2021)**
- **Multi-way Stop Control Warrant Worksheet**
- **FHWA Low-Cost Safety Improvements for Rural Intersections Briefing Sheet**

Turning Movement Count

Oak Ave & 310th St
Hancock County TEAP
Forest City, IA
122.1000.01D

File Name : CNT_TMC_Oak-310th_24HR_2022-07-20
Site Code :
Start Date : 7/20/2022
Page No : 1

Groups Printed- Cars - Heavy Vehicles

	Oak Ave SB					310th St WB					Oak Ave NB					310th St EB					
Start Time	Left	Thru	Rght	Other	App. Total	Left	Thru	Rght	Other	App. Total	Left	Thru	Rght	Other	App. Total	Left	Thru	Rght	Other	App. Total	Int. Total
Factor	1.0	1.0	1.0	1.0		1.0	1.0	1.0	1.0		1.0	1.0	1.0	1.0		1.0	1.0	1.0	1.0		
12:00 AM	0	0	0	0	0	0	1	0	0	1	0	1	0	0	1	0	1	0	0	1	3
Total	0	0	0	0	0	0	1	0	0	1	0	1	0	0	1	0	1	0	0	1	3
01:30 AM	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	1
Total	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	1
02:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	1
02:30 AM	0	1	0	0	1	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	2
Total	0	1	0	0	1	0	1	0	0	1	0	0	0	0	0	1	0	0	0	1	3
03:00 AM	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	1
03:15 AM	0	0	0	0	0	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0	1
03:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	0	1	0	0	1	2
Total	0	0	0	0	0	1	0	1	0	2	0	0	1	0	1	0	1	0	0	1	4
04:00 AM	0	1	0	0	1	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	2
04:15 AM	0	1	0	0	1	1	0	0	0	1	0	3	0	0	3	3	3	0	0	6	11
04:30 AM	0	1	0	0	1	0	0	0	0	0	0	3	0	0	3	5	1	1	0	7	11
04:45 AM	0	1	0	0	1	0	1	0	0	1	0	4	0	0	4	2	2	0	0	4	10
Total	0	4	0	0	4	1	1	0	0	2	0	11	0	0	11	10	6	1	0	17	34
05:00 AM	0	1	0	0	1	0	0	0	0	0	0	1	0	0	1	3	5	0	0	8	10
05:15 AM	0	3	0	0	3	0	1	0	0	1	0	10	1	0	11	8	2	0	0	10	25
05:30 AM	2	2	1	0	5	1	0	1	0	2	0	9	0	0	9	5	4	0	0	9	25
05:45 AM	0	0	0	0	0	0	0	0	0	0	0	7	0	0	7	4	6	0	0	10	17
Total	2	6	1	0	9	1	1	1	0	3	0	27	1	0	28	20	17	0	0	37	77
06:00 AM	0	0	0	0	0	0	0	1	0	1	0	2	0	0	2	0	3	0	0	3	6
06:15 AM	0	2	1	0	3	0	3	2	0	5	0	1	0	0	1	0	2	0	0	2	11
06:30 AM	0	2	0	0	2	0	2	1	0	3	0	1	1	0	2	4	7	1	0	12	19
06:45 AM	1	2	0	0	3	0	0	1	0	1	0	4	1	0	5	4	4	0	0	8	17
Total	1	6	1	0	8	0	5	5	0	10	0	8	2	0	10	8	16	1	0	25	53
07:00 AM	4	2	0	0	6	0	3	1	0	4	0	3	0	0	3	1	7	0	0	8	21
07:15 AM	2	1	0	0	3	0	2	2	0	4	0	2	2	0	4	0	3	0	0	3	14
07:30 AM	1	0	0	0	1	1	7	1	0	9	0	1	2	0	3	0	4	0	0	4	17
07:45 AM	1	1	0	0	2	0	4	2	0	6	0	3	0	0	3	1	10	1	0	12	23
Total	8	4	0	0	12	1	16	6	0	23	0	9	4	0	13	2	24	1	0	27	75
08:00 AM	2	1	1	0	4	0	2	0	0	2	0	2	1	0	3	1	3	1	0	5	14
08:15 AM	2	0	1	0	3	1	6	1	0	8	0	5	2	0	7	0	7	2	0	9	27
08:30 AM	3	2	0	0	5	0	6	1	0	7	0	1	1	0	2	0	4	0	0	4	18
08:45 AM	2	0	2	0	4	2	0	1	0	3	0	2	1	0	3	1	3	0	0	4	14
Total	9	3	4	0	16	3	14	3	0	20	0	10	5	0	15	2	17	3	0	22	73
09:00 AM	1	3	2	0	6	0	3	0	0	3	1	1	0	0	2	0	2	0	0	2	13
09:15 AM	0	3	0	0	3	0	0	1	0	1	0	4	0	0	4	0	1	0	0	1	9
09:30 AM	0	4	0	0	4	0	2	1	0	3	0	2	0	0	2	0	2	1	0	3	12
09:45 AM	3	0	0	0	3	0	5	1	0	6	0	3	1	0	4	0	3	0	0	3	16
Total	4	10	2	0	16	0	10	3	0	13	1	10	1	0	12	0	8	1	0	9	50
10:00 AM	0	1	1	0	2	0	2	1	0	3	1	0	1	0	2	0	5	1	0	6	13
10:15 AM	2	2	0	0	4	0	0	2	0	2	1	0	0	0	1	1	3	1	0	5	12

Turning Movement Count

Oak Ave & 310th St
Hancock County TEAP
Forest City, IA
122.1000.01D

File Name : CNT_TMC_Oak-310th_24HR_2022-07-20
Site Code :
Start Date : 7/20/2022

Groups Printed- Cars - Heavy Vehicles

	Oak Ave SB					310th St WB					Oak Ave NB					310th St EB					
Start Time	Left	Thru	Rght	Other	App. Total	Left	Thru	Rght	Other	App. Total	Left	Thru	Rght	Other	App. Total	Left	Thru	Rght	Other	App. Total	Int. Total
Factor	1.0	1.0	1.0	1.0		1.0	1.0	1.0	1.0		1.0	1.0	1.0	1.0		1.0	1.0	1.0	1.0		
10:30 AM	2	1	0	0	3	1	0	0	0	1	0	1	0	0	1	0	2	0	0	2	7
10:45 AM	0	0	1	0	1	0	2	2	0	4	2	0	1	0	3	0	1	0	0	1	9
Total	4	4	2	0	10	1	4	5	0	10	4	1	2	0	7	1	11	2	0	14	41
11:00 AM	1	1	1	0	3	0	1	1	0	2	0	0	1	0	1	0	1	1	0	2	8
11:15 AM	2	0	2	0	4	0	3	4	0	7	0	1	0	0	1	0	2	2	0	4	16
11:30 AM	0	0	0	0	0	2	3	0	0	5	1	2	0	0	3	0	1	1	0	2	10
11:45 AM	4	1	0	0	5	0	2	0	0	2	0	1	0	0	1	2	2	1	0	5	13
Total	7	2	3	0	12	2	9	5	0	16	1	4	1	0	6	2	6	5	0	13	47
12:00 PM	2	2	1	0	5	0	0	1	0	1	0	0	0	0	0	0	1	0	0	1	7
12:15 PM	0	0	0	0	0	2	2	2	0	6	0	1	1	0	2	0	4	0	0	4	12
12:30 PM	0	1	0	0	1	2	3	1	0	6	1	1	0	0	2	0	2	0	0	2	11
12:45 PM	3	1	0	0	4	0	3	1	0	4	0	0	0	0	0	0	1	1	0	2	10
Total	5	4	1	0	10	4	8	5	0	17	1	2	1	0	4	0	8	1	0	9	40
01:00 PM	2	3	1	0	6	0	1	0	0	1	1	2	1	0	4	1	2	2	0	5	16
01:15 PM	3	1	0	0	4	1	2	2	0	5	0	0	0	0	0	0	4	0	0	4	13
01:30 PM	1	3	1	0	5	0	6	1	0	7	0	1	1	0	2	1	2	0	0	3	17
01:45 PM	0	1	1	0	2	0	2	1	0	3	1	4	0	0	5	0	4	0	0	4	14
Total	6	8	3	0	17	1	11	4	0	16	2	7	2	0	11	2	12	2	0	16	60
02:00 PM	1	3	0	0	4	1	0	1	0	2	0	0	0	0	0	1	1	0	0	2	8
02:15 PM	1	0	0	0	1	0	2	0	0	2	0	3	1	0	4	0	2	1	0	3	10
02:30 PM	0	12	1	0	13	0	3	3	0	6	0	2	0	0	2	0	2	0	0	2	23
02:45 PM	1	11	6	0	18	0	6	1	0	7	0	2	0	0	2	2	5	0	0	7	34
Total	3	26	7	0	36	1	11	5	0	17	0	7	1	0	8	3	10	1	0	14	75
03:00 PM	1	7	7	0	15	2	6	0	0	8	1	3	1	0	5	0	3	1	0	4	32
03:15 PM	2	3	6	0	11	0	5	1	0	6	0	2	1	0	3	0	6	2	0	8	28
03:30 PM	1	8	13	0	22	2	3	0	0	5	0	2	1	0	3	0	4	1	0	5	35
03:45 PM	0	3	1	0	4	0	4	2	0	6	1	2	0	0	3	1	2	1	0	4	17
Total	4	21	27	0	52	4	18	3	0	25	2	9	3	0	14	1	15	5	0	21	112
04:00 PM	0	6	2	0	8	1	4	2	0	7	0	2	0	0	2	0	1	0	0	1	18
04:15 PM	3	5	3	0	11	1	5	2	0	8	1	4	1	0	6	0	3	0	0	3	28
04:30 PM	2	2	1	0	5	2	2	2	0	6	0	2	1	0	3	0	1	0	0	1	15
04:45 PM	0	2	1	0	3	1	7	2	0	10	0	3	2	0	5	0	2	0	0	2	20
Total	5	15	7	0	27	5	18	8	0	31	1	11	4	0	16	0	7	0	0	7	81
05:00 PM	1	2	1	0	4	3	6	0	0	9	2	2	1	0	5	0	2	1	0	3	21
05:15 PM	1	1	1	0	3	0	3	0	0	3	1	3	2	0	6	0	6	0	0	6	18
05:30 PM	1	1	4	0	6	1	12	0	0	13	0	4	1	0	5	1	3	0	0	4	28
05:45 PM	0	1	1	0	2	4	5	0	0	9	0	1	1	0	2	1	3	0	0	4	17
Total	3	5	7	0	15	8	26	0	0	34	3	10	5	0	18	2	14	1	0	17	84
06:00 PM	0	1	1	0	2	0	3	0	0	3	0	0	0	0	0	1	2	0	0	3	8
06:15 PM	1	2	2	0	5	0	6	0	0	6	0	2	0	0	2	0	3	0	0	3	16
06:30 PM	0	2	0	0	2	0	3	1	0	4	0	2	0	0	2	0	1	0	0	1	9
06:45 PM	0	0	1	0	1	0	4	1	0	5	0	1	1	0	2	0	3	1	0	4	12
Total	1	5	4	0	10	0	16	2	0	18	0	5	1	0	6	1	9	1	0	11	45
07:00 PM	2	0	0	0	2	0	2	0	0	2	0	1	0	0	1	0	2	2	0	4	9
07:15 PM	0	4	0	0	4	0	2	1	0	3	0	1	0	0	1	2	1	0	0	3	11
07:30 PM	0	1	0	0	1	0	2	2	0	4	0	0	0	0	0	0	1	0	0	1	6
07:45 PM	0	0	0	0	0	0	3	0	0	3	0	0	0	0	0	0	4	0	0	4	7
Total	2	5	0	0	7	0	9	3	0	12	0	2	0	0	2	2	8	2	0	12	33
08:00 PM	1	0	0	0	1	0	1	1	0	2	1	1	0	0	2	0	1	0	0	1	6

Turning Movement Count

Oak Ave & 310th St
Hancock County TEAP
Forest City, IA
122.1000.01D

File Name : CNT_TMC_Oak-310th_24HR_2022-07-20
Site Code :
Start Date : 7/20/2022

Groups Printed- Cars - Heavy Vehicles

	Oak Ave SB					310th St WB					Oak Ave NB					310th St EB					
Start Time	Left	Thru	Rght	Other	App. Total	Left	Thru	Rght	Other	App. Total	Left	Thru	Rght	Other	App. Total	Left	Thru	Rght	Other	App. Total	Int. Total
Factor	1.0	1.0	1.0	1.0		1.0	1.0	1.0	1.0		1.0	1.0	1.0	1.0		1.0	1.0	1.0	1.0		
08:15 PM	0	0	0	0	0	0	2	1	0	3	0	0	1	0	1	1	2	0	0	3	7
08:30 PM	0	0	0	0	0	2	1	1	0	4	0	2	0	0	2	0	1	0	0	1	7
08:45 PM	0	0	0	0	0	0	4	0	0	4	1	1	0	0	2	0	1	0	0	1	7
Total	1	0	0	0	1	2	8	3	0	13	2	4	1	0	7	1	5	0	0	6	27
09:00 PM	0	1	0	0	1	0	3	1	0	4	0	1	0	0	1	0	2	0	0	2	8
09:15 PM	0	0	0	0	0	0	2	1	0	3	0	2	0	0	2	0	1	0	0	1	6
09:30 PM	1	0	0	0	1	1	1	1	0	3	0	1	1	0	2	0	2	1	0	3	9
09:45 PM	0	0	0	0	0	0	1	0	0	1	0	1	1	0	2	1	3	1	0	5	8
Total	1	1	0	0	2	1	7	3	0	11	0	5	2	0	7	1	8	2	0	11	31
10:00 PM	0	0	0	0	0	0	1	0	0	1	1	2	1	0	4	0	0	0	0	0	5
10:15 PM	0	1	0	0	1	0	1	0	0	1	2	0	0	0	2	0	1	0	0	1	5
10:30 PM	1	0	0	0	1	0	0	0	0	0	0	1	1	0	2	0	0	0	0	0	3
10:45 PM	0	0	1	0	1	0	4	0	0	4	0	0	0	0	0	0	0	0	0	0	5
Total	1	1	1	0	3	0	6	0	0	6	3	3	2	0	8	0	1	0	0	1	18
11:00 PM	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	1
11:15 PM	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
11:30 PM	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	2	0	0	2	3
11:45 PM	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	1
Total	0	1	0	0	1	0	1	0	0	1	0	2	0	0	2	0	2	0	0	2	6
Grand Total	67	132	70	0	269	36	202	65	0	303	20	148	39	0	207	59	206	29	0	294	1073
Apprch %	24.9	49.1	26	0		11.9	66.7	21.5	0		9.7	71.5	18.8	0		20.1	70.1	9.9	0		
Total %	6.2	12.3	6.5	0	25.1	3.4	18.8	6.1	0	28.2	1.9	13.8	3.6	0	19.3	5.5	19.2	2.7	0	27.4	
Cars	31	113	67	0	211	35	192	29	0	256	20	132	37	0	189	57	194	28	0	279	935
% Cars	46.3	85.6	95.7	0	78.4	97.2	95	44.6	0	84.5	100	89.2	94.9	0	91.3	96.6	94.2	96.6	0	94.9	87.1
Heavy Vehicles	36	19	3	0	58	1	10	36	0	47	0	16	2	0	18	2	12	1	0	15	138
% Heavy Vehicles	53.7	14.4	4.3	0	21.6	2.8	5	55.4	0	15.5	0	10.8	5.1	0	8.7	3.4	5.8	3.4	0	5.1	12.9

Turning Movement Count

Oak Ave & 310th St
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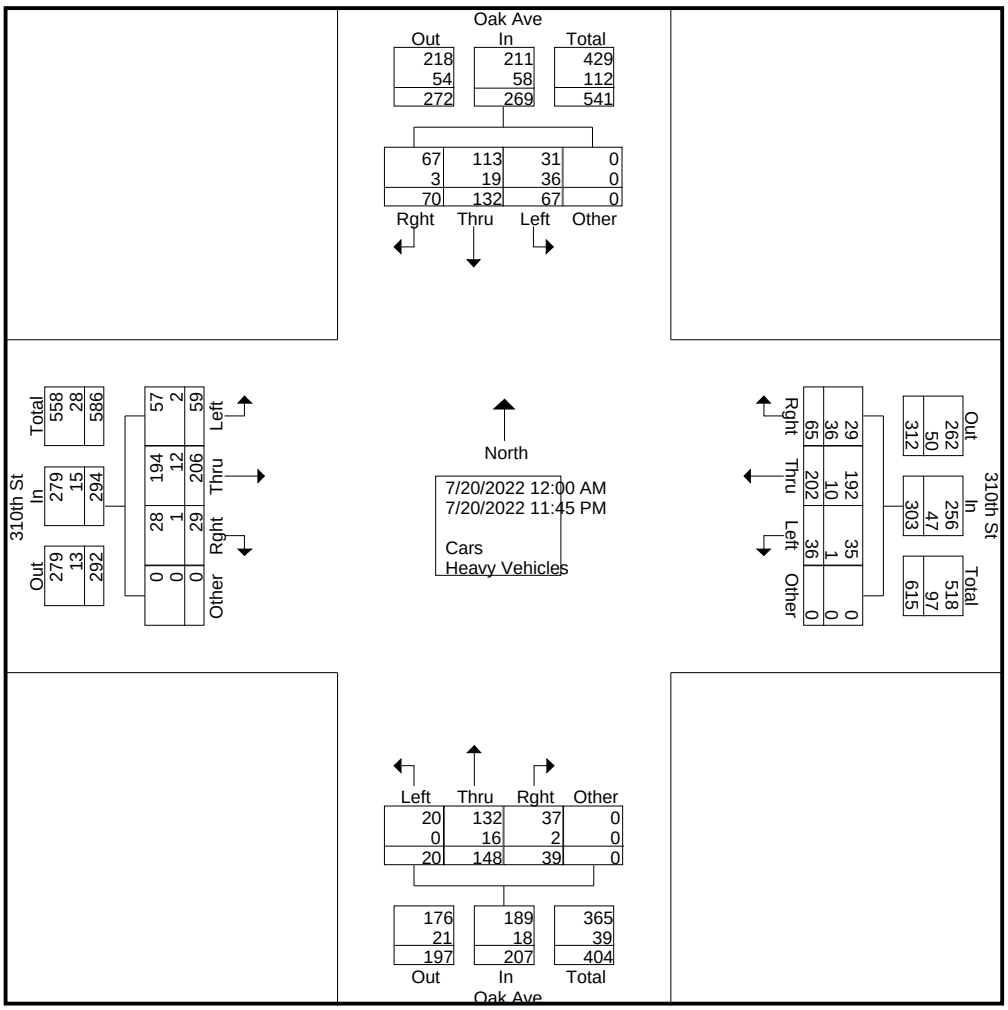
Forest City, IA
122.1000.01D

File Name : CNT_TMC_Oak-310th_24HR_2022-07-20
Site Code :
Start Date : 7/20/2022
Page No : 4



Turning Movement Count

Oak Ave & 310th St
Hancock County TEAP
Forest City, IA
122.1000.01D

File Name : CNT_TMC_Oak-310th_24HR_2022-07-20
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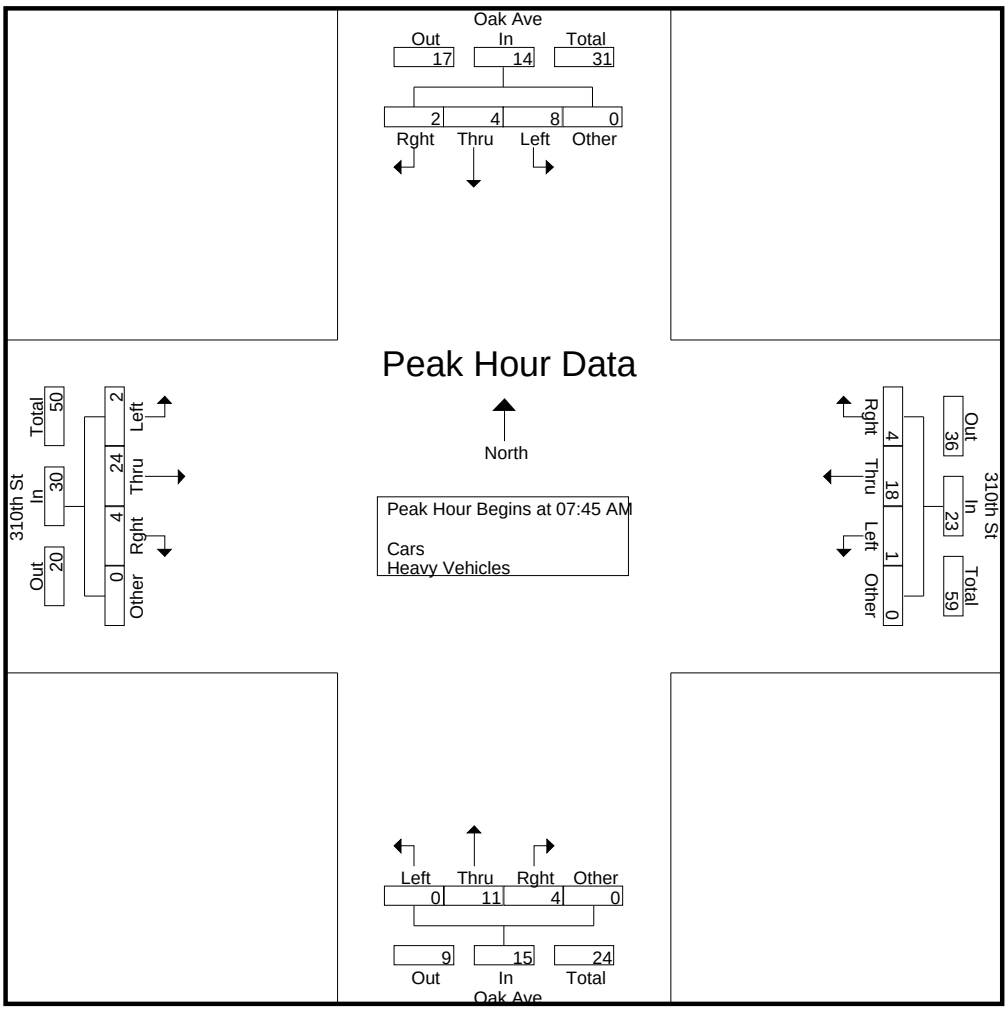
Page No : 5

	Oak Ave SB					310th St WB					Oak Ave NB					310th St EB					
Start Time	Left	Thru	Rght	Other	App. Total	Left	Thru	Rght	Other	App. Total	Left	Thru	Rght	Other	App. Total	Left	Thru	Rght	Other	App. Total	Int. Total
Peak Hour Analysis From 12:00 AM to 09:45 AM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 07:45 AM																					
07:45 AM	1	1	0	0	2	0	4	**2**	0	6	0	3	0	0	3	**1**	**10**	1	0	**12**	23
08:00 AM	2	1	**1**	0	4	0	2	0	0	2	0	2	1	0	3	1	3	1	0	5	14
08:15 AM	2	0	1	0	3	**1**	**6**	1	0	**8**	0	**5**	**2**	0	**7**	0	7	**2**	0	9	**27**
08:30 AM	**3**	**2**	0	0	**5**	0	6	1	0	7	0	1	1	0	2	0	4	0	0	4	18
Total Volume	8	4	2	0	14	1	18	4	0	23	0	11	4	0	15	2	24	4	0	30	82
% App. Total	57.1	28.6	14.3	0		4.3	78.3	17.4	0		0	73.3	26.7	0		6.7	80	13.3	0		
PHF	.667	.500	.500	.000	.700	.250	.750	.500	.000	.719	.000	.550	.500	.000	.536	.500	.600	.500	.000	.625	.759

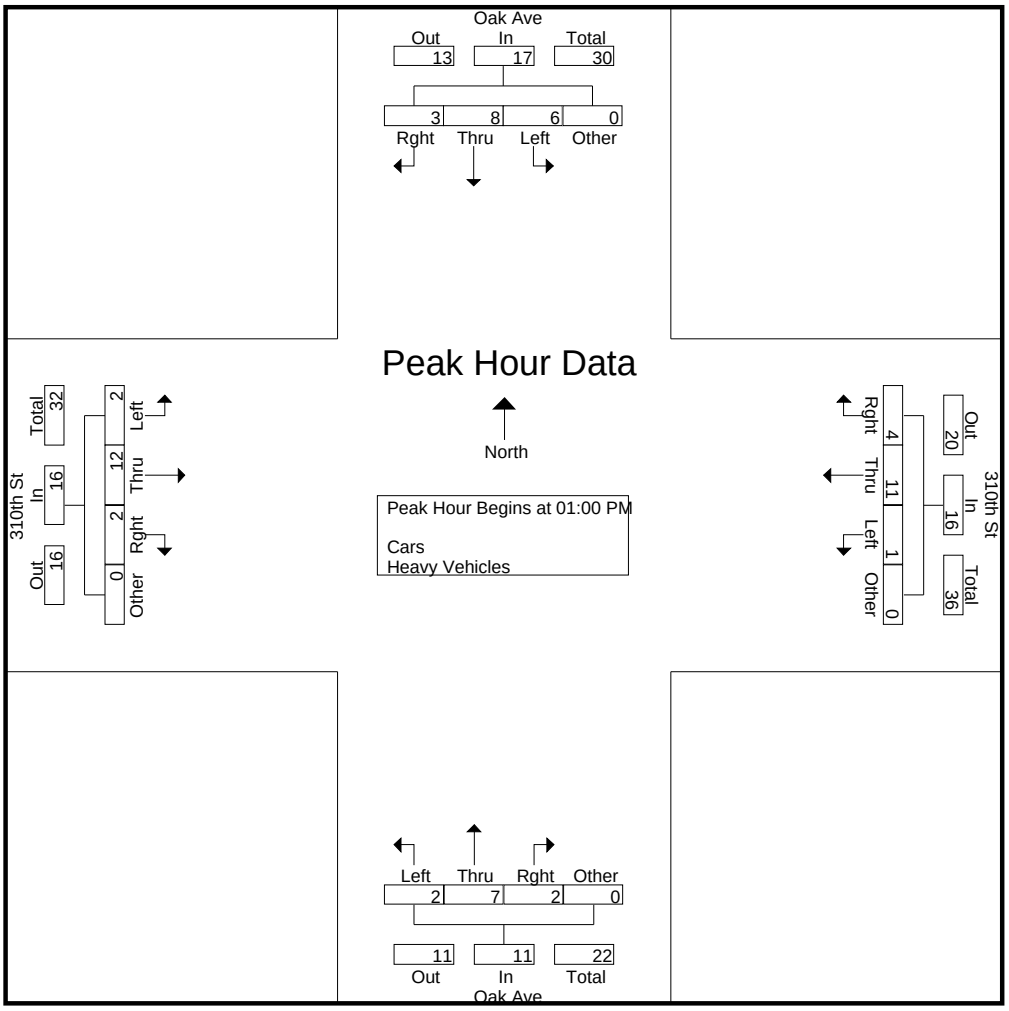


Turning Movement Count

Oak Ave & 310th St
Hancock County TEAP
Forest City, IA
122.1000.01D

File Name : CNT_TMC_Oak-310th_24HR_2022-07-20
Site Code :
Start Date : 7/20/2022
Page No : 6

	Oak Ave SB					310th St WB					Oak Ave NB					310th St EB					
Start Time	Left	Thru	Right	Other	App. Total	Left	Thru	Right	Other	App. Total	Left	Thru	Right	Other	App. Total	Left	Thru	Right	Other	App. Total	Int. Total
Peak Hour Analysis From 10:00 AM to 01:45 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 01:00 PM																					
01:00 PM	2	**3**	**1**	0	**6**	0	1	0	0	1	**1**	2	**1**	0	4	**1**	2	**2**	0	**5**	16
01:15 PM	**3**	1	0	0	4	**1**	2	**2**	0	5	0	0	0	0	0	0	**4**	0	0	4	13
01:30 PM	1	3	1	0	5	0	**6**	1	0	**7**	0	1	1	0	2	1	2	0	0	3	**17**
01:45 PM	0	1	1	0	2	0	2	1	0	3	1	**4**	0	0	**5**	0	4	0	0	4	14
Total Volume	6	8	3	0	17	1	11	4	0	16	2	7	2	0	11	2	12	2	0	16	60
% App. Total	35.3	47.1	17.6	0		6.2	68.8	25	0		18.2	63.6	18.2	0		12.5	75	12.5	0		
PHF	.500	.667	.750	.000	.708	.250	.458	.500	.000	.571	.500	.438	.500	.000	.550	.500	.750	.250	.000	.800	.882

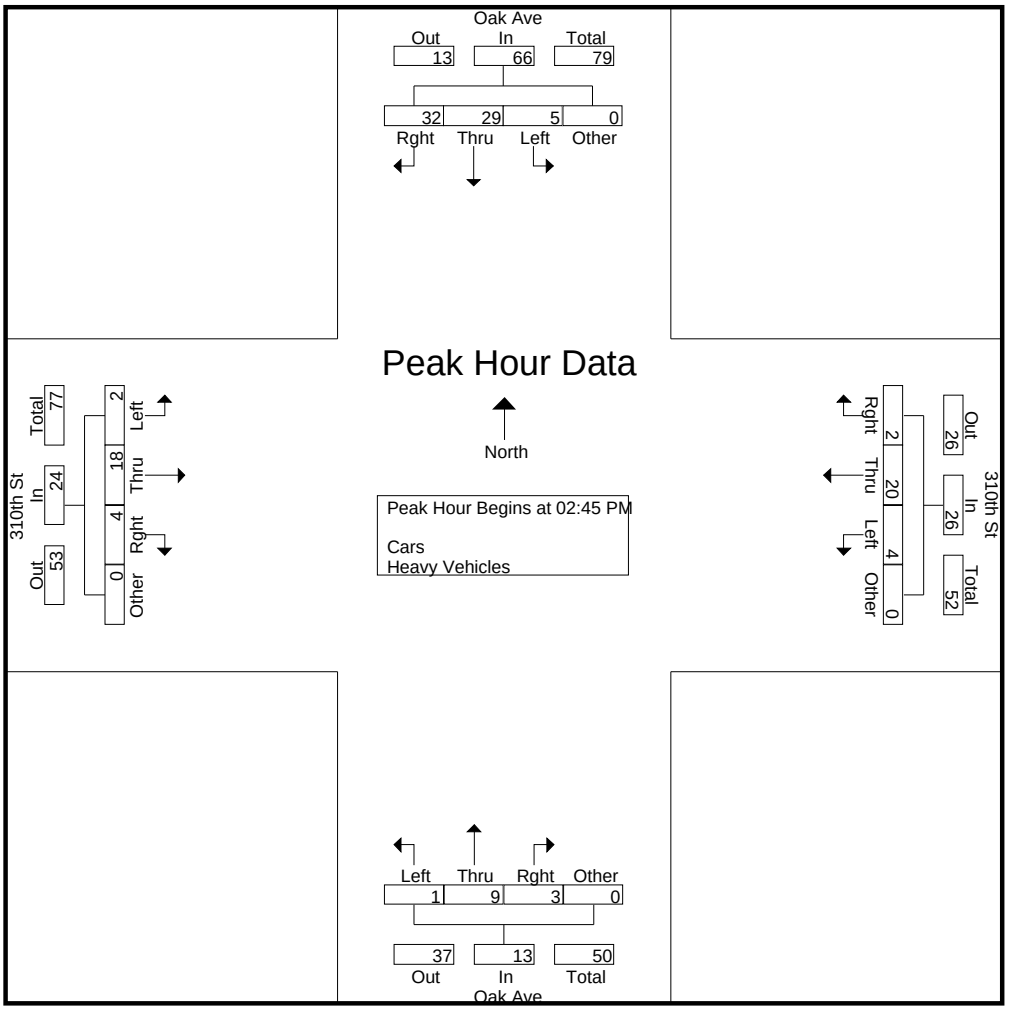


Turning Movement Count

Oak Ave & 310th St
Hancock County TEAP
Forest City, IA
122.1000.01D

File Name : CNT_TMC_Oak-310th_24HR_2022-07-20
Site Code :
Start Date : 7/20/2022
Page No : 7

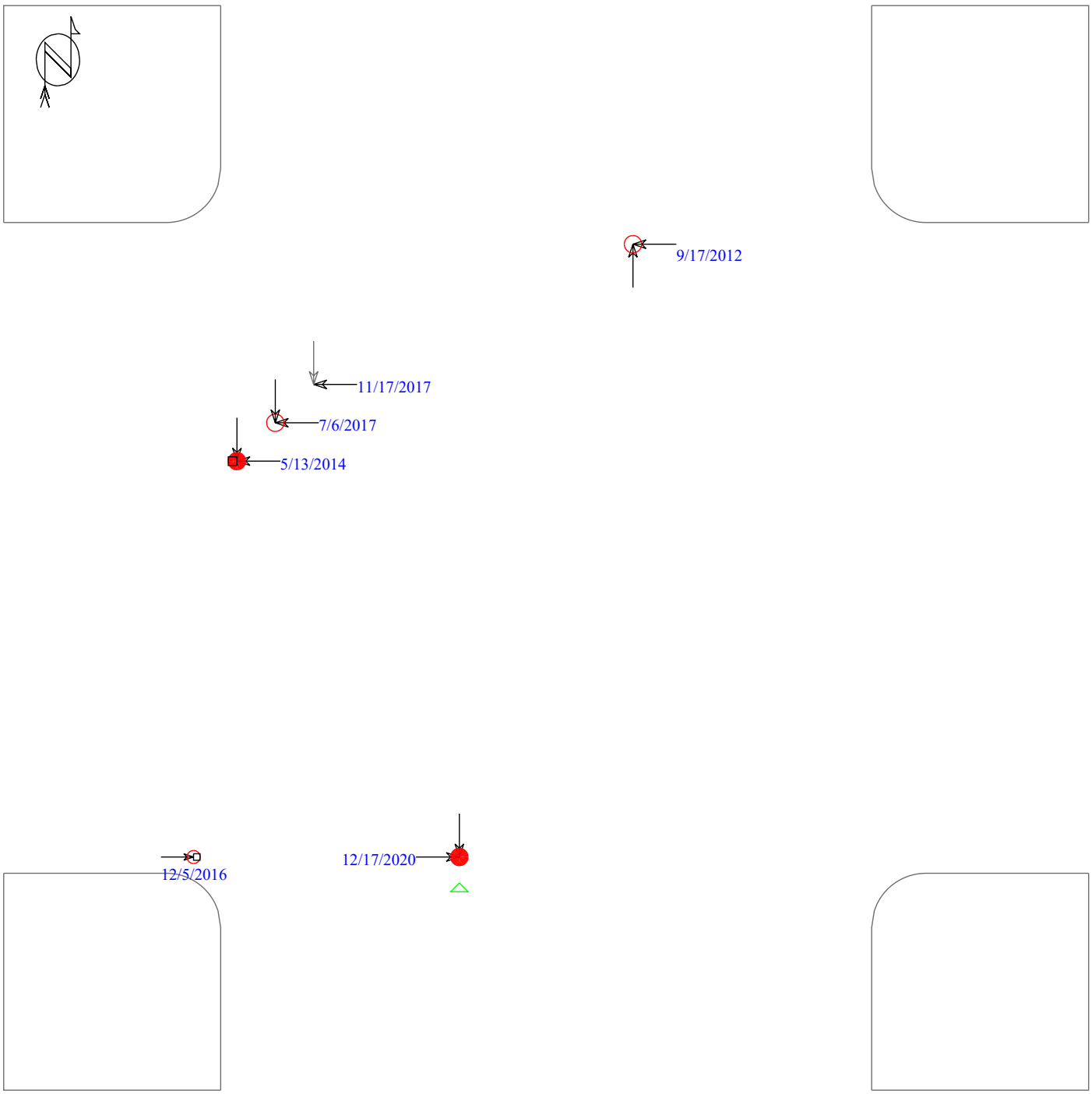
	Oak Ave SB					310th St WB					Oak Ave NB					310th St EB					
Start Time	Left	Thru	Right	Other	App. Total	Left	Thru	Right	Other	App. Total	Left	Thru	Right	Other	App. Total	Left	Thru	Right	Other	App. Total	Int. Total
Peak Hour Analysis From 02:00 PM to 11:45 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 02:45 PM																					
02:45 PM	1	**11**	6	0	18	0	**6**	**1**	0	7	0	2	0	0	2	**2**	5	0	0	7	34
03:00 PM	1	7	7	0	15	**2**	6	0	0	**8**	**1**	**3**	**1**	0	**5**	0	3	1	0	4	32
03:15 PM	**2**	3	6	0	11	0	5	1	0	6	0	2	1	0	3	0	**6**	**2**	0	**8**	28
03:30 PM	1	8	**13**	0	**22**	2	3	0	0	5	0	2	1	0	3	0	4	1	0	5	**35**
Total Volume	5	29	32	0	66	4	20	2	0	26	1	9	3	0	13	2	18	4	0	24	129
% App. Total	7.6	43.9	48.5	0		15.4	76.9	7.7	0		7.7	69.2	23.1	0		8.3	75	16.7	0		
PHF	.625	.659	.615	.000	.750	.500	.833	.500	.000	.813	.250	.750	.750	.000	.650	.250	.750	.500	.000	.750	.921



Oak Ave

6 Crashes

Clear



Straight
Stopped
Unknown
Backing
Overtaking
Sideswipe

Parked
Erratic
Out of control
Right turn
Left turn
U-turn

Pedestrian
Bicycle
Injury
Fatality
Nighttime
DUI

Fixed objects:

General
Signal
Tree
Pole
Curb
Animal

3rd vehicle
Extra data

Crash Magic Online 7/19/2022

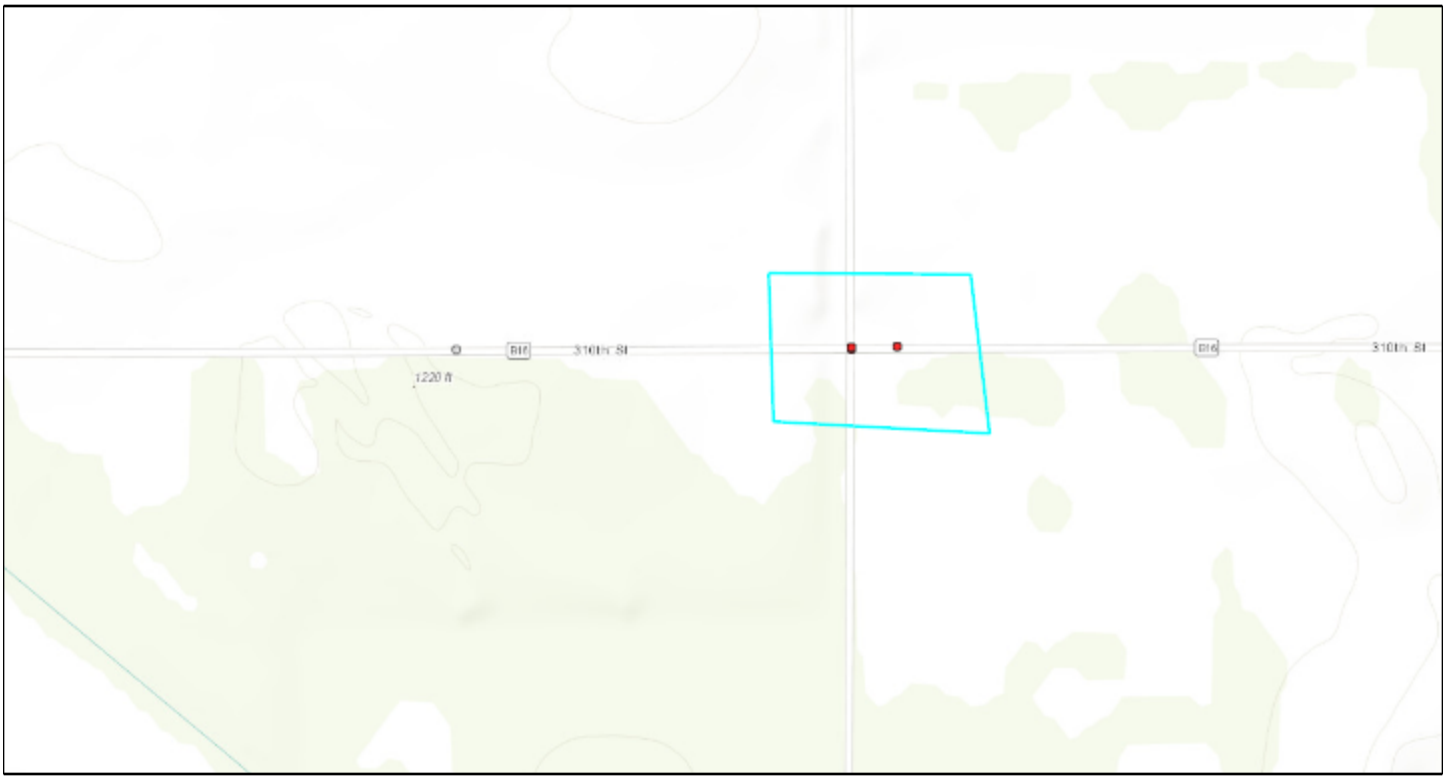
Iowa Crash Analysis Tool
Quick Report
2012-2021

Crash Severity	6
Fatal Crash	2
Suspected Serious Injury Crash	1
Suspected Minor Injury Crash	0
Possible/Unknown Injury Crash	2
Property Damage Only	1

Injury Status Summary	9
Fatalities	3
Suspected serious/incapacitating	2
Suspected minor/non-incapacitating	2
Possible (complaint of pain/injury)	1
Unknown	1

Property/Vehicles/Occupants	
Property Damage Total (dollars):	117,000.00
Average (per crash dollars):	19,500.00
Total Vehicles:	12.00
Average (per crash):	2.00
Total Occupants:	19.00
Average (per crash):	3.17

Average Severity	
Fatalities/Fatal Crash:	1.50
Fatalities/Crash:	0.50
Injuries/Crash:	0.83
Major Injuries/Crash:	0.33
Minor Injuries/Crash:	0.33
Possible/Unknown Injuries/Crash:	0.17



Major Cause			6
Animal	0	Ran traffic signal	0
Ran stop sign	3	Failed to yield to emergency vehicle	0
FTYROW: At uncontrolled intersection	0	FTYROW: Making right turn on red signal	0
FTYROW: From stop sign	2	FTYROW: From yield sign	0
FTYROW: Making left turn	0	FTYROW: From driveway	0
FTYROW: From parked position	0	FTYROW: To pedestrian	0
FTYROW: Other	0	Drove around RR grade crossing gates	0
Disregarded RR Signal	0	Crossed centerline (undivided)	0
Crossed median (divided)	0	Traveling wrong way or on wrong side of road	0
Aggressive driving/road rage	0	Driving too fast for conditions	1
Exceeded authorized speed	0	Improper or erratic lane changing	0
Operating vehicle in an reckless, erratic, ca...	0	Followed too close	0
Passing: On wrong side	0	Passing: Where prohibited by signs/markings	0
Passing: With insufficient distance/inadequa...	0	Passing: Through/around barrier	0
Passing: Other passing	0	Made improper turn	0
Driver Distraction: Manual operation of an e...	0	Driver Distraction: Talking on a hand-held d...	0
Driver Distraction: Talking on a hands free ...	0	Driver Distraction: Adjusting devices (radio...	0
Driver Distraction: Other electronic device ...	0	Driver Distraction: Passenger	0
Driver Distraction: Unrestrained animal	0	Driver Distraction: Reaching for object(s)/f...	0
Driver Distraction: Inattentive/lost in thou...	0	Driver Distraction: Other interior distracti...	0
Driver Distraction: Exterior distraction	0	Ran off road - right	0
Ran off road - straight	0	Ran off road - left	0
Lost control	0	Swerving/Evasive Action	0
Over correcting/over steering	0	Failed to keep in proper lane	0
Failure to signal intentions	0	Traveling on prohibited traffic way	0
Vehicle stopped on railroad tracks	0	Other: Vision obstructed	0
Other: Improper operation	0	Other: Disregarded warning sign	0
Other: Disregarded signs/road markings	0	Other: Illegal off-road driving	0
Downhill runaway	0	Separation of units	0
Towing improperly	0	Cargo/equipment loss or shift	0
Equipment failure	0	Oversized load/vehicle	0
Other: Getting off/out of vehicle	0	Failure to dim lights/have lights on	0
Improper backing	0	Improper starting	0
Illegally parked/unattended	0	Driving less than the posted speed limit	0
Operator inexperience	0	Other	0
Unknown	0	Not reported	0
Other: No improper action	0		

Time of Day/Day of Week

Day of Week	12 AM to 2 AM	2 AM to 4 AM	4 AM to 6 AM	6 AM to 8 AM	8 AM to 10 AM	10 AM to Noon	Noon to 2 PM	2 PM to 4 PM	4 PM to 6 PM	6 PM to 8 PM	8 PM to 10 PM	10 PM to 12 AM	Not reported	Total
Sunday	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Monday	0	0	0	1	0	0	1	0	0	0	0	0	0	2
Tuesday	0	0	0	0	0	0	0	0	1	0	0	0	0	1
Wednesday	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Thursday	0	0	0	0	1	0	1	0	0	0	0	0	0	2
Friday	0	0	0	0	0	0	0	0	1	0	0	0	0	1
Saturday	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	1	1	0	2	0	2	0	0	0	0	6

Manner of Crash Collision	6
Non-collision (single vehicle)	1
Head-on (front to front)	0
Rear-end (front to rear)	0
Angle, oncoming left turn	0
Broadside (front to side)	4
Sideswipe, same direction	0
Sideswipe, opposite direction	0
Rear to rear	0
Rear to side	0
Not reported	0
Other	0
Unknown	1

Surface Conditions	6
Dry	3
Wet	1
Ice/frost	1
Snow	0
Slush	0
Mud, dirt	0
Water (standing or moving)	0
Sand	0
Oil	0
Gravel	0
Not reported	0
Other	0
Unknown	1

Fixed Object Struck			12
Bridge overhead structure	0	Bridge pier or support	0
Bridge/bridge rail parapet	0	Curb/island/raised median	0
Ditch	2	Embankment	0
Ground	0	Culvert/pipe opening	0
Guardrail - face	0	Guardrail - end	0
Concrete traffic barrier (median or right sid...	0	Other traffic barrier	0
Cable barrier	0	Impact attenuator/crash cushion	0
Utility pole/light support	0	Traffic sign support	0
Traffic signal support	0	Other post/pole/support	0
Fire hydrant	0	Mailbox	0
Tree	0	Landscape/shrubbery	0
Snow bank	0	Fence	0
Wall	0	Building	0
Other fixed object	0	None (no fixed object struck)	10

Driver Age/Driver Gender					
Driver Age - 5 year Bins	Female	Male	Not reported	Unknown	**Total**
< 14	0	0	0	0	0
= 14	0	0	0	0	0
= 15	0	0	0	0	0
= 16	0	0	0	0	0
= 17	1	0	0	0	1
= 18	0	0	0	0	0
= 19	0	0	0	0	0
= 20	0	0	0	0	0
>= 21 and <= 24	0	0	0	0	0
>= 25 and <= 29	1	3	0	0	4
>= 30 and <= 34	0	0	0	0	0
>= 35 and <= 39	0	0	0	0	0
>= 40 and <= 44	1	0	0	0	1
>= 45 and <= 49	0	0	0	0	0
>= 50 and <= 54	0	1	0	0	1
>= 55 and <= 59	1	0	0	0	1
>= 60 and <= 64	0	1	0	0	1
>= 65 and <= 69	0	0	0	0	0
>= 70 and <= 74	1	0	0	0	1
>= 75 and <= 79	0	1	0	0	1
>= 80 and <= 84	0	0	0	0	0
>= 85 and <= 89	0	0	0	0	0
>= 90 and <= 94	0	0	0	0	0
>= 95	0	0	0	0	0
Not reported	0	0	0	0	0
Unknown	0	0	1	0	1
Total	5	6	1	0	12

Drug/Alcohol Related	**6**
Drug	0
Alcohol (< Statutory)	0
Alcohol (Statutory)	0
Drug and Alcohol (< Statutory)	0
Drug and Alcohol (Statutory)	0
Refused	0
Under Influence of Alcohol/Drugs/Medications	0
None Indicated	6

Alcohol Test Given	**12**
None	10
Blood	0
Urine	1
Breath	0
Vitreous	0
Refused	0
Not reported	1

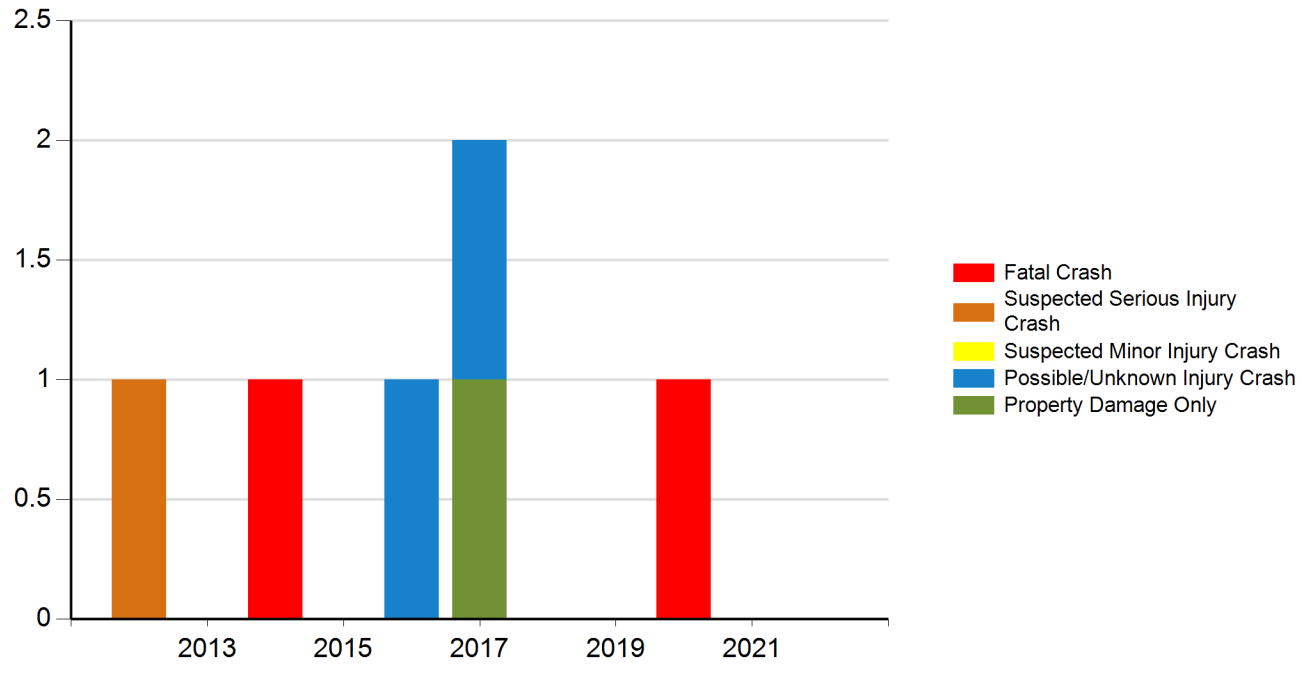
Drug Test Given	**12**
None	10
Blood	0
Urine	1
Breath	0
Vitreous	0
Refused	0
Not reported	1

Drug Test Result	**4**
Negative	0
Cannabis	0
Central Nervous System depressants	0
Central Nervous System stimulants	0
Hallucinogens	0
Inhalants	0
Narcotic Analgesics	0
Dissociative Anesthetic (PCP)	0
Prescription Drug	0
Not reported	4
Other	0

Crash Severity - Annual

Crash Year	Fatal Crash	Suspected Serious Injury Crash	Suspected Minor Injury Crash	Possible/Unknown Injury Crash	Property Damage Only	**Total**
2012	0	1	0	0	0	1
2013	0	0	0	0	0	0
2014	1	0	0	0	0	1
2015	0	0	0	0	0	0
2016	0	0	0	1	0	1
2017	0	0	0	1	1	2
2018	0	0	0	0	0	0
2019	0	0	0	0	0	0
2020	1	0	0	0	0	1
2021	0	0	0	0	0	0
2022	0	0	0	0	0	0
Total	2	1	0	2	1	6

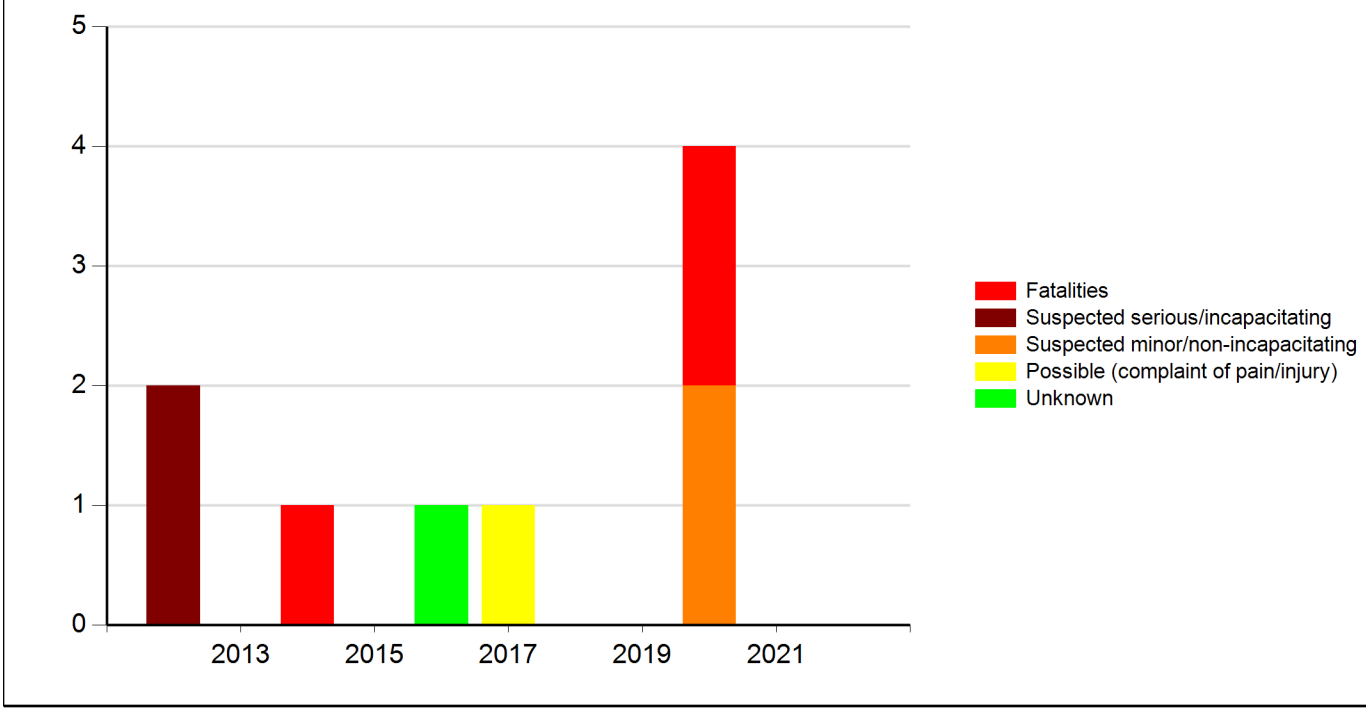
Severity/Year



Injury Status - Annual

Crash Year	Fatalities	Suspected serious/incapacitating	Suspected minor/non-incapacitating	Possible (complaint of pain/injury)	Unknown	Total
2012	0	2	0	0	0	2
2013	0	0	0	0	0	0
2014	1	0	0	0	0	1
2015	0	0	0	0	0	0
2016	0	0	0	0	1	1
2017	0	0	0	1	0	1
2018	0	0	0	0	0	0
2019	0	0	0	0	0	0
2020	2	0	2	0	0	4
2021	0	0	0	0	0	0
2022	0	0	0	0	0	0
Total	3	2	2	1	1	9

Injury Status/Year



Meeting the following criteria

Jurisdiction: Statewide
Year: 2012, 2013, 2014, 2015, 2016, 2017, 2018, 2019, 2020, 2021
Map Selection: Yes
Filter: None

Analyst Information

HCS7 Two-Way Stop-Control Report

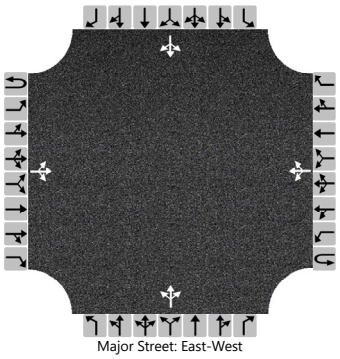
General Information

Analyst	Tim Crouch
Agency/Co.	Snyder & Associates
Date Performed	8/11/2022
Analysis Year	2022
Time Analyzed	PM Peak Hour
Intersection Orientation	East-West
Project Description	Oak Ave & 310th St

Site Information

Intersection	Oak Ave & 310th St
Jurisdiction	Hancock County
East/West Street	310th St
North/South Street	Oak Ave
Peak Hour Factor	0.92
Analysis Time Period (hrs)	1.00

Lanes


Major Street: East-West

Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority	1U	1	2	3	4U	4	5	6		7	8	9		10	11	12
Number of Lanes	0	0	1	0	0	0	1	0		0	1	0		0	1	0
Configuration			LTR				LTR				LTR				LTR	
Volume (veh/h)		2	18	4		4	20	2		1	9	3		5	29	32
Percent Heavy Vehicles (%)		3				3				3	3	3		3	3	3
Proportion Time Blocked																
Percent Grade (%)										0				0		
Right Turn Channelized																
Median Type | Storage			Undivided													

Critical and Follow-up Headways

Base Critical Headway (sec)		4.1				4.1				7.1	6.5	6.2		7.1	6.5	6.2
Critical Headway (sec)		4.13				4.13				7.13	6.53	6.23		7.13	6.53	6.23
Base Follow-Up Headway (sec)		2.2				2.2				3.5	4.0	3.3		3.5	4.0	3.3
Follow-Up Headway (sec)		2.23				2.23				3.53	4.03	3.33		3.53	4.03	3.33

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)		2				4					14				72	
Capacity, c (veh/h)		1584				1584					871				929	
v/c Ratio		0.00				0.00					0.02				0.08	
95% Queue Length, Q_{95} (veh)		0.0				0.0					0.0				0.3	
Control Delay (s/veh)		7.3				7.3					9.2				9.2	
Level of Service (LOS)		A				A					A				A	
Approach Delay (s/veh)		0.6				1.1				9.2				9.2		
Approach LOS										A				A		

HCS7 All-Way Stop Control Report

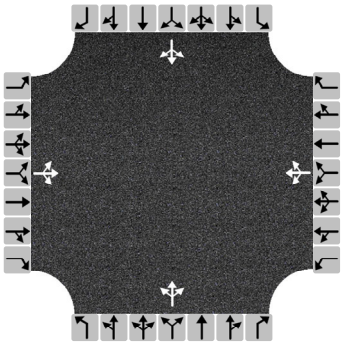
General Information

Analyst	Tim Crouch
Agency/Co.	Snyder & Associates
Date Performed	8/31/2022
Analysis Year	2022
Analysis Time Period (hrs)	1.00
Time Analyzed	PM Peak Hour
Project Description	Oak Ave & 310th St

Site Information

Intersection	Oak Ave & 310th St
Jurisdiction	Hancock County
East/West Street	310th St
North/South Street	Oak Ave
Peak Hour Factor	0.92

Lanes



Vehicle Volume and Adjustments

Approach	Eastbound			Westbound			Northbound			Southbound		
Movement	L	T	R	L	T	R	L	T	R	L	T	R
Volume	2	18	4	4	20	2	1	9	3	5	29	32
% Thrus in Shared Lane												
Lane	L1	L2	L3	L1	L2	L3	L1	L2	L3	L1	L2	L3
Configuration	LTR			LTR			LTR			LTR		
Flow Rate, v (veh/h)	26			28			14			72		
Percent Heavy Vehicles	3			3			3			3		

Departure Headway and Service Time

Initial Departure Headway, hd (s)	3.20			3.20			3.20			3.20		
Initial Degree of Utilization, x	0.023			0.025			0.013			0.064		
Final Departure Headway, hd (s)	4.07			4.14			4.01			3.81		
Final Degree of Utilization, x	0.029			0.032			0.016			0.076		
Move-Up Time, m (s)	2.0			2.0			2.0			2.0		
Service Time, ts (s)	2.07			2.14			2.01			1.81		

Capacity, Delay and Level of Service

Flow Rate, v (veh/h)	26			28			14			72		
Capacity	884			870			898			946		
95% Queue Length, Q_{95} (veh)	0.1			0.1			0.0			0.2		
Control Delay (s/veh)	7.2			7.3			7.1			7.1		
Level of Service, LOS	A			A			A			A		
Approach Delay (s/veh)	7.2			7.3			7.1			7.1		
Approach LOS	A			A			A			A		
Intersection Delay, s/veh | LOS	7.2						A					

Low-Cost Safety Improvements for Rural Intersections

Introduction

The slowing, stopping, crossing, and turning of traffic at intersections represents potential vehicle conflicts, which may result in crashes at local and rural intersections. More than 80 percent of rural intersection fatalities occur at unsignalized intersections.[1,2] Furthermore, rural unsignalized intersections often have high-speed approaches, which contributes to the increased severity of any crashes that do occur.

The most severe crash type at unsignalized intersections is a right-angle crash, which typically occurs when two vehicles approaching at a perpendicular angle collide due to one vehicle failing to stop or yield the right-of-way. Out of every 100 reported angle crashes at unsignalized intersections, it is estimated that between 1 to 3 fatalities and 5 to 15 serious injuries result. Therefore, it is important that local and rural road owners understand and know how to identify both the safety concern and the types of countermeasures that address unsignalized intersection crashes.

Rural Intersection Characteristics and Identifying Opportunities

Intersections along rural roadways and intersections owned by local road agencies often have the following characteristics:

- Low traffic volumes on minor or all approaches;
- Unsignalized and mainly stop-controlled;
- Lack of turn lanes and lighting; and
- Skewed angle or limited sight distance.

Local and rural road owners need roadway information and crash data to help identify intersections with the potential for safety improvement. This information can come from sources such as project plans, aerial photos, and State or local crash databases populated by crash reports completed by law enforcement. If crash databases are not accessible, local and rural road agencies can often use the crash reports themselves, including the crash narrative descriptions, to identify certain risk factors and attributes, such as:

- Crash locations or approaches;
- Crash dates and times;
- Crash types and severity;
- Driver and vehicle characteristics;
- Environmental conditions; and
- Sequence of events and contributing circumstances.

Countermeasure Options

Rural intersection safety can be improved by implementing low-cost improvements that address sight distance, intersection recognition, visibility and conspicuity of traffic control devices, and roadway geometry issues. For example, adding or enhancing signs, pavement markings, delineators, channelizing islands, and flashing beacons at intersections can reduce crash risk. Sightlines should be evaluated with respect to vegetation and roadside features in order to establish adequate stopping and intersection sight distances. Intersections that are skewed (e.g., not perpendicular) may be modified to intersect at a more desirable angle (closer to 90 degrees) or controlled with regulatory signs or signals.

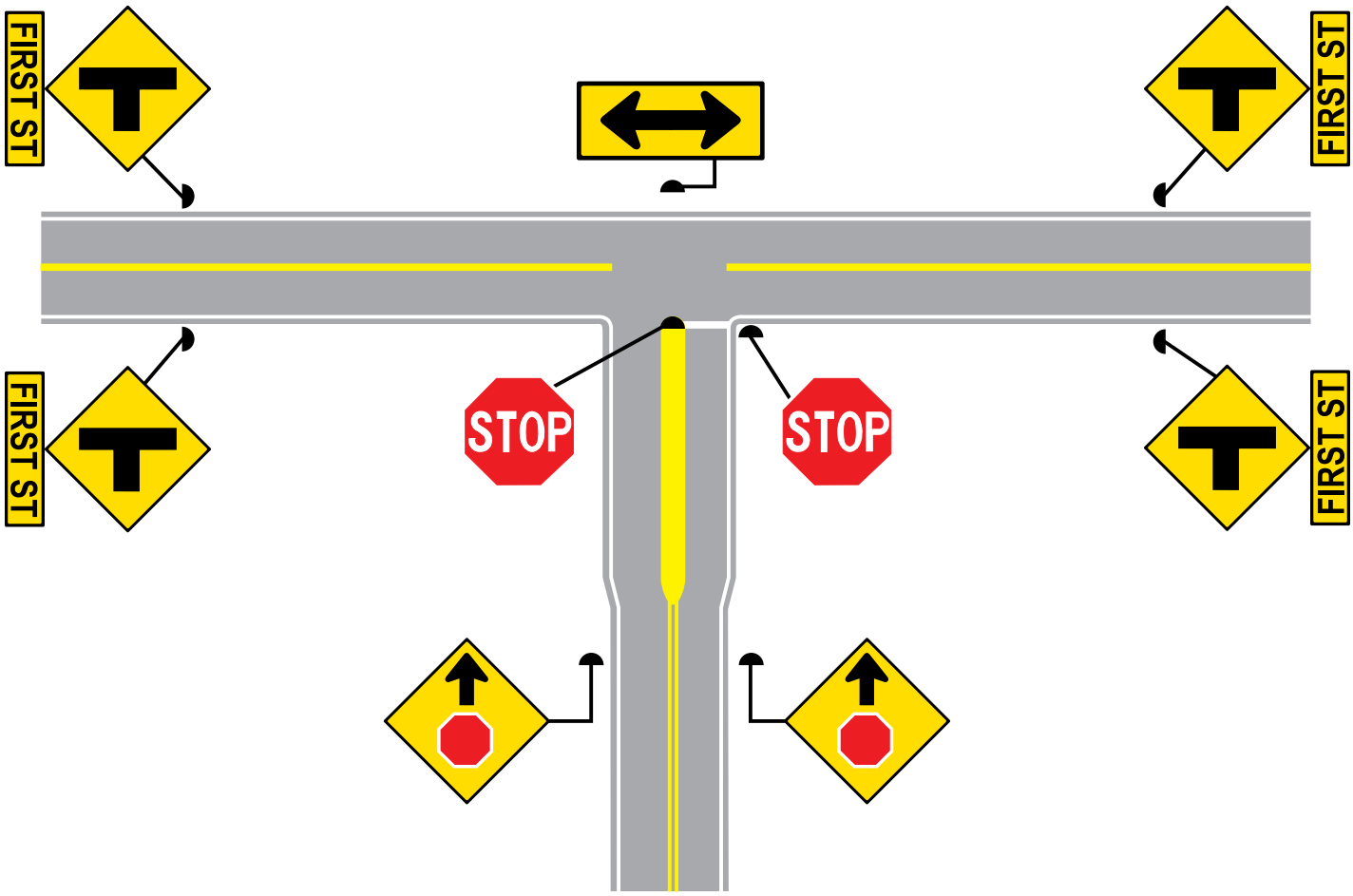
The Federal Highway Administration (FHWA) encourages agencies to consider the following treatments, either on a systemic basis or at spot locations, although the systemic approach may have a greater cumulative impact on reducing fatal and serious injury crashes. The table below shows treatments for stop-controlled intersections, the associated crash modification factor (CMF),[3] suggested crash thresholds in which the treatments should be applied, typical cost of implementation, and additional considerations. For example, the figure on the following page shows a basic set of sign and marking improvements that has the potential to reduce crashes by 30 percent.

Low-Cost Safety Treatments for Stop-Controlled Intersections

Countermeasure	Safety Issue Addressed	Crash Modification Factor	Typical Minimum Rural Crash Threshold (All Severities)	Additional Implementation Factors	Typical Implementation Cost Range per Intersection
Basic set of sign and marking improvements (as shown in Figure 3)	Recognition of stop-controlled intersection during day or night conditions	0.70	4-5 crashes in 5 years	None	$5,000 to $8,000
Either: a) flashing solar powered LED beacons on advance intersection warning signs and STOP signs, or b) flashing overhead intersection beacons	Recognition of stop-controlled intersection during day or night conditions	0.90 (0.87 for right angle crashes)	8-10 crashes in 5 years	None	$5,000 to $15,000
Dynamic warning sign which advises through traffic that a stopped vehicle is at the intersection and may enter the intersection. Dynamic warning sign activated by vehicle presence or excessive approach speed.	Limited sight distance as a result of geometry and/or vehicle speed	Unknown	10-20 crashes in 5 years	5 angle crashes in 5 years and inadequate sight distance from the stop approach	$10,000 to $25,000
Transverse rumble strips across the stop approach lanes in rural areas where noise is not a concern and running STOP signs is a problem ("Stop Ahead" pavement marking legend if noise is a concern)	Recognition of stop-controlled intersection	0.72 (transverse rumble strips) 0.85 ("Stop Ahead" pavement markings)	3 running STOP sign crashes in 5 years	Inadequate stopping sight distance on the stop approach	$3,000 to $10,000
Dynamic warning sign on the stop approach to advise high-speed approach traffic that a "stop" condition is ahead	Limited sight distance as a result of geometry or vehicle speed	Unknown	5 running STOP sign crashes in 5 years	Inadequate stopping sight distance on the stop approach	$10,000 to $25,000

Countermeasure	Safety Issue Addressed	Crash Modification Factor	Typical Minimum Rural Crash Threshold (All Severities)	Additional Implementation Factors	Typical Implementation Cost Range per Intersection
Extension of the through edge line using short skip pattern to assist drivers to stop at the optimum point	Recognition of stop location	Unknown	5 crashes in 5 years	Wide throat and observed vehicles stopping too far back from the intersection	Less than $1,000
Retroreflective strips on sign posts may increase attention to the sign, particularly at night	Recognition of stop-controlled intersection, especially at night	Unknown	5 crashes in 5 years	Sign visibility or conspicuity significantly degraded, particularly at night	Less than $1,000

Source: Federal Highway Administration, *Intersection Safety Implementation Plan Process*, November 2009. Available at: http://safety.fhwa.dot.gov/intersection/resources/intersaf_ipp0709/fhwasa10010.pdf



Examples of Basic Low-Cost Countermeasures for Stop-Controlled Intersections –
Double Up Oversize Warning Signs, Double Stop Signs, Traffic Island on Stop Approach (if feasible),
Street Name Signs, Stop Bars, and Double Warning Arrow at the Stem of T-Intersections

Resources

The following resources provide more details related to intersection safety:

Federal Highway Administration, Intersection Safety webpage: http://safety.fhwa.dot.gov/intersection/

Federal Highway Administration, Rural Intersection Resources webpage: http://safety.fhwa.dot.gov/intersection/rural/

In addition, the following publications can be consulted:

Federal Highway Administration, *Signalized Intersections: Informational Guide*, FHWA-SA-13-027 (Washington, DC: July 2013).
Available at: http://safety.fhwa.dot.gov/intersection/signalized/13027/fhwasa13027.pdf

Federal Highway Administration, *Intersection Safety: A Manual for Local Rural Road Owners*, FHWA-SA-11-08 (Washington DC: January 2011).
Available at: http://safety.fhwa.dot.gov/local_rural/training/fhwasa1108/index.cfm

Transportation Research Board, *NCHRP Report 500: Guidance for Implementation of the AASHTO Strategic Highway Safety Plan, Volume 12: A Guide for Reducing Collisions at Signalized Intersections,* National Cooperative Highway Research Program (TRB: Washington, DC, 2005).
Available at: http://onlinepubs.trb.org/onlinepubs/nchrp/nchrp_rpt_500v12.pdf

Transportation Research Board, *NCHRP Report 500: Guidance for Implementation of the AASHTO Strategic Highway Safety Plan, Volume 05: A Guide for Addressing Unsignalized Intersection Collisions,* National Cooperative Highway Research Program (TRB: Washington, DC, 2003).
Available at: http://onlinepubs.trb.org/onlinepubs/nchrp/nchrp_rpt_500v5.pdf

[1] University of Minnesota, Center for Transportation Studies website, accessed February 4, 2014: http://www.its.umn.edu/Research/FeaturedStudies/intersections/

[2] Federal Highway Administration, *Intersection Safety: A Manual for Local Rural Road Owners,* FHWA-SA-11-08 (Washington DC: January 2011). Available at: http://safety.fhwa.dot.gov/local_rural/training/fhwasa1108/index.cfm

[3] A crash modification factor (CMF) is a measure of the safety effectiveness of a particular treatment or design element. A CMF less than 1.0 indicates that a treatment has the potential to reduce crashes, while a CMF greater than 1.0 indicates that a treatment has the potential to increase crashes. A CMF is determined by dividing the estimated number of crashes with a safety treatment by the estimated number of crashes without a safety treatment. For example, if an intersection experiences 10 crashes per year before a treatment is applied and 8 crashes per year after a treatment is applied, the CMF for the treatment is 0.8, netting a 20 percent reduction in crashes.

Application for TRAFFIC CONTROL DEVICE TSIP FUNDS

GENERAL INFORMATION **DATE:** July 21, 2023

Location / Title of Project Humboldt County / Temporary Traffic Signals

Applicant Humboldt County

Contact Person Ben Loots Title County Engineer

Complete Mailing Address 2221 220th street

Humboldt IA 50548

Phone 515-332-2366 (Area Code) E-Mail bloots@humboldtcounty.iowa.gov

If more than one highway authority is involved in this project, please indicate and fill in the information below (use additional sheets if necessary).

Co-Applicant(s) _____

Contact Person _____ Title _____

Complete Mailing Address _____

_____

Phone _____ (Area Code) E-Mail _____

PLEASE COMPLETE THE FOLLOWING PROJECT INFORMATION:

Funding Amount

Total Safety Cost	$	55,400
Total Project Cost	$	55,400
Safety Funds Requested	$	55,400

Does this project appear on a Safety Improvement Candidate List or is there a safety study recommendation for this project?

☐ Yes – Explain _____

☒ No

Rev. 5/18

APPLICATION CERTIFICATION FOR PUBLIC AGENCY

To the best of my knowledge and belief, all information included in this application is true and accurate, including the commitment of all physical and financial resources. This application has been duly authorized by the participating public agency(ies). I understand the attached resolution(s), where applicable, binds the participating public agency(ies) to assume responsibility for any additional funds, if required, to complete the project. In addition, the participating public agency(ies) agrees to maintain any new or improved public streets or roadways for a minimum of five years.

I understand that, although this information is sufficient to secure a commitment of funds, a firm contract between the applicant and the Department of Transportation is required prior to the authorization of funds.

Representing the Humboldt County Engineer's Office

Signed: _____ 8/7/23
Signature Date Signed

Ben Loots
Printed Name

Attest: _____ 8/07/23
Signature Date Signed

DAVID POWELL
Printed Name

Resolution 2023-21
Transportation Safety Improvement Program
Grant Application

WHEREAS the Department of Transportation Traffic Safety Improvement Program operates under the rules of Iowa Administrative Code 761-Ch. 164; and

WHEREAS said program allows for the distribution of traffic safety funds to cities, counties, and the Iowa DOT for roadway safety improvements, research, studies, or public information initiatives; and

WHEREAS the Humboldt County Engineer has determined that materials funded by this grant would improve the roadway safety in Humboldt County.

THEREFORE, BE IT RESOLVED BY THE BOARD OF SUPERVISORS OF HUMBOLDT COUNTY, IOWA that this County does hereby support the attached application for Traffic Safety Improvement Program Funding.

Roll Call Vote:

Lee: Aye ✓ ;	Nay_____;	Abstain_____;	Absent_____;
Loney: Aye ✓ ;	Nay_____;	Abstain_____;	Absent_____;
Pedersen: Aye ✓ ;	Nay_____;	Abstain_____;	Absent_____;
Reimers: Aye ✓ ;	Nay_____;	Abstain_____;	Absent_____;
Underberg: Aye ✓ ;	Nay_____;	Abstain_____;	Absent_____;

PASSED AND APPROVED on August 7, 2023

Sandy Loney
Humboldt County Board of Supervisors
Chairman of the Board

ATTEST: Trish Erickson
Trish Erickson, Humboldt County Auditor

B. Narrative

Humboldt County Secondary Road Department is applying for Transportation Safety Improvement (TSIP) funds for one set of portable temporary traffic signals. The primary purpose of the temporary traffic signals would be to replace flagging operations using personnel in an effort to provide safer work zones for county maintenance crews and to move traffic through the work zone more safely and efficiently.

Humboldt County Secondary Roads is responsible for the engineering, construction, and maintenance of the county's Secondary Road System. This system includes 721 miles of rural roads, of which 205 miles are hard surfaced. Located on these roads are 73 bridges over 20 feet in length, and hundreds of smaller drainage structures.

Portable traffic signals would primarily be used on two-lane paved roads during construction & maintenance projects that would require one lane to be closed, per standard road plan TC-215. Typical projects would include PCC and HMA patching, culvert and drainage repairs, and bridge inspection. Safety benefits of using portable traffic signals include:

- Minimize of eliminate the risk to flaggers from distracted drivers
- Increasing the number of workers available to complete the task, thus reducing closure time
- Ability to leave traffic control in place overnight, or conduct nighttime operations
- Signals convey a visible and clear message to motorists

Humboldt County is requesting TSIP funding for the cost of one set of portable traffic signals with wireless traffic control solar power and vehicle detection for options. These signals will increase the safety of our work zones, for both the traveling public, and our Secondary Roads workers.

C. COST

OMJCSignal
PO Box 1594
Waterloo, IA 50704
403 Chestnut St.
Waterloo, IA 50703
800.776.5999
Fax: 319.236.1554
Email: sales@omjcsignal.com
omjcsignal.com

Quotation

Quote Number
8840

Quote Date
July 18, 2023

Page:
1

Quoted to:
ATTN: Ben Loots
HumboldtCountyIA

SHIP TO:
HumboldtCountyIA

PH: 15153322366
FAX:

Customer ID	Good Thru	Payment Terms	Sales Rep Name
Humboldt Co	8/17/23	Net 30 Days	DAVID T. KNAPP

Quantity	Item	Description	Unit Price	Extension
1.00	LDPTS	ONE PAIR OF POP-UP LIGHT DUTY TRAILERS (ONE MASTER, ONE SECONDARY) W/ WIRELESS TRAFFIC CONTROL AND SOLAR POWER	53,000.00	53,000.00
2.00	TC26-B-OMJC	VEHICLE DETECTOR	1,200.00	2,400.00

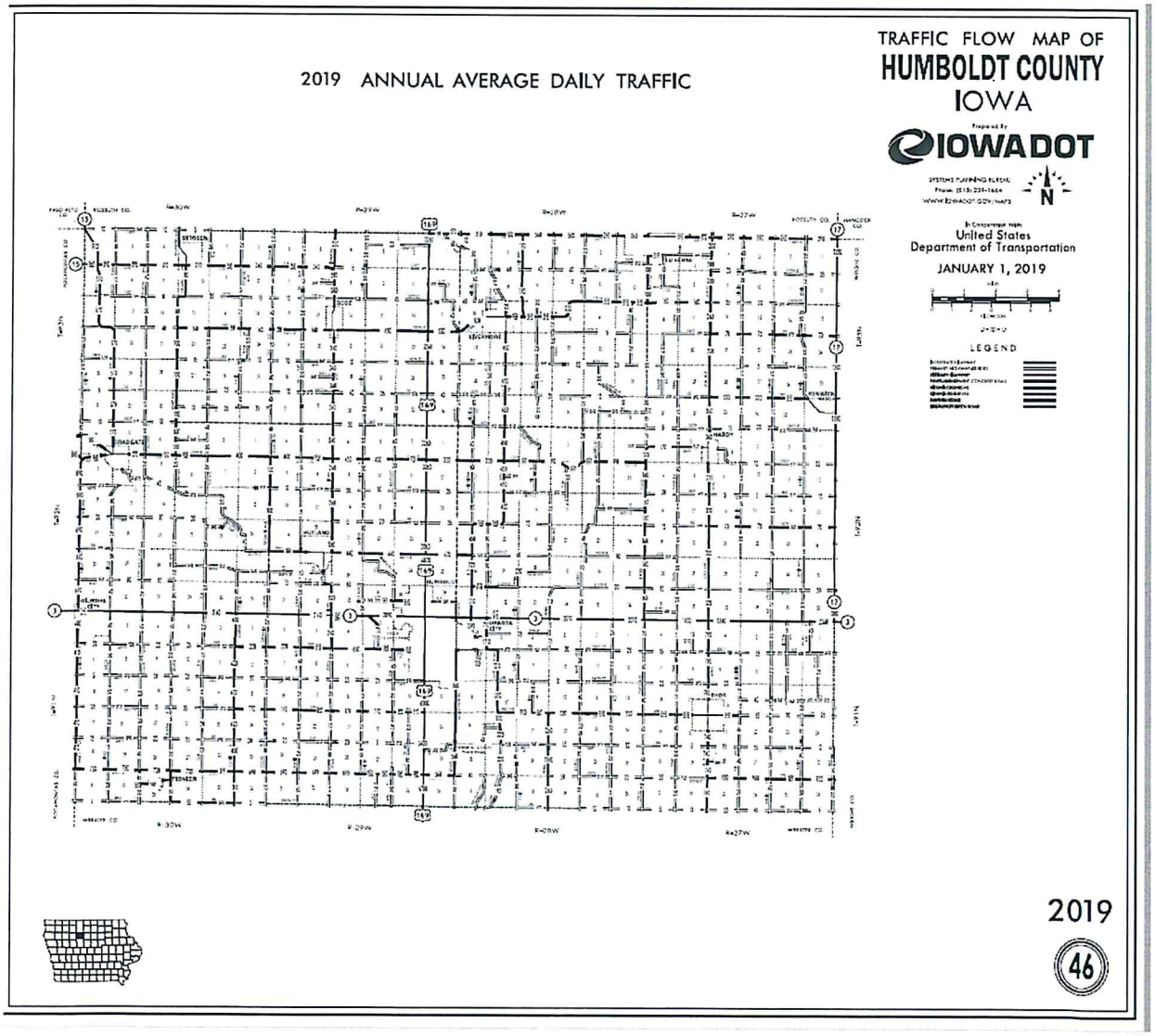
Freight & handling are in addition to the prices quoted above unless otherwise specified. All parts, materials and components are new unless otherwise specifi
OMJC has been in business since July of 1985 to serve you.

Subtota	55,400.00
Sales Ta	
Freight	
Tota	55,400.00

D. Time Schedule

- TSIP Application Due — August 15, 2023
- TSIP Award Notification — January, 2024
- TSIP Funding Available — July 1, 2024
- Purchase of Signals — July, 2024
- Implementation of Signals — August, 2024

E. Map



F. PICTURES

OMJC INTEGRITY AT THE CORE

Pop-Up LD

QPNW-234-2070

1 PERSON, 1 MINUTE

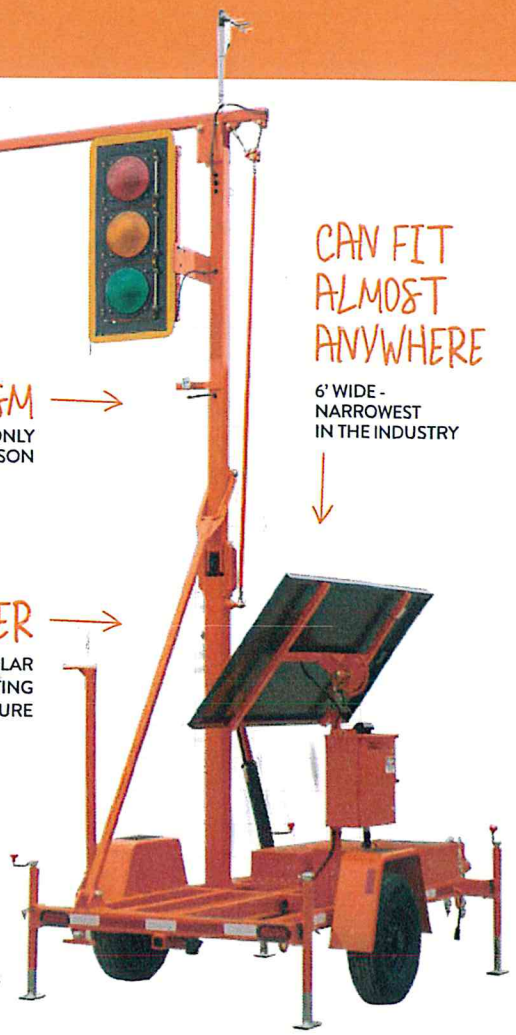
The Pop-Up LD is designed to control a single lane closure, but it is capable of far more. The 9' arm meets MUTCD requirements. Two, 3 section signal heads with 12" RYG that comply with ITE standards, can quickly be in positions mandated by the MUTCD at the mere push of a button. Because the footprint is only 6' wide (the narrowest in the industry), it can fit almost anywhere. The LD features the Intelight 2070 ATC Controller running MAXTIME software. The custom radio system allows wireless communication between OMJC Pop-Up units along with complex phasing ability. The LD comes standard with a 385 watt solar panel (adjustable on 2 axes) and 440-660Ah of AGM batteries.

MAXIMUM VISIBILITY →
180° SIGNAL ROTATION STANDARD

HYDRAULIC LIFT MECHANISM →
DEPLOY IN 1 MINUTE, UTILIZING ONLY 1 PERSON

CAN FIT ALMOST ANYWHERE
6' WIDE - NARROWEST IN THE INDUSTRY

DUAL POWER →
BATTERY CHARGED BY SOLAR OR CONNECT TO EXISTING INFRASTRUCTURE



A TRUSTED ALTERNATIVE TO THE "FLAGGER"

1.800.776.5999 sales@omjcsignal.com

Pop-Up LD

QPNW-234-2070

Pop-Up LD • STANDARD FEATURES

DEPLOYMENT	
	Vertical | Hydraulic with remote pendant
	Horizontal | Manual slide out
ARM EXTENSION	
	9'
SIGNAL HEADS	
	3 section overhead
	3 section side of mast
	12" RYG LED's, ITE compliant
	180° rotation
TRAFFIC CONTROL EQUIPMENT	
	Intelight 2070 ATC with MAXTIME software
	Actuated 8 phase, dual ring, with pedestrian movements
	Encrypted wireless connection between master and secondaries
	EDI real time conflict monitor
CHARGING SOURCE	
	DC | MPPT solar charge controller
	AC | 120V plug-in charger

Pop-Up LD • ADDITIONAL OPTIONS

DETECTION
- ☐ Microwave
- ☐ Video
- ☐ Loop

KNOCKDOWN AVAILABILITY (EMERGENCY POLE REPLACEMENT)
- ☐ Wireless Knockdown Kit (AC to DC from existing infrastructure)
- ☐ Wired Knockdown Kit (AC to DC from existing infrastructure)

PREEMPTION
- ☐ Audible
- ☐ Strobe
- ☐ GPS

COORDINATION
- ☐ GPS time based

REMOTE MANAGEMENT & ALERTING
- ☐ Cellular wireless router (Verizon, AT&T, or Sprint Certified Device)

WIRELESS MANUAL CONTROL
- ☐ Push button control with long range antenna (pilot car remote)

ADDITIONAL ADD-ONS
- ☐ Pedestrian signalization
- ☐ Auto-start generator for on-board ancillary power
- ☐ Work zone lighting
- ☐ Countdown timer

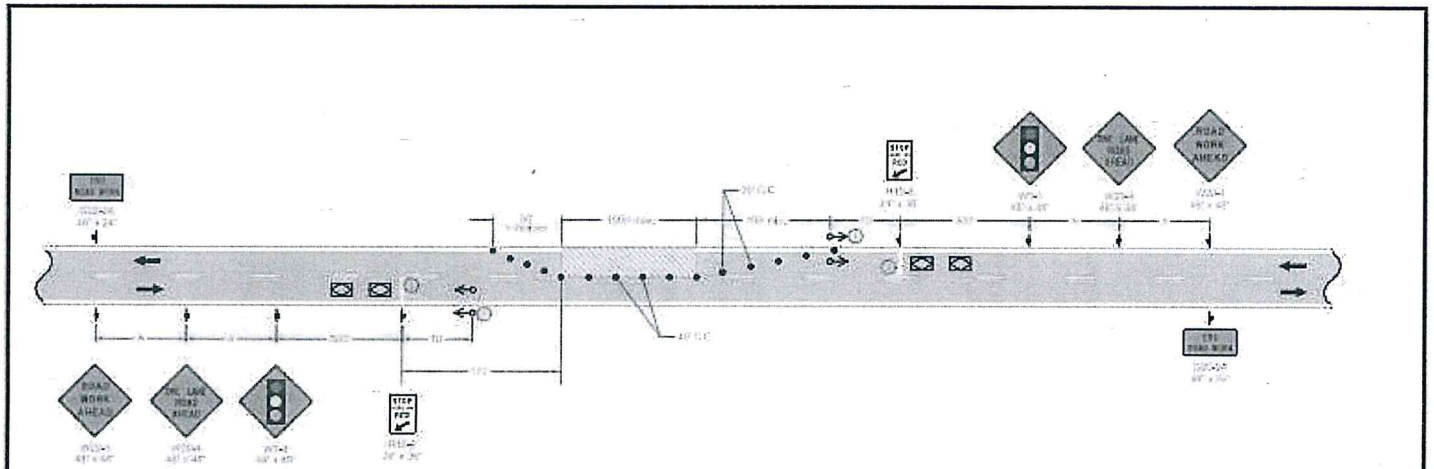
SPECIFICATIONS

CHASSIS LENGTH	112.0" (removable hitch adds 56" for 168" total)
CHASSIS WIDTH	72.0" (narrowest in the industry)
TRAVEL HEIGHT	114.0" w/ solar
STANDARD WEIGHT	2,700lbs.
CLEARANCE (UNDER ARM)	17' (meets MUTCD requirements)
BATTERIES	440-660 Ah of AGM batteries, no-spill, no-maintenance
SOLAR	(1) - 385 watt solar panel, adjustable on 2 axes

OMJC

1.800.776.5999 sales@omjcsignal.com
omjcsignal.com 403 Chestnut Street, Waterloo, IA 50703

G. Plan View



SPEED LIMIT (mph)	A
35 or less	250'
40-45	350'
50 or greater	500'

LEGEND

- Vehicle Detection Area
- Temporary Traffic Signal
- Traffic Sign
- 42" Channelizer
- Work Area
- Direction of Traffic

TIMING FOR ACTUATED SIGNALS

Recommended Settings (secs)

Yellow =	4.0
Extension =	2.5
Max. Green =	45.0
Yellow =	4.0
All Red =	(see table)

Distance between stop lines	All Red* (secs)	Distance between stop lines	All Red* (secs)
450'	0 - 15	950'	19 - 33
550'	11 - 19	1050'	21 - 36
650'	13 - 22	1150'	23 - 39
750'	15 - 24	1250'	25 - 43
850'	17 - 29	1350'	27 - 46

*All Red values based on operating speeds between 20 mph and 35 mph

This layout is for conditions lasting up to three calendar days. For situations lasting longer than three days refer to TC-216.

1. For Temporary Traffic Signals, meet the requirements of Section 2528.03 of the Standard Specifications except for the following: In lieu of a traffic responsive mounted system, signal heads may be placed on the shoulders, one on each side of the roadway. Mount shoulder signal heads a minimum of 8 feet from the bottom of the signal head to the top of the nearest surface.
2. 24-inch stop lines required during nighttime operation.

Possible Contract Items:
- Pavement Marking Items
- Pavement Markings Removed
- Temporary Traffic Signals
- Traffic Control

Possible Tabulations:
- 103-22
- 103-20

IOWADOT

STANDARD ROAD PLAN

REVISED 4 03-15-19

TC-215

SHEET 1 OF 1

Standards Approval Unit for Design Automation

LANE CLOSURE WITH SIGNALS (UP TO THREE DAYS)

G. Plan View (See TC-215)

H. Aerial Photograph – N/A

I. ICAT Crash Summary – N/A

J. Traffic Volumes – See 2019 IDOT Traffic Volumes for Humboldt County (next page)

K. Traffic Sign Layout – Per TC-215 (see Section G)

L. Benefit/Cost Ratio – Not required as per instructions

TRAFFIC FLOW MAP OF
HUMBOLDT COUNTY
IOWA

Prepared By

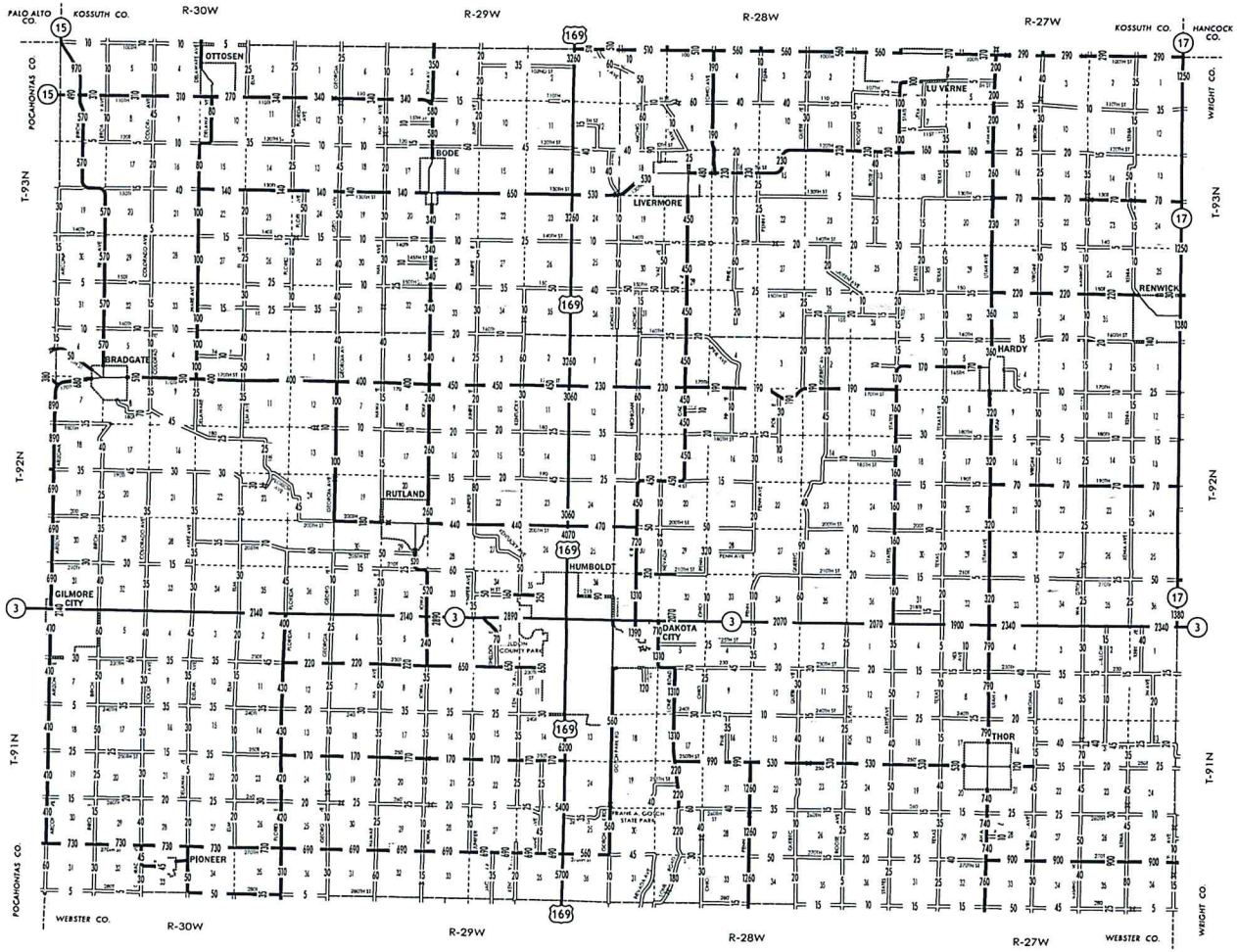
IOWADOT

SYSTEMS PLANNING BUREAU
Phone: (515) 239-1664
WWW.IOWADOT.GOV/MAPS

In Cooperation With
United States
Department of Transportation

JANUARY 1, 2019

2019 ANNUAL AVERAGE DAILY TRAFFIC

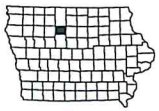


MILES
0 1 2 3 4
KILOMETERS
0 1 2 3 4 5 6

12-20-19

LEGEND

INTERSTATE HIGHWAY
PRIMARY HIGHWAY-DIVIDED
PRIMARY HIGHWAY
PORTLAND CEMENT CONCRETE ROAD
BITUMINOUS ROAD
GRAVEL ROAD
EARTH ROAD



2019

46

Application for TRAFFIC CONTROL DEVICE TSIP FUNDS

GENERAL INFORMATION **DATE:** July 21, 2023

Location / Title of Project Humboldt County / Solar flashing beacons

Applicant Humboldt County

Contact Person Ben Loots Title County Engineer

Complete Mailing Address 2221 220th street

Humboldt IA 50548

Phone 515-332-2366 (Area Code) E-Mail bloots@humboldtcounty.iowa.gov

If more than one highway authority is involved in this project, please indicate and fill in the information below (use additional sheets if necessary).

Co-Applicant(s) _____

Contact Person _____ Title _____

Complete Mailing Address _____

_____

Phone _____ (Area Code) E-Mail _____

PLEASE COMPLETE THE FOLLOWING PROJECT INFORMATION:

Funding Amount

Total Safety Cost	$ 19322.50
Total Project Cost	$ 19322.50
Safety Funds Requested	$ 19322.50

Does this project appear on a Safety Improvement Candidate List or is there a safety study recommendation for this project?

☐ Yes – Explain _____

☒ No

Rev. 5/18

APPLICATION CERTIFICATION FOR PUBLIC AGENCY

To the best of my knowledge and belief, all information included in this application is true and accurate, including the commitment of all physical and financial resources. This application has been duly authorized by the participating public agency(ies). I understand the attached resolution(s), where applicable, binds the participating public agency(ies) to assume responsibility for any additional funds, if required, to complete the project. In addition, the participating public agency(ies) agrees to maintain any new or improved public streets or roadways for a minimum of five years.

I understand that, although this information is sufficient to secure a commitment of funds, a firm contract between the applicant and the Department of Transportation is required prior to the authorization of funds.

Representing the Humboldt County Engineer's Office

Signed: Ben Loots — 8/11/23
Signature — Date Signed

Ben Loots
Printed Name

Attest: David Powell — 8/11/23
Signature — Date Signed

DAVID POWELL
Printed Name

HUMBOLDT COUNTY BOARD OF SUPERVISORS

Resolution #2023-23

A RESOLUTION ENDORSING A GRANT APPLICATION FOR TRAFFIC SAFETY IMPROVEMENT PROGRAM FUNDING (TSIP).

WHEREAS, the Iowa Department of Transportation through the Traffic Safety Improvement Program provides funding for various TSIP eligible projects; and

WHEREAS, the Board of Supervisors of Humboldt County hereby endorses the proposed project Flashing Stop sign beacons at multiple locations in Humboldt County, Iowa and;

NOW, THEREFORE BE IT RESOLVED BY THE BOARD OF SUPERVISORS THAT:

1. The County hereby commits initial funds as required by the Iowa Department of Transportation Traffic Safety Improvement Program.
2. The County hereby commits to adequately maintain the completed project for its intended public use for a minimum of 10 years following project completion.
3. The County Board of Supervisors hereby authorizes Ben Loots, Humboldt County Engineer to sign the project agreement on behalf of Humboldt County and carry the project to completion.

PASSED AND APPROVED THIS 14th DAY OF August, 2023

AYES: Loney, Lee, Vonderberg, Reimers

NAYS: _____

OTHER: Pedersen (Absent)

Sandy Loney

Chairman

Humboldt County Board of Supervisors

Attest: Trish Erickson

Trish Erickson, Humboldt County Auditor

B. Narrative

Humboldt County Secondary Road Department is applying for Transportation Safety Improvement (TSIP) funds for fifteen solar powered flashing beacons. The proposed installation locations are stop sign locations with multiple accidents, fatalities, as well as major and minor injuries. The primary purpose of the beacons is to enhance visibility and draw more attention to the driver.

Humboldt County Secondary Roads is responsible for the engineering, construction, and maintenance of the county's Secondary Road System. This system includes 721 miles of rural roads, of which 205 miles are hard surfaced. Located on these roads are 73 bridges over 20 feet in length, and hundreds of smaller drainage structures.

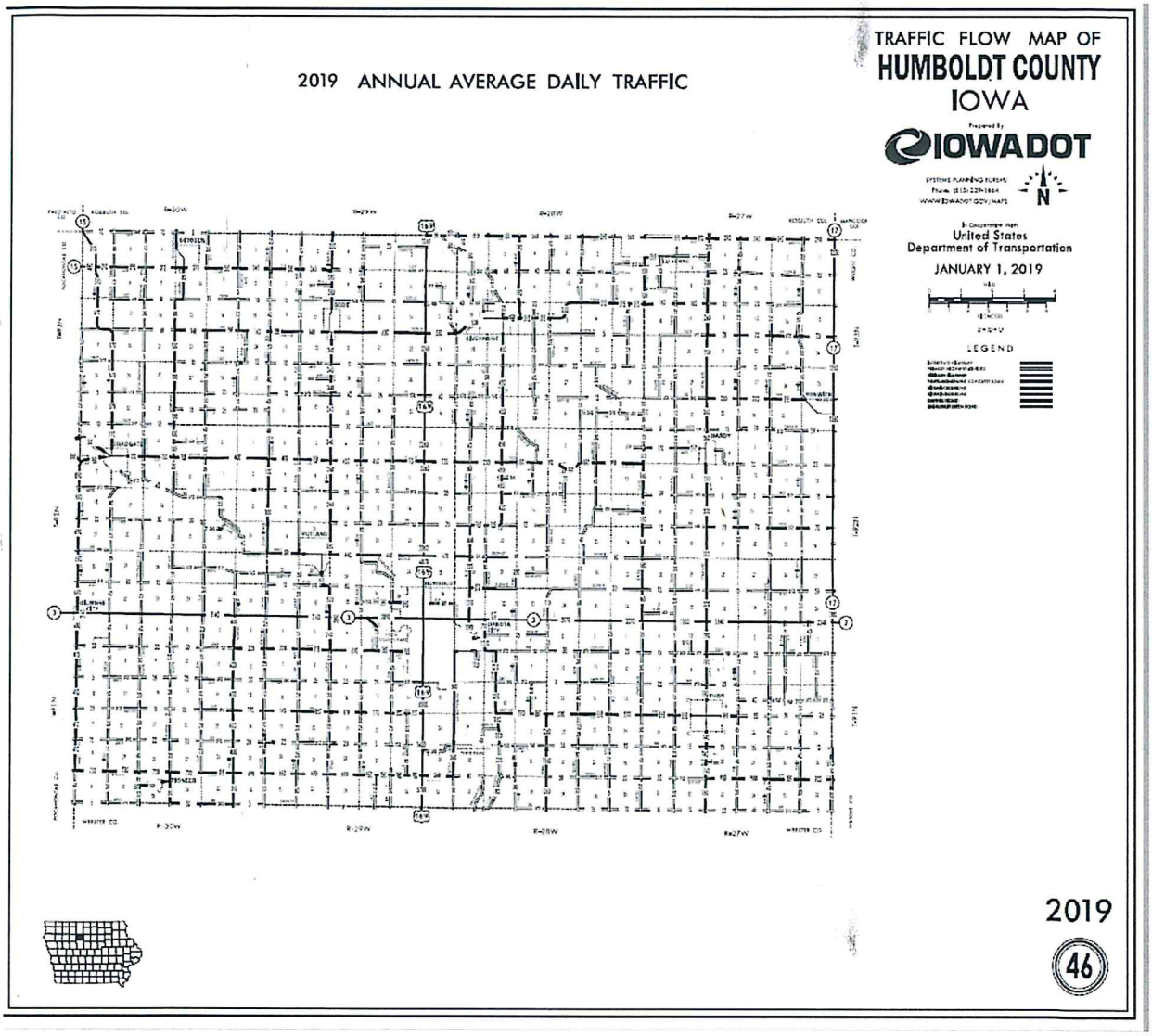
Humboldt County is requesting TSIP funding for the cost of fifteen solar powered flashing beacons. Humboldt County staff will install the signs at their own expense. The flashing red lights would help facilitate safe and efficient stopping conditions. Most importantly would improve visibility and draw more attention to the driver.

C. Cost breakdown (see attachment)

D. Time Schedule

- TSIP Application Due — August 15, 2023
- TSIP Award Notification — January, 2024
- TSIP Funding Available — July 1, 2024
- Purchase of Beacons — July, 2024
- Implementation of Beacons — August, 2024

E. Map



G. Plan View (See TC-215)

H. Aerial Photograph – N/A

I. ICAT Crash Summary – (See Attachment)

J. Traffic Volumes – See 2019 IDOT Traffic Volumes for Humboldt County (next page)

K. Traffic Sign Layout – N/A

L. Benefit/Cost Ratio – Not required as per instructions

C. Cost

ACP INTERNATIONAL

SA-SO

QUOTATION

Q 23 -47615

Quoted to David Powell **Cust Code** 703570
P 515-332-2366 **F** 515-332-5142
Email dpowell@humboldtcounty.iowa.gov
Company **HUMBOLDT COUNTY ENGINEER**
2221 220TH STREET
HUMBOLDT IA 50548

Date 08/10/2023
Quoted by KyleHessler
Lead Time 2-3 weeks
Terms Net 30

	Part # / Size	Description	Qty	UM	Unit Price	Total Price
1	hd302R	12" Red Solar Powered Flashing Beacon Includes 30 watt solar panel, 20.8AH battery, 24/7 flashing standard Black Housing (HARDWARE FOR 2" SQUARE POSTS INCLUDED)	15	EA	1228.50	18427.50
2	FREIGHT	** FREIGHT ESTIMATES ARE *ESTIMATES* ONLY ** CHARGES MAY INCREASE IF RECEIVING ADDRESS REQUIRES LIFT GATE LIMITED ACCESS FOR ENTRY OR CALL AHEAD TO CUSTOMER				

SHIP TO ADDRESS

Company: Same as above
Attention: _____
Address only: _____
Inst. Ste, etc: _____
Ship To Phone: _____
Ship To City: _____
Ship to State: _____ **Zip** _____

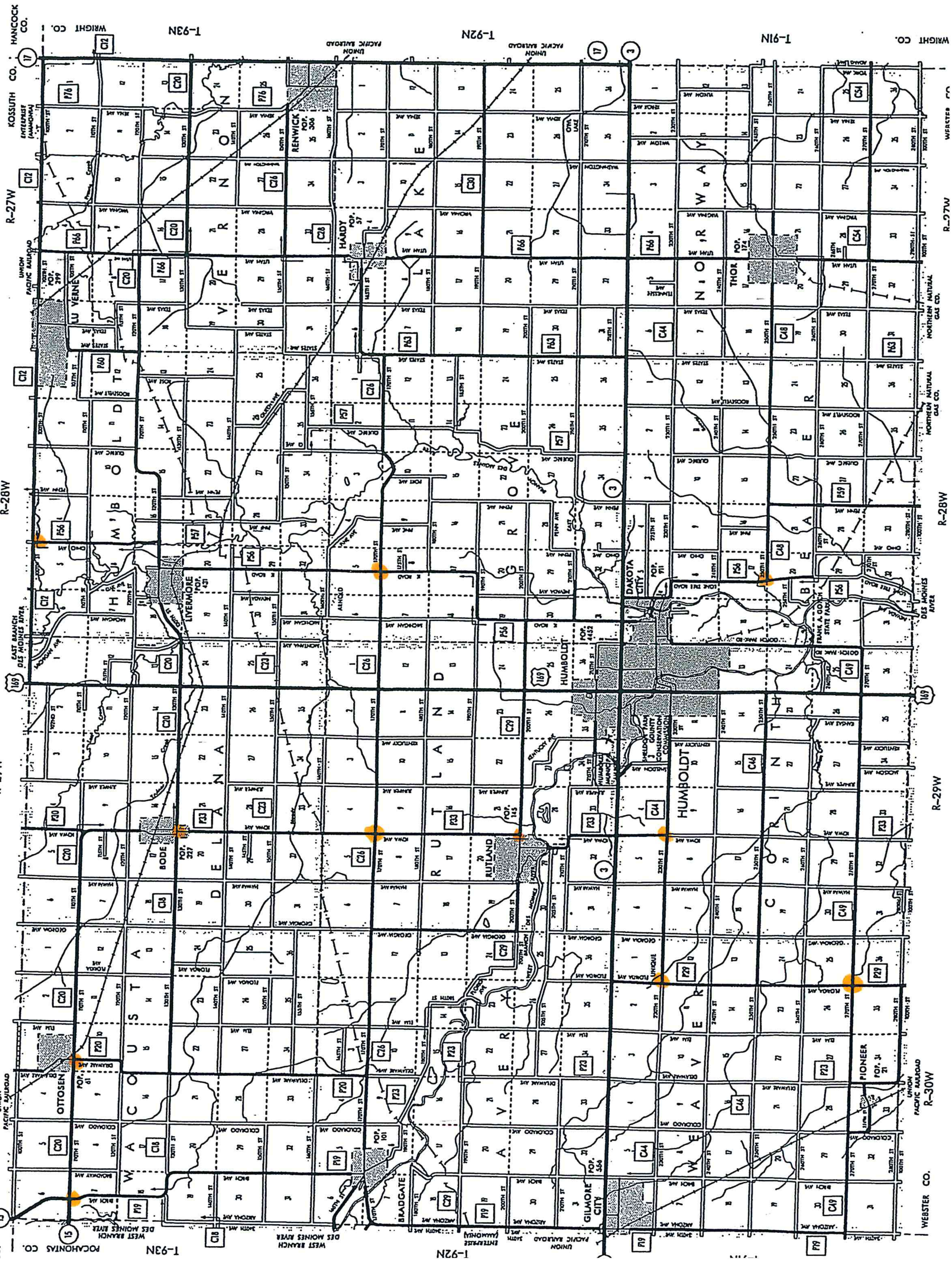
Subtotal	**$18,427.50**
Freight Estimate	**$895.00**
Total Quote	**$19,322.50**

Ship to for Freight Estimate

Shipping Via Best way
Shipping Terms PREPAY & ADD
Transit Time

Freight estimates are only valid for 14 days.
A quote not accepted within thirty (30) days is subject to review.
Custom products are NOT returnable, refundable or cancelable.

E. MAP



T-93N
T-92N
T-91N
R-27W
R-28W
R-29W
R-30W
KOSSUTH CO.
WRIGHT CO.
HANCOCK CO.
WEBSTER CO.
POCAHONTAS CO.
LU VERNE POP. 299
RENWICK POP. 306
HARDY POP. 57
THOR POP. 174
LIVERMORE POP. 431
DAKOTA CITY POP. 911
HUMBOLDT POP. 4452
BODE POP. 327
RUTLAND POP. 145
OTTOSEN POP. 61
BRADGATE POP. 101
GILMORE CITY POP. 556
PIONEER POP. 34
UNION PACIFIC RAILROAD
NORTHERN NATURAL GAS CO.
EAST BRANCH DES MOINES RIVER
WEST BRANCH DES MOINES RIVER
DES MOINES RIVER
FRANK A. GOTCH STATE PARK
HUMBOLDT

I. ICAT

Intersection		Owner	# accidents	Fatality	Major Injury	Minor Injury	property Only	Ran Stop Sign	Failure to Yield	B/C Ratio	# signs needed	Installed
P33	C26	County	6		1	1	2	2	2		2	
P56	Lone Tree Rd	County	4			1	3				1	installed
P29	C49	County	3		1		2		2		2	
P33	C20 in Bode	County	3		1		1				1	
C48	P59	County	3			1	1	1			1	installed
P66	C54	County	2	2	3						1	installed
P29	C44	County	2		1	3		2			1	
P33	C44	County	2		1				1		1	
C48	Lone Tree Rd	County	2				1	2			1	
P56	C26	County	2			2		1	1		2	
P19	C20/ HWY15	County	2				2				1	
P56	C12	County	1	1							1	recent fatality
P20	C20	County	1			3		1			2	
P19	C26	County	1				1				1	
P19	C49	County	1				1				1	
P23	C49	County	1						1		1	
P33	C29	County	1			1					1	
P56	C20	County	1				1				1	
P56	C29	County	1				1				1	
P60	C20	County	1				1				1	
P66	C12	County	1				1				1	
P66	C20 E	County	1								1	
P66	C48	County	1				1				4	
P20	C26	County	0								1	
P29	280th st	County	0								1	
P29	C46	County	0								1	
P30	C20	County	0								1	
P33	C18	County	0								1	
P33	C29 in rutland	County	0									
Gotch Park Rd	C49	County	0								1	
P56	C20 Livermore	County	0								1	
p56	210th st	County	0								1	
P60	C12	County	0								1	
P63	C26	County	0								1	
P66	C20 W	County	0								1	
P66	C26 E	County	0								1	
P66	C26 W	County	0								1	
P66	C30	County	0								1	
Colorado	C49	County	0								1	
P19	C26 Bradgate	County	0									
P23	274th st	County	0									
P20	C18	County	0									
Hwy 169	Hwy 3	State	29			1	27	2	3			
Hwy 169	C44	State	21			2	15	3	4			
P56 N	Hwy 3	State	13			3	10					
Hwy 169	C29	State	8		1	3	2		2			
Hwy 169	C46	State	5			1	4		2			
P19	Hwy 3	State	4		1		3		3			
P33	Hwy 3	State	4				4					
P66	Hwy 3	State	4			1	3					
P56 S	Hwy 3	State	3			2	1	1				
Hwy 169	C20	State	3				1					
Hwy 169	C49	State	3				3					
Hwy 169	C26	State	2			1	1	1				
P29	Hwy 3	State	2				2					
Hwy 169	C12	State	1				1					
P63	Hwy 3	State	1				1					

15 locations

Rev. 07/23

JEFFERSON COUNTY SECONDARY ROADS
901 North 8th Street
P.O.Box 817
Fairfield, Iowa 52556

JEFFERSON COUNTY

TRAFFIC SAFETY IMPROVEMENT PROGRAM APPLICATION

TEMPORARY TRAFFIC SIGNALS

FY 2025

Rev. 07/23

Application for TRAFFIC CONTROL DEVICE TSIP FUNDS

GENERAL INFORMATION **DATE:** August 15, 2023

Location / Title of Project Jefferson County – Temporary Traffic Control Devices

Applicant Jefferson County Secondary Roads Department

Contact Person DeWayne Heintz Title Engineer

Complete Mailing Address 901 N 8th Street

Fairfield, IA 52556

Phone 641-472-6528 E-Mail engineer@jeffersoncountyia.com

(Area Code)

If more than one highway authority is involved in this project, please indicate and fill in the information below (use additional sheets if necessary).

Co-Applicant(s) _____

Contact Person _____ Title _____

Complete Mailing Address _____

_____

Phone _____ E-Mail _____

(Area Code)

PLEASE COMPLETE THE FOLLOWING PROJECT INFORMATION:

Funding Amount

Total Safety Cost	$	59,000
Total Project Cost	$	59'000
Safety Funds Requested	**$**	**59,000**

Additional Project Safety Documentation (when available):

- ☐ Project information sheet(s) or "Risk Score">50% from County/City's Local Road Safety Plan
- ☐ FHWA SS4A Safety Action Plan or similar comprehensive transportation safety plan
- ☐ Iowa DOT TEAP Study or similar analysis and concept
- ☐ Project intersection or segment with High or Medium PCR Level (PCR-All or PCR-Severe) from the Iowa DOT Potential for Crash Reduction (PCR) web-based map tool https://pcr.iowadot.gov/

Potential for Crash Reduction (PCR) Information

Intersection ID (1234567890) or Segment ID (1234)	Intersection or Segment	PCR Level High	PCR Level Medium	PCR-All value	PCR-Severe value
		☐	☐		
		☐	☐		

Rev. 07/23

APPLICATION CERTIFICATION FOR PUBLIC AGENCY

To the best of my knowledge and belief, all information included in this application is true and accurate, including the commitment of all physical and financial resources. This application has been duly authorized by the participating public agency. I understand the attached resolution(s), where applicable, binds the participating public agency to assume responsibility for any additional funds, if required, to complete the project. In addition, the participating public agency to maintain any new or improved public streets or roadways for a minimum of five years.

I understand that, although this information is sufficient to secure a commitment of funds, a firm contract between the applicant and the Department of Transportation is required prior to the authorization of funds.

Representing the JEFFERSON COUNTY BOARD OF SUPERVISORS

Signed: _____ 08/15/23
Signature Date Signed

SUSIE DRISH
Printed Name

Attest: _____ 8/15/23
Signature Date Signed

Scott Reneker
Printed Name

Rev. 07/23

RESOLUTION NO.

APPROVAL OF TRAFFIC SAFETY IMPROVEMENT PROGRAM APPLICATION FOR TEMPORARY TRAFFIC SIGNALS

WHEREAS the Iowa Department of Transportation has adopted Administrative Rule 761-Chapter 164, which create the Traffic Safety Improvement Program (TSIP) to allow funding to be provided to local jurisdictions for eligible traffic safety improvement projects: and

WHEREAS, Jefferson County has determined that providing temporary traffic signals will aid in improving the safety of flaggers, road crews and the travelling public during road maintenance activities; and

WHEREAS, portable temporary traffic signals are recognized as temporary traffic control devices in the Manual on Uniform Traffic Control Devices (MUTCD), 2009 edition; and

WHEREAS, the Jefferson County Engineer recommends a TSIP application be submitted to the Iowa Department of Transportation for possible safety funding of the above-mentioned traffic control devices.

NOW THEREFORE BE IT RESOLVED, that the Jefferson County Board of Supervisors,

1. Supports the application for Iowa Department of Transportation Traffic Safety Improvement Program Funding.
2. Certifies that Jefferson County will provide continuous maintenance to these temporary traffic control signals.
3. Authorize the Board of Supervisors Chair to Sign application and supporting document in relation to the TSIP funding.

Dated the 15th Day of August 2023

ROLL CALL VOTE

AYE	NAY	ABSTAIN	ABSENT

Suzie Drish, Chair

Dee Sandquist

Lee Dimmit

ATTEST: _____

B. NARRATIVE

The Jefferson County Secondary Road Department is applying for the Traffic Safety Improvement Program (TSIP) funds to be used for the purpose of purchasing a Portable Traffic Signal System. This system will be used to control traffic through pavement maintenance work zones. The use of automated signals will free up crew members for other activities.

Jefferson County has approximately 140 miles of paved roads to maintain with 23 road employees. 95% of the paved roads in the county are on the FM system. The traffic counts on the paved roads varies between a low of 230 to above 2,000 vpd. The topography in Jefferson County is hilly and many of the paved roads are winding routes laid out by plow and oxen. The hills and curves make a "low volume" alternating traffic set-up unsafe due to limited site distance. The Department has 23 employees to perform maintenance, so everybody is cross-trained for multiple roles. Utilizing highly trained employees as flaggers is not an optimal use of resources.

Jefferson County requested budget quotes for a mobile signal system from different vendors. Two of the quotes were in the $59,000.00 range. Should the county be successful in attaining TSIP funding a formal request for proposal will be sent out. The two quotes are detailed below.

In summary, Jefferson County is requesting TSIP funding for the amount of $59,000.00 to put towards the purchase of a temporary signal system. The county will cover any costs above this amount.

C. ITEMIZED BREAKDOWN OF COST

One set of trailer mounted lights with wireless traffic control and solar power.
Vehicle Detector
Freight.

OMJC Signal	$59,500
JTI	$59,000

D. TIME SCHEDULE

August 15, 2023	TSIP application due.
January, 2024	TSIP Notice of Award
January, 2024	Request formal Quotes
February, 2024	Award contract for system
July, 2024	Projected delivery of system

Engineer

From: Blake Balzart <bbalzart@jtitraffic.com>
Sent: Friday, August 4, 2023 9:12 AM
To: Engineer
Subject: *EXTERNAL*RE: JTI Portable Traffic Signal--Jefferson County, IA
Attachments: JTI-358 PTS-2000 Product Sheet.pdf; JTI-382 PTS-2000 Spec Sheet.pdf

Hello DeWayne,

Current list pricing for **PTS 2000 Portable Traffic Signal** equipped with Doppler Radar is about $58,400 plus freight. Freight approximately $600. Please contact me with any questions.

Thank you,

BLAKE BALZART
Central Regional Manager
JTI
JOHN THOMAS INC
ROADWAY SAFETY | TRAFFIC CONTROL | ANALYSIS
P: 888-447-7263 Ext 400 **C:** 651-788-0587
bbalzart@jtitraffic.com
www.JTISignals.com
www.REACT350.com
A proud registered supporter of
Toward Zero Deaths

From: Engineer <engineer@jeffersoncountyia.com>
Sent: Friday, August 4, 2023 8:28 AM
To: Blake Balzart <bbalzart@jtitraffic.com>
Subject: RE: JTI Portable Traffic Signal

Good morning Blake,

I am putting together my TSIP application.

Please update your pricing for Summer of 2024 purchase if possible.

Thank you.

DeWayne A. Heintz, P.E.
County Engineer
Jefferson County, IA
(641)472-6528
engineer@jeffersoncountyia.com

From: Blake Balzart <bbalzart@jtitraffic.com>
Sent: Friday, February 3, 2023 9:23 AM
To: Engineer <engineer@jeffersoncountyia.com>
Subject: JTI Portable Traffic Signal

February 3, 2023

DeWayne Heintz
Jefferson County
901 N. 8th Street
Fairfield, IA 52556

DeWayne,

As a follow up to our conversation, I included a procurement specification, Clinton County Iowa 2019 Specification and links describing the features and benefits and advantages of the **PTS 2000 Portable Traffic Signal**. This link really shows the ease of PTS operation and deployment. The **PTS-2000**, operated by the **Galaxy Controller,** performs basic to complex functions including support of up to 16-phase intersection control (up to 30 trailers), storage of twenty preset traffic programs, wireless set-up and programming, Dynamic Clearing Time Calculator and "Watch Dog" monitoring feature.

Price of the new PTS 2000 set with Doppler Vehicle Sensors is $57,000 FOB Dixon, IL (see options sheet).

JTI recently added optional **Galaxy Direct** a unique and comprehensive **Real-Time Remote Monitoring System** that lets you proactively monitor and manage your portable traffic signals 24/7 from your office (see attached). These features and others are why the **PTS 2000** is recognized by traffic safety professionals as the premier solar powered traffic signal system in roadway safety, performance and value. Please contact me with any questions or comments.

PTS 2000
https://vimeo.com/313244991

ADOT--Post Office Canyon Video Link---
https://vimeo.com/626661663

Thank you,

BLAKE BALZART
Central Regional Manager
JTI JOHN THOMAS INC
ROADWAY SAFETY | TRAFFIC CONTROL | ANALYSIS
P: 888-447-7263 Ext 400 **C:** 651-788-0587
bbalzart@jtitraffic.com
www.JTISignals.com
www.REACT350.com

STANDARD FEATURES & SPECIFCATIONS

PTS-2000

NEMA TS5-TR1 Portable Traffic Signal

The PTS-2000 combines advanced Galaxy® signal controller technology with quality USA-MADE construction.

JTI can build an ADDCO PTS-2000 to fit your exact specifications.

STANDARD FEATURES

TRAILER

- » Heavy-duty, ASTM A500B, structural steel tubing
- » Fenders bolt-on heavy-duty 12-gauge steel
- » 2 5/16" ball hitch
- » Drop axle and electric brakes
- » Heavy-duty drop leg jacks
- » Hydraulic actuators for mast/arm
- » 9' overhead signal arm
- » Retractable and lockable tongue
- » Lifting eye for trailer placement
- » Designed to tow in tandem or individually
- » Non-slip treads

POWER

- » Completely self-contained power supply
- » Eight (8) 6-volt batteries standard (one battery box)
- » Approximately 900 Amp-hours capacity at 12V
- » Two (2) 160W solar panels standard (320W total)
- » External battery voltage meter
- » Onboard auxiliary 110/120V AC charger
- » Weatherproof and lockable battery enclosure

SIGNAL HEADS

- » Two signal heads per trailer (one high and one low)
- » 3-section polycarbonate signal heads
- » Fixed arm support
- » 12" diameter, standard ITE approved LEDs
- » Signal heads rotate 180° in 10° increments

CONTROLLER

- » Includes the Galaxy® Controller
- » Wireless programming and operation
- » Run up to 16 traffic phases
- » Radio-interconnect up to 30 signal trailers
- » Embedded conflict monitor
- » Store up to 10 pre-set signal programs
- » Weatherproof and lockable metal control cabinet

AVAILABLE OPTIONS

- ☐ Custom colors
- ☐ Galvanized finish
- ☐ Hitch style and size (2" Ball Hitch or Pintle Hitch)
- ☐ 15' extended overhead signal arm
- ☐ Upper auxiliary swivel mount (for extension arm)
- ☐ Toolbox (with single battery box configuration only)
- ☐ External security light

- ☐ Additional battery box with eight (8) 6v batteries
- ☐ AGM batteries
- ☐ Additional solar configurations from 320W to 640W

- ☐ Back plates
- ☐ Countdown timer
- ☐ Signal head visor/color/material

Signal head configuration to fit your specification:

- ☐ Third signal head with static arm mount
- ☐ 3-Section Head
- ☐ 5-Section Doghouse Head
- ☐ 5-Section Signal Head

- ☐ Galaxy G16 Advanced Controller
- ☐ Galaxy Intersection Controller
- ☐ Galaxy Flagger Remote
- ☐ Galaxy Station Controller

JOHN THOMAS INC

WE'VE GOT YOUR BACK

MADE IN USA

JTItraffic.com

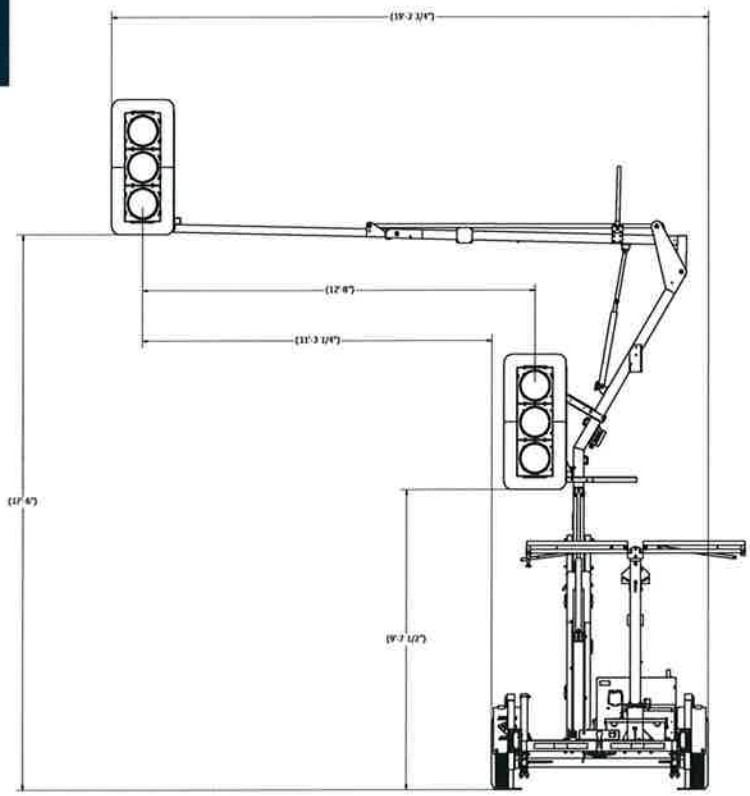
PTS-2000

NEMA TS5-TR1 Portable Traffic Signal

For more detailed specifications contact JTI.

SPECIFICATIONS

DEPLOYED



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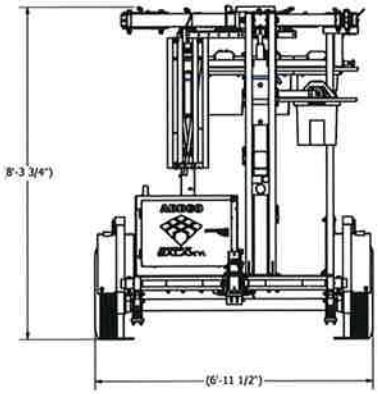
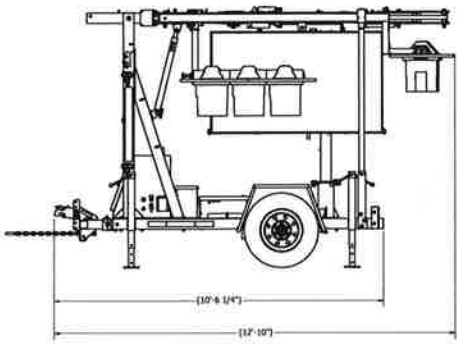




WEIGHT

STANDARD ..... 3,020 lbs

RENT OR PURCHASE | REQUEST A QUOTE TODAY CALL 888.447.7263

JTI JOHN THOMAS INC

WE'VE GOT YOUR BACK

MADE IN USA

JTItraffic.com

OMJCSignal
PO Box 1594
Waterloo, IA 50704
403 Chestnut St.
Waterloo, IA 50703
800.776.5999
Fax: 319.236.1554
Email: sales@omjcsignal.com
omjcsignal.com

Quotation

Quote Number
8666

Quote Date:
February 2, 2023

Page:
1

Quoted to:
ATTN: DEWAYNE HEINTZ
JEFFERSONCOUNTYIA

SHIP TO:
JEFFERSONCOUNTYIA

PH: 6414726528
FAX:

Customer ID	Good Thru	Payment Terms	Sales Rep Name
JEFFERSONCOUNTYIA	10/2/23	Net 30 Days	DAVID T. KNAPP

Quantity	Item	Description	Unit Price	Extension
1.00	LDPTS	ONE PAIR OF POP-UP LIGHT DUTY TRAILERS (ONE MASTER, ONE SECONDARY) W/ WIRELESS TRAFFIC CONTROL AND SOLAR POWER	52,500.00	52,500.00
2.00	TC26-B-OMJC	VEHICLE DETECTOR	1,200.00	2,400.00
1.00	FALCON MAX_OMJC03HF	5 BUTTON LONG RANGE YELLOW JAC **DELIVERY AND On-site training included at no additional cost if done on the same date	3,700.00	3,700.00

Freight & handling are in addition to the prices quoted above unless otherwise specified. All parts, materials and components are new unless otherwise specified. OMJC has been in business since July of 1985 to serve you.

Subtota	58,600.00
Sales Ta	
Freight	900.00
Tota	59,500.00

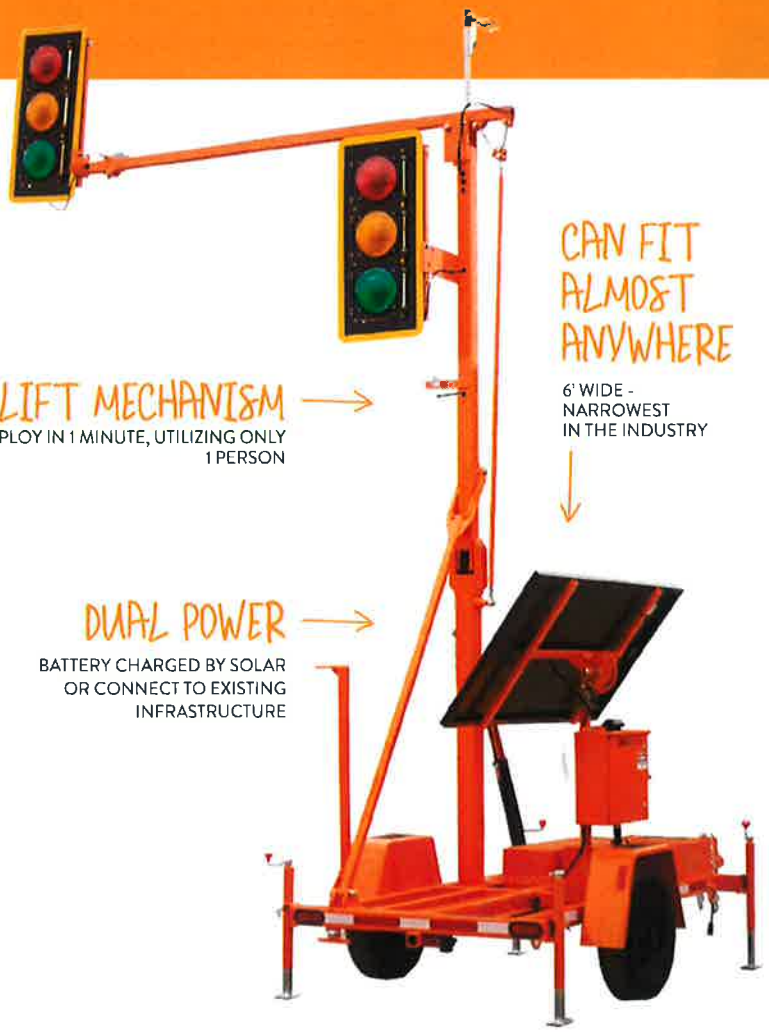
OMJC INTEGRITY AT THE CORE

Pop-Up LD

QPNW-234-2070

1 PERSON, **1 MINUTE**

The Pop-Up LD is designed to control a single lane closure, but it is capable of far more. The 9' arm meets MUTCD requirements. Two, 3 section signal heads with 12" RYG that comply with ITE standards, can quickly be in positions mandated by the MUTCD at the mere push of a button. Because the footprint is only 6' wide (the narrowest in the industry), it can fit almost anywhere. The LD features the Intelight 2070 ATC Controller running MAXTIME software. The custom radio system allows wireless communication between OMJC Pop-Up units along with complex phasing ability. The LD comes standard with a 385 watt solar panel (adjustable on 2 axes) and 440-660Ah of AGM batteries.



MAXIMUM VISIBILITY
180° SIGNAL ROTATION STANDARD

HYDRAULIC LIFT MECHANISM
DEPLOY IN 1 MINUTE, UTILIZING ONLY 1 PERSON

CAN FIT ALMOST ANYWHERE
6' WIDE - NARROWEST IN THE INDUSTRY

DUAL POWER
BATTERY CHARGED BY SOLAR OR CONNECT TO EXISTING INFRASTRUCTURE

A TRUSTED ALTERNATIVE **TO THE "FLAGGER"**

1.800.776.5999 sales@omjcsignal.com

Pop-Up LD

QPNW-234-2070

Pop-Up LD • STANDARD FEATURES

DEPLOYMENT	
	Vertical | Hydraulic with remote pendant
	Horizontal | Manual slide out
ARM EXTENSION	
	9'
SIGNAL HEADS	
	3 section overhead
	3 section side of mast
	12" RYG LED's, ITE compliant
	180° rotation
TRAFFIC CONTROL EQUIPMENT	
	Intelight 2070 ATC with MAXTIME software
	Actuated 8 phase, dual ring, with pedestrian movements
	Encrypted wireless connection between master and secondaries
	EDI real time conflict monitor
CHARGING SOURCE	
	DC | MPPT solar charge controller
	AC | 120V plug-in charger

SPECIFICATIONS

CHASSIS LENGTH	112.0" (removable hitch adds 56" for 168" total)
CHASSIS WIDTH	72.0" (narrowest in the industry)
TRAVEL HEIGHT	114.0" w/ solar
STANDARD WEIGHT	2,700lbs.
CLEARANCE (UNDER ARM)	17' (meets MUTCD requirements)
BATTERIES	440-660 Ah of AGM batteries, no-spill, no-maintenance
SOLAR	(1) - 385 watt solar panel, adjustable on 2 axes

Pop-Up LD • ADDITIONAL OPTIONS

DETECTION

- ☐ Microwave
- ☐ Video
- ☐ Loop

KNOCKDOWN AVAILABILITY (EMERGENCY POLE REPLACEMENT)

- ☐ Wireless Knockdown Kit (AC to DC from existing infrastructure)
- ☐ Wired Knockdown Kit (AC to DC from existing infrastructure)

PREEMPTION

- ☐ Audible
- ☐ Strobe
- ☐ GPS

COORDINATION

- ☐ GPS time based

REMOTE MANAGEMENT & ALERTING

- ☐ Cellular wireless router (Verizon, AT&T, or Sprint Certified Device)

WIRELESS MANUAL CONTROL

- ☐ Push button control with long range antenna (pilot car remote)

ADDITIONAL ADD-ONS

- ☐ Pedestrian signalization
- ☐ Auto-start generator for on-board ancillary power
- ☐ Work zone lighting
- ☐ Countdown timer

OMJC

1.800.776.5999 sales@omjcsignal.com
omjcsignal.com 403 Chestnut Street, Waterloo, IA 50703

Application for TRAFFIC CONTROL DEVICE
TSIP FUNDS

GENERAL INFORMATION **DATE:** 06/09/2023

Location / Title of Project Sign Replacement Program for Cities/Counties

Applicant Iowa Department of Transportation

Contact Person Mary Beth Sprouse Title Reports Specialist

Complete Mailing Address 800 Lincoln Way

Ames, IA 50010

Phone 515-239-1256 E-Mail marybeth.sprouse@iowadot.us
(Area Code)

If more than one highway authority is involved in this project, please indicate and fill in the information below (use additional sheets if necessary).

Co-Applicant(s) _____

Contact Person _____ Title _____

Complete Mailing Address _____

_____

Phone _____ E-Mail _____
(Area Code)

PLEASE COMPLETE THE FOLLOWING PROJECT INFORMATION:

Funding Amount

Total Safety Cost	$ 200,000
Total Project Cost	$ 200,000
Safety Funds Requested	$ 200,000

Does this project appear on a Safety Improvement Candidate List or is there a safety study recommendation for this project?

☐ Yes – Explain _____

☒ No

A. APPLICATION CERTIFICATION OR RESOLUTION
Not applicable

B. NARRATIVE
Continued funding of the Department's Sign Replacement Program for Cities and Counties (SRPFCC) is being sought. This program is operated by the Local Systems Bureau and provides funding for the replacement of damaged, worn out, obsolete, or substandard signs and signposts by cities and counties in Iowa. Under the current program, replacement sign eligibility is limited to regulatory, warning, and school area signs. These signs are critical to providing a safe environment for both motorists and pedestrians.

Each city/county is allowed to submit one application per year for the replacement of signs eligible within the program guidelines. The applications are limited to a maximum of $10,000 per county and $5,000 per city. The popularity of this program is demonstrated by the consistent and continual receipt of funding applications each year from a number of county and city jurisdictions. In 2020, 15 counties and 10 cities received funding from this program, and over the past 4 years this program has averaged over $160,000 in applications. Additional counties and cities have applied for funding if it becomes available. Continued funding is needed in order to meet the expected demand for the program. To date, the over $730,000 this program has provided to cities and counties has been a tremendous aid in improving the safety of the transportation system.

C. ITEMIZED BREAKDOWN OF COST
Approval of this application will provide funding that will allow the program to continue into the next fiscal year.

D. TIME SCHEDULE
Approval of this application will provide funding that will allow the program to continue into the next fiscal year.

E. MAP
This program will be applicable to all counties and cities in Iowa.

F. COLOR PICTURES

Example of replacement signs

G. PLAN VIEW
This program will be applicable to all counties and cities in Iowa.

H. TRAFFIC VOLUMES AND/OR TURNING MOVEMENT
This program will apply to signs on routes with a wide variety of traffic volumes and movement patterns.

I. SIGNALS
Not applicable

J. B/C WORKSHEET
Not applicable

Application for TRAFFIC CONTROL DEVICE
TSIP FUNDS

GENERAL INFORMATION **DATE:** 8/01/23

Location / Title of Project: Mills County Temporary Traffic Signals

Applicant: Mills County Secondary Roads

Contact Person: Jacob Ferro Title: County Engineer

Complete Mailing Address: 305 Railroad Ave

Glenwood, Iowa, 51534

Phone: 712-527-4873 (Area Code) E-Mail: jferro@millscountyiowa.gov

If more than one highway authority is involved in this project, please indicate and fill in the information below (use additional sheets if necessary).

Co-Applicant(s): _____

Contact Person: _____ Title: _____

Complete Mailing Address: _____

_____

Phone: _____ (Area Code) E-Mail: _____

PLEASE COMPLETE THE FOLLOWING PROJECT INFORMATION:

Funding Amount

Total Safety Cost	$ 62,200.00
Total Project Cost	$ 62,200.00
Safety Funds Requested	$ 62,200.00

Does this project appear on a Safety Improvement Candidate List or is there a safety study recommendation for this project?

☐ Yes – Explain _____

☒ No

Rev. 5/18

APPLICATION CERTIFICATION FOR PUBLIC AGENCY

A

To the best of my knowledge and belief, all information included in this application is true and accurate, including the commitment of all physical and financial resources. This application has been duly authorized by the participating public agency(ies). I understand the attached resolution(s), where applicable, binds the participating public agency(ies) to assume responsibility for any additional funds, if required, to complete the project. In addition, the participating public agency(ies) agrees to maintain any new or improved public streets or roadways for a minimum of five years.

I understand that, although this information is sufficient to secure a commitment of funds, a firm contract between the applicant and the Department of Transportation is required prior to the authorization of funds.

Representing the County of Mills

Signed: _____ 8/1/2023
Signature Date Signed

Lonnie Mayberry
Printed Name

Attest: Ami Petersen 8/1/2023
Signature Date Signed

Ami Petersen
Printed Name

Mills County Board of Supervisors

Richard Crouch • Carol Vinton • Lonnie Mayberry

A

RESOLUTION 23-37

RE: Authorize the submittal of a Traffic Safety Improvement Program Application

WHEREAS, the Traffic Safety Improvement Program (TSIP) allows for the award of traffic safety funds to cities, counties, and the IDOT for roadway safety improvements, research studies, and traffic control devices; and

WHEREAS, Mills County has determined that providing temporary traffic control signals at work zone sites will improve the safety of employees of Mills County and to the traveling public; now

Therefore BE IT RESOLVED by the Board of Supervisors of Mills County, Iowa, that the County Engineer, Jacob Ferro, be and is herby designated, authorized, and empowered on behalf of the Board of Supervisors of Mills County to submit a Traffic Safety Improvement Program application to the Iowa Department of Transportation for portable and temporary traffic signal trailers; and

THEREFORE BE IT RESOLVED by the Board of Supervisors of Mills County, Iowa, that the chairperson be authorized to sign the grant application and should funding be awarded, that Mills County will assume responsibility and ensure proper maintenance of any new or improved installations.

Dated at Mills County, Iowa, this 1st day of August, 2023.

Board of Supervisors, Mills County, Iowa

Lonnie Mayberry, Chairperson	Aye	Nay	
Richard Crouch	✓		
Carol Vinton	✓		

Recommended:

Jacob Ferro, County Engineer

Attest:

County Auditor

Mills County Courthouse · 418 Sharp Street · Glenwood, IA 51534
Phone: (712) 527-4729 · Fax: (712) 527-1579 · Website: www.millscountyiowa.gov

Mills County TSIP Application Narrative: B

Mills County is applying for Transportation Safety Improvement Program (TSIP) funds for the purchase of two portable temporary traffic signals. The main purpose of the temporary traffic signals would be to reduce flagging operations and overnight lane closures. With the Loess Hills taking up a large portion of Mills County and issues with the water table, the subbase for some of our road repairs can become unpredictable. The county's last project on Gaston Avenue had two unplanned lane closures due to this unpredictability, which was hazardous and extremely inconvenient for the residents of Mills County. Flooding has been another big issue for Mills County. The river floods we had just a few years ago created massive hazards for public travel and road conditions. With temporary traffic signals we would be able to quickly close off a lane and perform the repairs much quicker, without having to use personnel as flaggers.

Part 6F.84 of the MUTCD and the Iowa DOT's Standard Road Plans TC215 and TC216 offer guidance for the use of traffic signals in work zones. The primary use of the traffic signals would be for single lane closures on two-way roads, with a massive benefit to safety for overnight lane closures. Our county crews would utilize these signals in the manner provided in these references to ensure safe set up and operations.

Our secondary road crews routinely close down lanes for maintenance. This includes roadway patching, replacement and repairs of culverts, bridge repairs, and clearing of vegetation. The temporary traffic signals would greatly alleviate the work demand of our smaller county. With smaller employment numbers, having the signals to alleviate workers can help speed up the process for our workers accomplishing their intended task. This would then lead to opening roadways sooner. Another issue we run into without traffic signals is overnight lane closures. The visibility of traffic signals is far superior to regular road signs, especially at night.

The replacement of flaggers with temporary traffic signals has so many benefits for our county workers. Flagging can be a dangerous job, with some drivers having extremely unpredictable behaviors, any moment can be detrimental for our county employees. Unfortunately, in May 2022, a flagger was killed during construction near Red Oak IA, which is only a few minutes outside of our county. Flagging can be a very demanding job; it doesn't get the respect it deserves. Staying at attention for extended periods, and the weather conditions of the Midwest can be very demanding.

Itemized Breakdown of Cost C

Sale Quote

Street Smart Rentals, LLC
6811 137th Ave NE
Columbus, MN 55025

Quote #	Q-21118-1
Date	7/26/2023
Expires On	8/25/2023
Rep Name	Ryan Kilpatrick
Rep Phone	(612) 597-5547
Rep Email	rkilpatrick@streetsmartrental.com

PREPARED FOR

Jacob Ferro
Mills County Secondary Roads Department
(712) 527-4873
jferro@millscountyiowa.gov

Billing Address

Mills County Secondary Roads Department
305 Railroad Avenue
Glenwood, IA 51534

Shipping/Pick Up Address

Mills County Secondary Roads Department
305 Railroad Avenue
Glenwood, IA 51534

Pricing provided on this quote is valid for up to 30 days after the printed date. Thank you for your business!

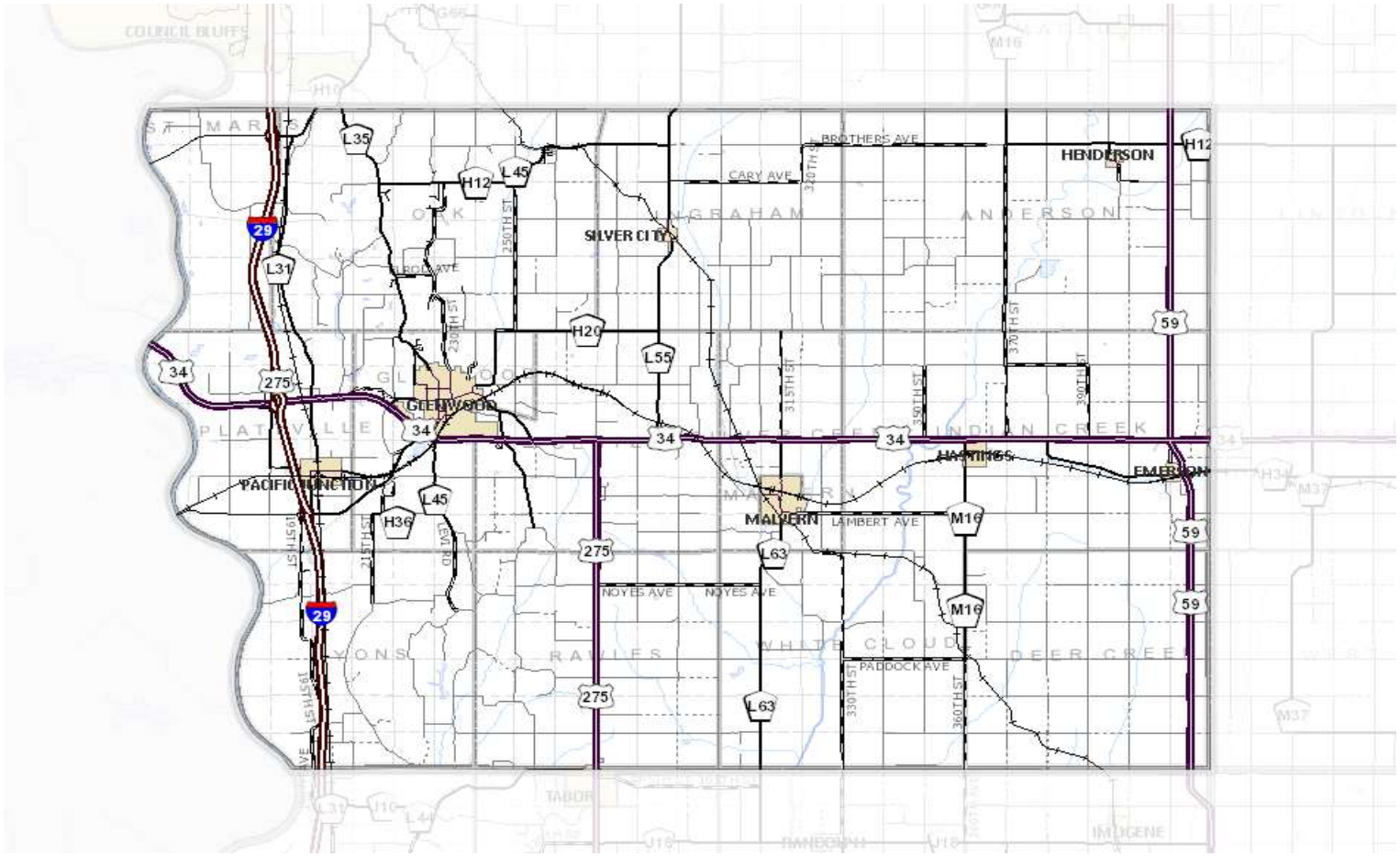
PRODUCT CODE	DESCRIPTION	QTY	UNIT PRICE	TOTAL
00723-F	SQ3TS Horizon PTS	2	$30,000.00	$60,000.00
SS400-MBD	Houston Radar Doppler Speed Sensor w/black enclosure	2	$500.00	$1,000.00

Subtotal*	$61,000.00
Est. Freight*	$1,200.00
Total*	$62,200.00

***Totals do not include Tax.** Taxes are applied on invoices if your account is not exempt.

TIME SCHEDULE	
TSIP Application Due	August 15, 2023
TSIP Award Notification	December 15, 2023
TSIP Funding Available	July 1, 2024
Quote Review	July 31, 2024
Place Order	July 31, 2024
Delivery and Deployment Availability	September 1, 2024

Temporary traffic signals will be utilized on all secondary roads throughout Mills County, depending on projects and needed repairs.



PORTABLE TRAFFIC
SIGNAL SYSTEM

SQ3TS® System

The most advanced portable traffic signal, ever.

NEMA TS-5 Type TR1 Portable Traffic Signal System

DESIGNED FOR THE REAL WORLD WORK ZONE

The SQ3TS Trailer-Mounted PTS is the most dynamic and dependable portable traffic signal available today. With an industry-leading 100-mph wind load, and a 25-year design life, the SQ3TS Portable Traffic Signal is the temporary traffic control workhorse that you can rely on year after year. From a simple one-lane bridge repair project, to complete intersection control, the SQ3TS System has you covered, under even the most demanding conditions.

> **"WE COULD NOT BE HAPPIER WITH THE SQ3TS."**
>
> TAD BROOKS
> Vice President - LMC
> Safety Barricade Corp.

The SQ3TS Portable Traffic Signal exceeds NEMA TS-5 specifications for Type TR1 PTS, and is available with a wide range of add-on components to meet any project requirements.

SQ3TS® Portable Traffic Signal

SPECIFICATIONS

Signal Lamp	12” (300 mm) diameter LED
Signal Arm Extension	68 to 109” (173 to 277 cm)
Solar Charge	520W min
Power Source	12V / (16) 6V batteries
Tow Height	89” (226 cm)
Trailer Width	85” (216 cm)
Trailer Weight	3000 lb. (1361 kg)

SQ3TS FEATURES

- Heavy-duty trailer with 25-year design life
- Dual-Processor Malfunction Management System
- Withstands sustained winds of 100 mph, gusts up to 110 mph
- 10-year structural warranty on trailer
- Lifting Ring for easy signal placement
- Hydraulic lift system
- 30 days run time on batteries alone
- Up to 14 phases of traffic per system
- Tandem-tow trailers
- Exceeds NEMA TS-5 requirements for Type TR1 PTS
- MUTCD Compliant

AVAILABLE OPTIONS

TILTING SOLAR PANELS | Allows for solar panel adjustment on SQ3TS for maximum sun exposure.

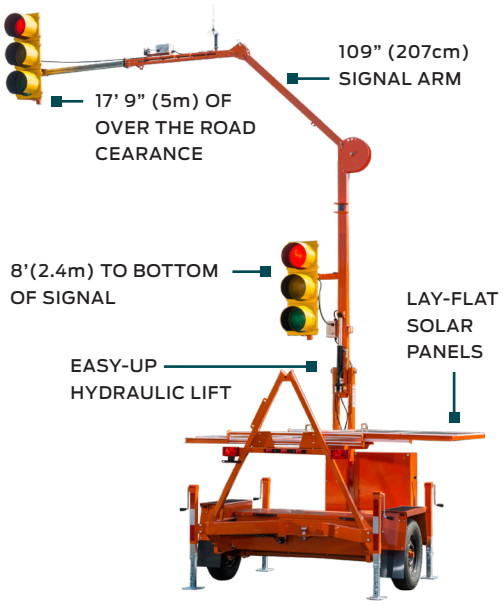
15-FOOT EXTENSION ARM | Longer extension arm for greater horizontal reach on SQ3TS trailer. Ideal for 2-lane applications.

ADVANCED REMOTE MONITORING | Recieve text and/or email alert notifications of signal operation and battery voltage levels.

WIRELESS KNOCKDOWN | Allows signal to operate in conjunction with a standard street corner control cabinet.

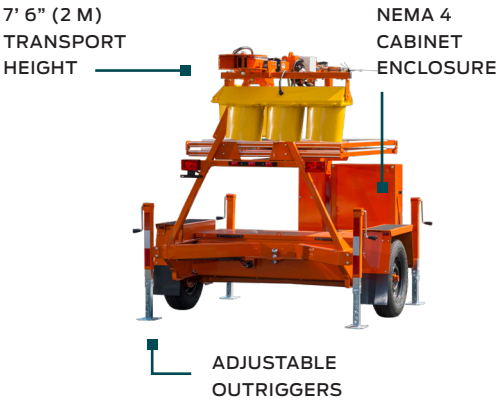
PRE-EMPTION SYSTEM | Recognizes emergency vehicles and provides earliest safe green indications.

WAIT TIME & FAULT DISPLAY | Informs motorists of wait time before next green indication.



EASY TO DEPLOY

The SQ3TS Portable Traffic Signal is equipped with a one-touch, easy-up hydraulic lifting system to make deployments simple.



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Sections G and H are not applicable.

POTTAWATTAMIE COUNTY

TRAFFIC SAFETY IMPROVEMENT PROGRAM APPLICATION

FY 2025

A. APPLICATION AND RESOLUTION

Rev. 07/23

IOWA DOT

Application for TRAFFIC CONTROL DEVICE TSIP FUNDS

GENERAL INFORMATION **DATE:** August 8, 2023

Location / Title of Project: Pottawattamie County- Activated Warning Lights

Applicant: Pottawattamie County

Contact Person: Tina Treantos Title: Operations Administrator

Complete Mailing Address: 223 South 6th Street, Council Bluffs, IA 51501

Phone: (712) 328-5608 (Area Code) E-Mail: Tina.treantos@pottcounty-ia.gov

If more than one highway authority is involved in this project, please indicate and fill in the information below (use additional sheets if necessary).

Co-Applicant(s): _____

Contact Person: _____ Title: _____

Complete Mailing Address: _____

Phone: _____ (Area Code) E-Mail: _____

PLEASE COMPLETE THE FOLLOWING PROJECT INFORMATION:

Funding Amount

Total Safety Cost	$	96,579.20
Total Project Cost	$	120,579.20
Safety Funds Requested	**$**	**106,237.12** (includes 10% contingency)

Additional Project Safety Documentation (when available):

- ☑ Project information sheet(s) or "Risk Score">50% from County/City's Local Road Safety Plan
- ☐ FHWA SS4A Safety Action Plan or similar comprehensive transportation safety plan
- ☑ Iowa DOT TEAP Study or similar analysis and concept
- ☐ Project intersection or segment with High or Medium PCR Level (PCR-All or PCR-Severe) from the Iowa DOT Potential for Crash Reduction (PCR) web-based map tool https://pcr.iowadot.gov/

Potential for Crash Reduction (PCR) Information					
Intersection ID (1234567890) or Segment ID (1234)	Intersection or Segment	PCR Level High	PCR Level Medium	PCR-All value	PCR-Severe value
		☐	☐		
		☐	☐		

Rev. 07/23

APPLICATION CERTIFICATION FOR PUBLIC AGENCY

To the best of my knowledge and belief, all information included in this application is true and accurate, including the commitment of all physical and financial resources. This application has been duly authorized by the participating public agency(ies). I understand the attached resolution(s), where applicable, binds the participating public agency(ies) to assume responsibility for any additional funds, if required, to complete the project. In addition, the participating public agency(ies) agrees to maintain any new or improved public streets or roadways for a minimum of five years.

I understand that, although this information is sufficient to secure a commitment of funds, a firm contract between the applicant and the Department of Transportation is required prior to the authorization of funds.

Representing the Pottawattamie County Secondary Roads Department

Signed: Tina Treantos 8/9/23

Signature Date Signed

Tina Treantos

Printed Name

Attest: John A Rasmussen 8/9/23

Signature Date Signed

John A Rasmussen

Printed Name

RESOLUTION NO. 56-2023

APPROVAL OF TRAFFIC SAFETY IMPROVEMENT PROGRAM APPLICATION FOR VOLUNTEER FIRE DEPARTMENT ACTIVATED WARNING BEACONS

WHEREAS, the Iowa Department of Transportation has adopted Administrative Rule 761 – Chapter 164, which created the Traffic Safety Improvement Program (TSIP) to allow funding to be provided to local jurisdictions for eligible traffic safety improvement projects; and,

WHEREAS, Pottawattamie County has determined that providing activated warning beacons for the Volunteer Fire Departments will aid in improving the safety of the traveling public as well as the volunteers responding to an emergency; and,

WHEREAS, activated beacons are recognized traffic control devices in the Manual of Uniform Traffic Control Devices (MUTCD), 2009 edition; and,

WHEREAS, a traffic study conducted by FHU dated March 29, 2022 recommends activated beacons to be installed on Hwy 92 and Cypress Avenue to warn traffic to provide for a safer and faster emergency response of the Lewis Township Fire and Rescue; and,

WHEREAS, the Volunteer Fire Departments in Crescent, Minden, Neola, Oakland, Treynor, Underwood and Walnut also have a desire for the activated warning beacons; and,

WHEREAS, the Pottawattamie County Engineer recommends TSIP applications be submitted to the Iowa Department of Transportation for safety funding of the above mentioned traffic control devices.

NOW THEREFORE BE IT RESOLVED, that the Pottawattamie County Board of Supervisors,

1. Supports the applications to the Iowa Department of Transportation Traffic Safety Improvement Program.
2. Certifies that Pottawattamie County will provide continuous maintenance to these activated warning signs.
3. Authorizes the Board of Supervisors Chairperson to sign the applications and supporting documents in relation to the TSIP funding.

Dated this 8th Day of August, 2023.

ROLL CALL VOTE

	AYE	NAY	ABSTAIN	ABSENT
Brian Shea, Chairman	●	○	○	○
Scott Belt	●	○	○	○
Tim Wichman	●	○	○	○
Susan Miller	●	○	○	○
Jeff Jorgensen	●	○	○	○

ATTEST: _____
Melvyn Houser, County Auditor

B. NARRATIVE

Pottawattamie County is applying for the Traffic Safety Improvement Program (TSIP) funds to be used to purchase Activated Warning Lights (beacons) for eight Volunteer Fire Departments in Pottawattamie County. The Volunteer Fire Departments included are Crescent, Lewis, Minden, Neola, Oakland, Treynor, Underwood, and Walnut.

These Volunteer Fire Departments serve the unincorporated areas within the County, and the installation of the warning beacons would improve the safety and traffic operations during emergency response.

Lewis Fire department is located adjacent to Highway 92, a four-lane highway with a center left turn lane and an East Bound right turn lane. The speed limit on Highway 92 is 50 mph making the entry onto the roadway difficult to judge and the time for driver reaction short. The traffic volume on Highway 92 is 6200 VPD in the 2016 count.

The Lewis VFD had a traffic study conducted by FHU in 2022 where it was determined that a stop light was not warranted. It was recommended that advanced warning beacons be installed and monitored before an emergency stop signal be installed. This VFD serves the unincorporated area south of Council Bluffs to include the Risen Son retirement community and has an extremely high call volume for a Volunteer Fire Department. The Fire Department reports cross traffic often fails to stop or yield to the lights and sirens of the emergency vehicles placing the emergency workers and equipment at risk. Their specific concerns are due to the speed of oncoming traffic, traffic volume, the width of the intersection and driver inattentiveness.

In summary, Pottawattamie County is requesting TSIP TCD funding for the amount equal to the cost of materials needed to place activated beacon lights and signs for the Volunteer Fire Departments. The ability to activate the warning beacons will help alert motorists to watch for emergency vehicles and make emergency response safer for the members of the Volunteer Fire Departments.

C. ITEMIZED BREAKDOWN OF COST

Quote received was for one (1) Activated Warning Lights. The quote includes all material items, intent is to purchase eight of these Activated Warning Light systems, one for each Volunteer Fire Department.

Date of Quote	Vendor	Total Price
7/18/2023	TAPCO	$12,072.40

VFD	Materials	Installation	Total
Crescent	$12,072.40	$3,000.00	$15,072.40
Lewis	$12,072.40	$3,000.00	$15,072.40
Minden	$12,072.40	$3,000.00	$15,072.40
Neola	$12,072.40	$3,000.00	$15,072.40
Oakland	$12,072.40	$3,000.00	$15,072.40
Treynor	$12,072.40	$3,000.00	$15,072.40
Underwood	$12,072.40	$3,000.00	$15,072.40
Walnut	$12,072.40	$3,000.00	$15,072.40
TOTAL	$96,579.20	$24,000.00	$120,579.20
Materials with 10% Contingency			**$106,237.12**

Quote with detailed breakdown of material costs can be found in Appendix A.

D. TIME SCHEDULE

TSIP Application Due	August 15, 2023
TSIP Award Notification	Mid-January 2024
TSIP Funding Available	July 1, 2024
Purchase Activated Warning Lights	July 2024 *estimate
Begin Installation and Use of AWL	September 2024 *estimate

E. MAP

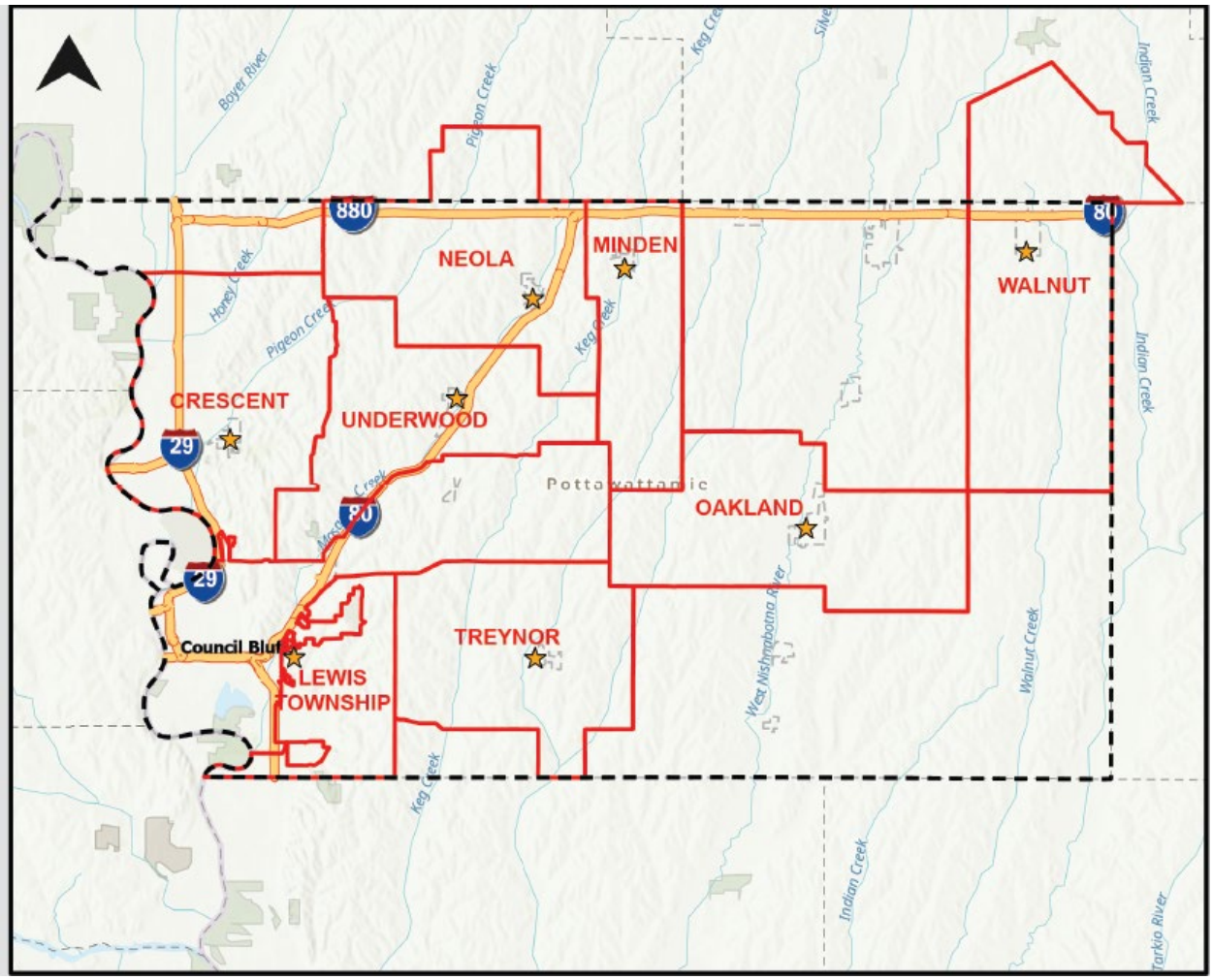


Image Source: Pottawattamie County GIS

F. PICTURES, G. PLAN VIEW &, H. TRAFFIC VOLUMES COMBINED

Proposed Activated Warning Beacon Light(s).

Crescent VFD

Roadway	Old Lincoln Highway (L20)
Speed Limit	25
Traffic Count	2770
Traffic Study	**No**

Lewis Township VFD

Roadway	Highway 92
Speed Limit	50
Traffic Count	6200
Traffic Study	**Yes**

Minden VFD

Roadway	Tamarack Road (G18)
Speed Limit	30
Traffic Count	1330
Traffic Study	**No**

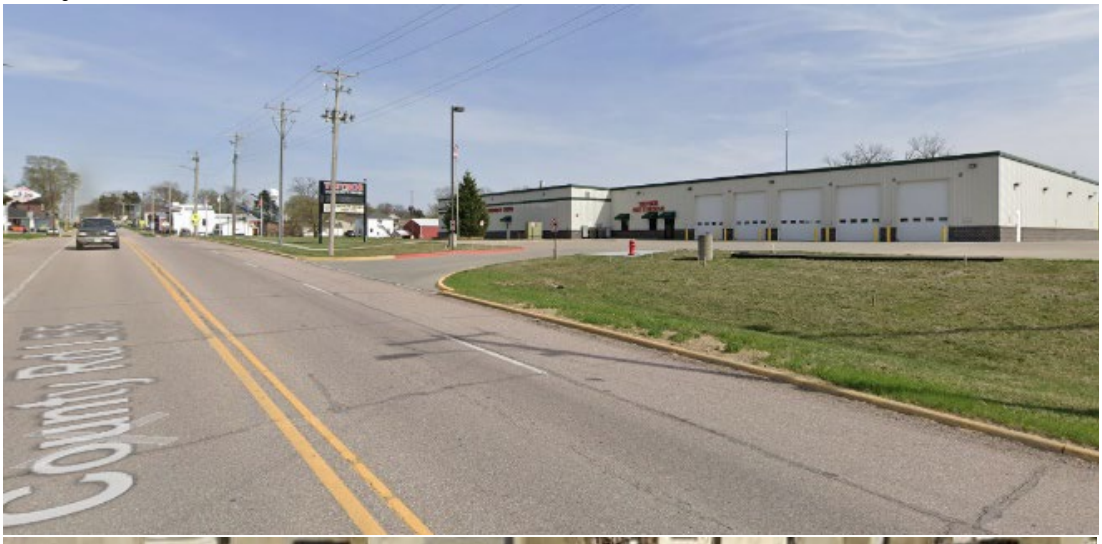
Neola VFD

Roadway	Railroad Highway (G8L)
Speed Limit	25
Traffic Count	1780
Traffic Study	**No**

Oakland VFD

Roadway	Highway 6 / Highway 59
Speed Limit	45
Traffic Count	4810
Traffic Study	**No**

Treynor VFD



Roadway	Highway 92
Speed Limit	30
Traffic Count	4990
Traffic Study	**No**

Underwood VFD

Roadway	Railroad Highway (G8L)
Speed Limit	35
Traffic Count	2080
Traffic Study	**No**

Walnut VFD

Roadway	Highway 83
Speed Limit	30
Traffic Count	830
Traffic Study	**No**

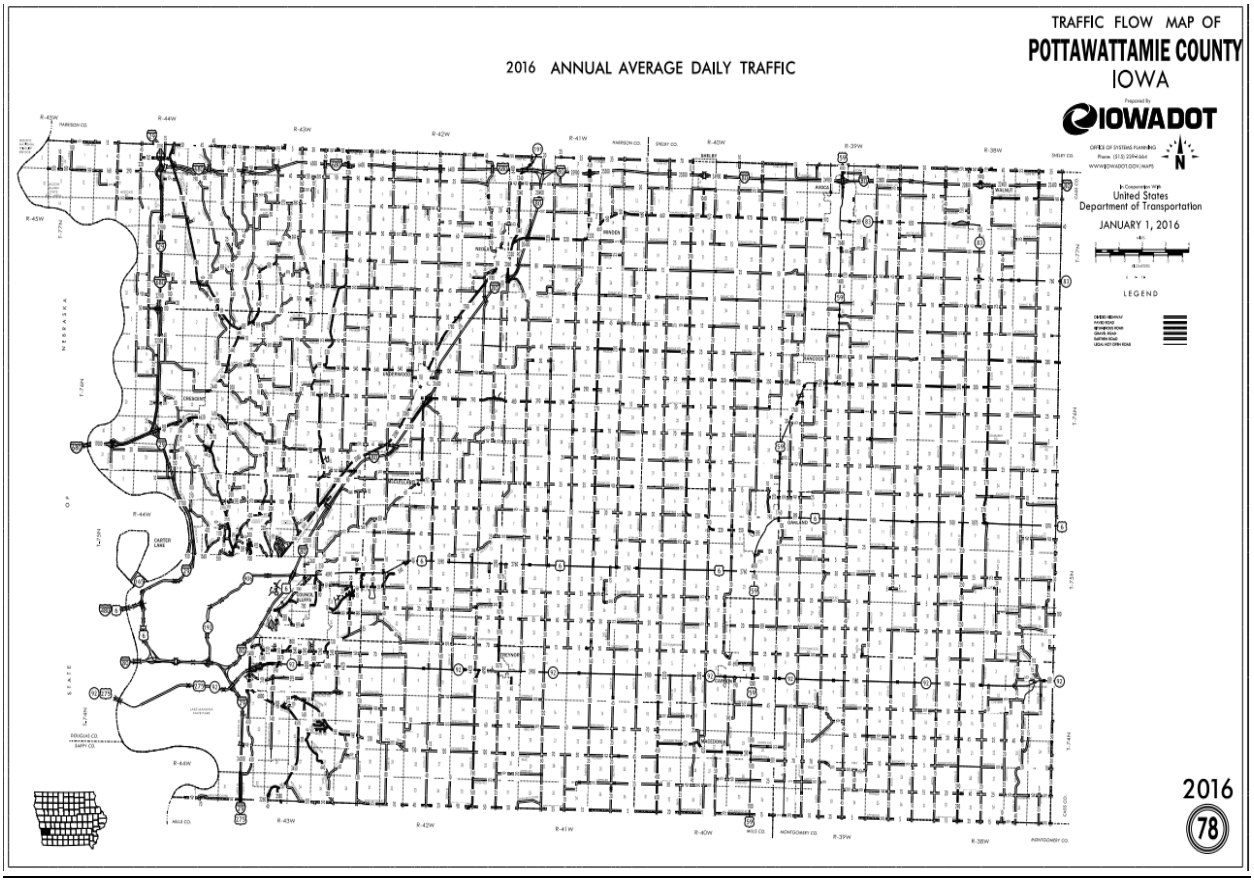


Image Source: https://iowadot.gov/maps/msp/traffic/2016/counties/POTTAWATTAMIE.pdf

I.TRAFFIC SIGNAL LAYOUT

Refer to combined sections F. (Color Pictures) G. (Plan View) and H. (Traffic Volumes) for the activated warning beacons signal layout information.

APPENDIX A

ACTIVATED WARNING LIGHTS

QUOTE

SALES QUOTE

Traffic and Parking Control Co., Inc.
5100 West Brown Deer Rd
Brown Deer, WI 53223
Phone No.:800-236-0112
E-Mail: customerservice@tapconet.com

SALES QUOTE DATE
7/18/2023
SALES QUOTE NUMBER
Q23000992
CUSTOMER NO.
C41783

BILL TO
Pottawattamie County
John Rasmussen
223 S 6th St
COUNCIL BLUFFS, IA 51501
United States of America

SHIP TO
Pottawattamie County
John Rasmussen
21901 340th St
Oakland, IA 51560
United States of America

Ext. Document No.	SHIP VIA	TERMS	SALESPERSON	VALID UNTIL
EVWS	BEST RATE Prepaid & Add	Net 30 DAYS	Deidre Jones	8/17/2023

Item/Description	U/M	Quantity	Unit Price	Total Price
*** INSIDE ACTIVATION ***				
2180-C00133-C1 Activation Control Panel, 120VAC, Push Button, Radio, & Keyfob Receiver, Add Antenna Kit To Order	Each	1	2,049.30	2,049.30
150295 Omni-Directional Antenna Kit, RP-BNC Connector, Includes 55' of Cable	Each	1	891.00	891.00
*** OUTSIDE WARNING *** *** NO OUTSIDE ACTIVATION ***				
500146 Controller, 12V, 136921, Radio, 30W TOP, No Pushbutton, No Battery	Each	2	2,000.00	4,000.00
137480 DUAL 22AH BATTERY PACK HARNESSED AND FUSED	Each	2	443.00	886.00
2180-BBSAYP-C1 BlinkerBeacon, Single, AMBER, Yellow Housing, Yellow Poly Arms, Conduit Grip On Side	Each	4	633.00	2,532.00
300478 W11-8,36"x36" DG3 Yellow,Fire Truck (Symbol) Fed Spec	Each	2	235.00	470.00
2438-00001 Sign Mounting Kit, Square/U-Channel, Anti-Vandal For Mounting One Blinker Sign to 2" Sq & U-Channel	Each	2	19.00	38.00

All prices are listed in US Dollar (USD)
For terms and conditions, please visit https://tapconet.com/terms-conditions

SALES QUOTE

Traffic and Parking Control Co., Inc.
5100 West Brown Deer Rd
Brown Deer, WI 53223
Phone No.:800-236-0112
E-Mail: customerservice@tapconet.com

SALES QUOTE DATE
7/18/2023
SALES QUOTE NUMBER
Q23000992
CUSTOMER NO.
C41783

BILL TO
Pottawattamie County
John Rasmussen
223 S 6th St
COUNCIL BLUFFS, IA 51501
United States of America

SHIP TO
Pottawattamie County
John Rasmussen
21901 340th St
Oakland, IA 51560
United States of America

Ext. Document No.	SHIP VIA	TERMS	SALESPERSON	VALID UNTIL
EVWS	BEST RATE Prepaid & Add	Net 30 DAYS	Deidre Jones	8/17/2023

Item/Description	U/M	Quantity	Unit Price	Total Price
*** POLES *** *** 2" SQUARE ***				
2793-00001 Post,Square,2"x2"x14' 12 Gauge Full Punched Galvanized Steel	Each	2	225.00	450.00
1603-00008 Post,Square,2.25"x2.25"x3' 12 Gauge Galvanized Anchor Full Punched Galvanized Steel	Each	2	34.33	68.66
1603-00013 Bolt,Corner Bolt for for 2.5" Square Posts or smaller	Each	2	1.95	3.90
3177-00001 Nut,5/16-18 Heavy Hex Jam Nut	Each	2	0.10	0.20

Plus Shipping and Handling

Furnish only quote. Installation is not included.
Solar powered equipment requires no shading or obstructions

Thank you! Deidre Jones
Email: Deidre.jones@tapconet.com
Phone: 262-649-5227

Subtotal:	**11389.06**
Invoice Discount:	0.00
Total Sales Tax:	683.34
Total:	**12,072.40**

All prices are listed in US Dollar (USD)
For terms and conditions, please visit https://tapconet.com/terms-conditions

Rev. 07/23

Application for TRAFFIC CONTROL DEVICE
TSIP FUNDS

GENERAL INFORMATION **DATE:** 7-31-2023

Location / Title of Project Story County Temporary Traffic Signals

Applicant Story County Secondary Roads

Contact Person Darren Moon Title County Engineer

Complete Mailing Address 837 N Ave.

Nevada, Iowa 50201

Phone 515-382-7355 E-Mail engineerweb@storycountyiowa.gov

(Area Code)

If more than one highway authority is involved in this project, please indicate and fill in the information below (use additional sheets if necessary).

Co-Applicant(s) _____

Contact Person _____ Title _____

Complete Mailing Address _____

_____

Phone _____ E-Mail _____

(Area Code)

PLEASE COMPLETE THE FOLLOWING PROJECT INFORMATION:

Funding Amount

Total Safety Cost	$	61,100.00
Total Project Cost	$	61,100.00
Safety Funds Requested	**$**	**61,100.00**

Additional Project Safety Documentation (when available):

- ☐ Project information sheet(s) or "Risk Score">50% from County/City's Local Road Safety Plan
- ☐ FHWA SS4A Safety Action Plan or similar comprehensive transportation safety plan
- ☐ Iowa DOT TEAP Study or similar analysis and concept
- ☐ Project intersection or segment with High or Medium PCR Level (PCR-All or PCR-Severe) from the Iowa DOT Potential for Crash Reduction (PCR) web-based map tool https://pcr.iowadot.gov/

Potential for Crash Reduction (PCR) Information					
Intersection ID (1234567890) or Segment ID (1234)	Intersection or Segment	PCR Level High	PCR Level Medium	PCR-All value	PCR-Severe value
		☐	☐		
		☐	☐		

Rev. 07/23

APPLICATION CERTIFICATION FOR PUBLIC AGENCY

To the best of my knowledge and belief, all information included in this application is true and accurate, including the commitment of all physical and financial resources. This application has been duly authorized by the participating public agency(ies). I understand the attached resolution(s), where applicable, binds the participating public agency(ies) to assume responsibility for any additional funds, if required, to complete the project. In addition, the participating public agency(ies) agrees to maintain any new or improved public streets or roadways for a minimum of five years.

I understand that, although this information is sufficient to secure a commitment of funds, a firm contract between the applicant and the Department of Transportation is required prior to the authorization of funds.

Representing the County of Story

Signed: Darren Moon 8-9-23

Signature Date Signed

Darren Moon

Printed Name

Attest: Tyler Sparks 8-9-23

Signature Date Signed

Tyler Sparks

Printed Name

Prepared by and return to: The Story County Engineer's Office, 837 N Ave, Nevada Iowa 50201 Phone 515-382-7355

RESOLUTION #24-10

Story County Board of Supervisors

RESOLUTION TO AUTHORIZE THE SUBMITTAL OF A TRAFFIC SAFETY FUND APPLICATION TO THE IOWA DEPARTMENT OF TRANSPORTATION

WHEREAS, the Iowa Department of Transportation is accepting applications for Traffic Safety Improvement Program (TSIP) funds to be used for the purchase of temporary traffic signals; and

WHEREAS, Story County Secondary Roads has determined that portable traffic signals at work zones will be more visible, improving safety to flaggers, work crews, and the traveling public; and

WHEREAS, portable temporary traffic signals are recognized traffic control devices in the Manual on Uniform Traffic Control Devices (MUTCD).

BE IT RESOLVED by the Board of Supervisors for Story County, Iowa, that Darren Moon, the County Engineer of Story County, Iowa be and is hereby designated, authorized, and empowered on behalf of the Board of Supervisors of said County to submit a Traffic Safety Improvement Program application to the Iowa Department of Transportation for a pair of portable traffic signal trailers.

BE IT FURTHER RESOLVED that the Story County Secondary Roads Department shall be responsible for maintaining said traffic control signals.

Adopted this 8th Day of August, 2023

Recommended Approval by:

Darren Moon 8-2-23

Darren R. Moon, P.E. Date
County Engineer

Chairperson, Board of Supervisors

Attest:

County Auditor

ROLL CALL FOR ALLOWANCE
Latifah Faisal Yea ✓ Nay ___ Absent ___
Lisa Heddens Yea ✓ Nay ___ Absent ___
Linda Murken Yea ✓ Nay ___ Absent ___

ALLOWED BY VOTE OF BOARD Yea 3 Nay 0 Absent 0

Above tabulation made by EN

CHAIRPERSON

B. Narrative

The Story County Secondary Roads Department is applying for Traffic Safety Improvement Program (TSIP) funds to be used for the purchase of a pair of portable temporary traffic control signals. The signals would be used to replace flaggers for Secondary Roads work zone lane closures, and to be essential in situations where overnight lane closures are necessary. Story county would also be able to loan out these signals to cities in the county or surrounding counties and cities.

The Story County Secondary Roads Department is responsible for the maintenance, construction and engineering of the county's secondary road system. The secondary road system consists of 932 miles, (202 miles of paved roads, 706 miles of granular surfacing, and 24 miles of dirt roads) and 284 bridges. Typical paved route daily traffic counts range from 100 to 5,100 vehicles per day.

Part 6F.84 of the MUTCD provides standards, guidance, and support for the use of traffic signals in work zones. There is also additional information regarding signal use located in Part 4. The primary use of the temporary traffic signals would be in single lane closures on a two-way roadway and would be especially beneficial for nighttime closures which is currently not an option.

Traffic control is of paramount importance, currently requiring the use of trained and certified flaggers to safely direct traffic through work zones. Flagging can be stressful and dangerous on busy routes, and boring and monotonous on roads with very little traffic. Roads crews often close lanes for a variety of maintenance work such as: HMA patching, PCC patching, culvert repair and replacement, bridge repair and replacement, guardrail repair and replacement, bridge rail repair, tile repair and installation, and slope repairs.

The use of temporary traffic signals with traffic control plan 6H-12 in work zones would reduce the number of employees exposed to the traveling public, which reduces risk of injury, heat stress, extreme cold, fatigue and conflicts with drivers. As well as provide a safer and more familiar and more visible method of traffic control to the motorists driving through projects.

The purchase of temporary traffic signals would remove the burden of flagging and make safer conditions for everyone involved. They are easily moved and set up, very little training and instruction is necessary, could be used on long-term closures or overnight, and could be rapidly deployed in emergency situations. Overall, they provide safe and effective traffic control while removing employees from high-risk situations with an ever-growing inattentive driving population.

C. Itemized Breakdown of Cost

Quotes listed here are for a set of two signals, with vehicle detection and pilot car remote for Temporary Traffic Control. These preliminary quotes are attached in appendix A.

DATE	VENDOR	PRICE
7-27-23	OMJC Signal	$61,100.00
7-31-23	Iowa Plains Signing, Inc.	$67,630.00
7-31-23	Astro Optics, LLC	$79,507.25

D. Time Schedule

TSIP Application Due	August 15, 2023
TSIP Award Notification	Mid – January 2024
Final Quote Comparison	June - July 2024 (estimated)
TSIP Funding Available	July 1, 2024
Purchase of Traffic Signals	July – August 2024 (estimated)
Use of Portable Traffic Signals	August 2024 (after purchase)

E. Map

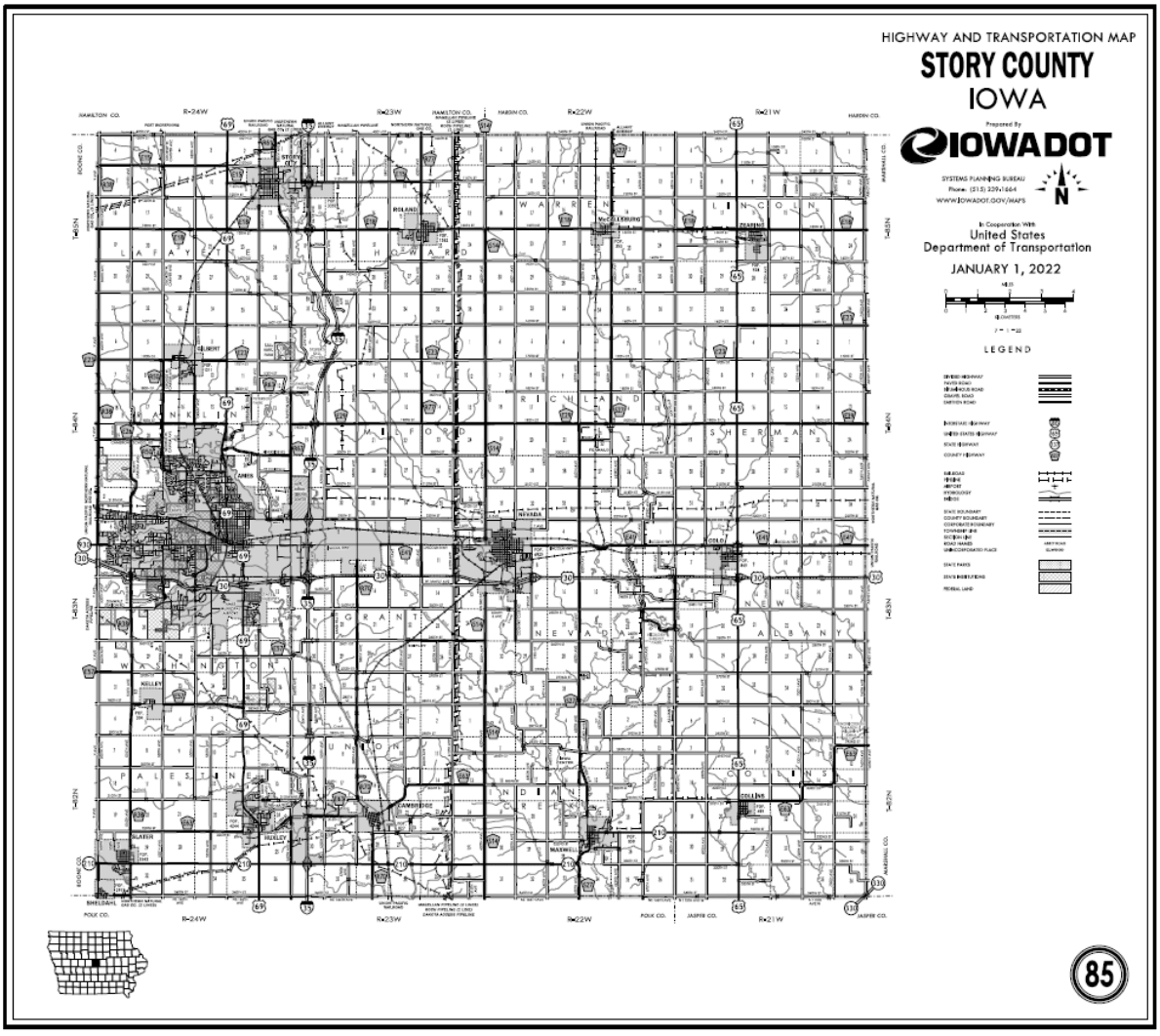


Image Source: https://iowadot.gov/maps/Digital-maps/pdfview/story#25672717-city-and-county-maps (view the link for higher quality map)

F. Color Pictures

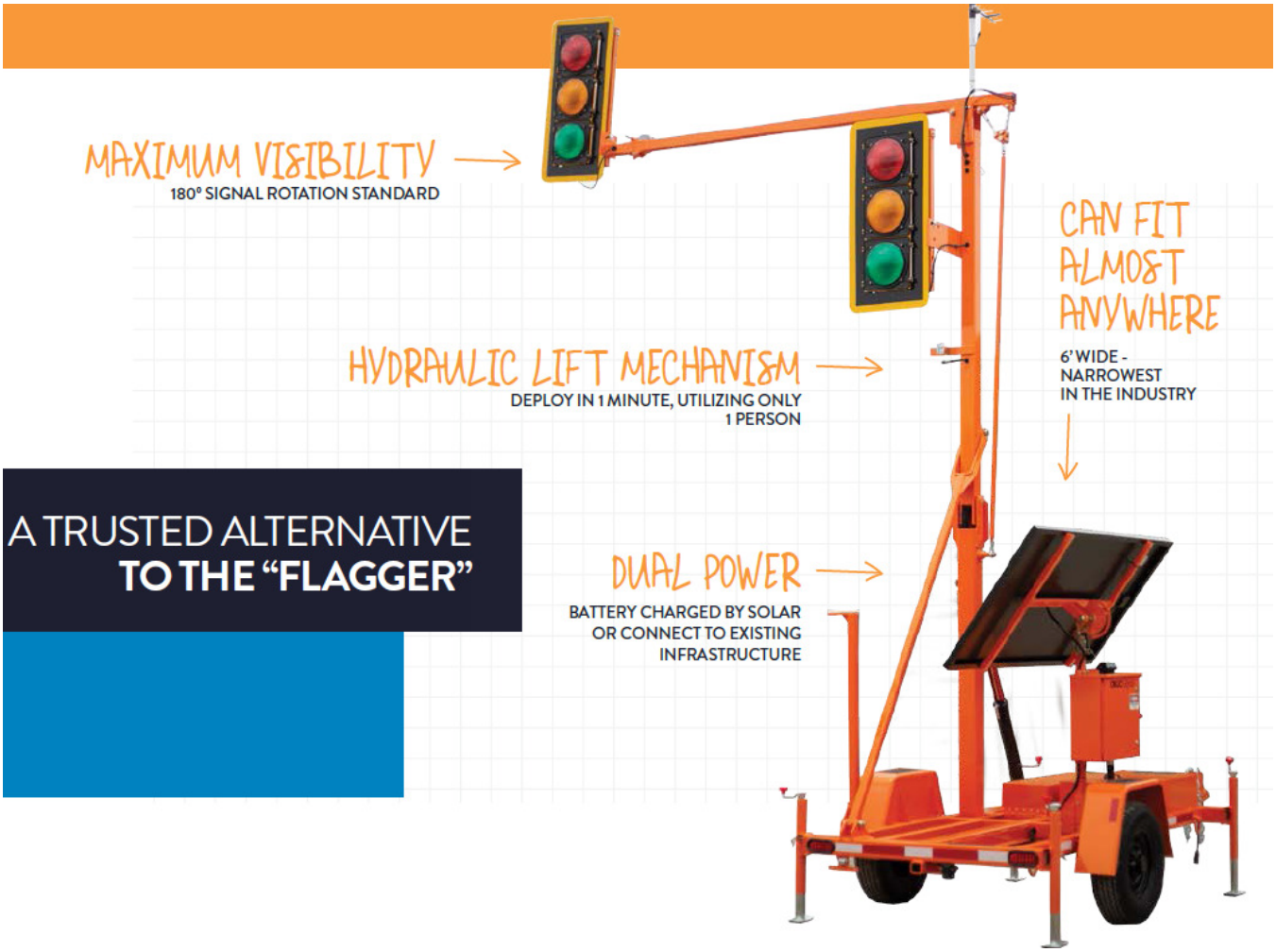
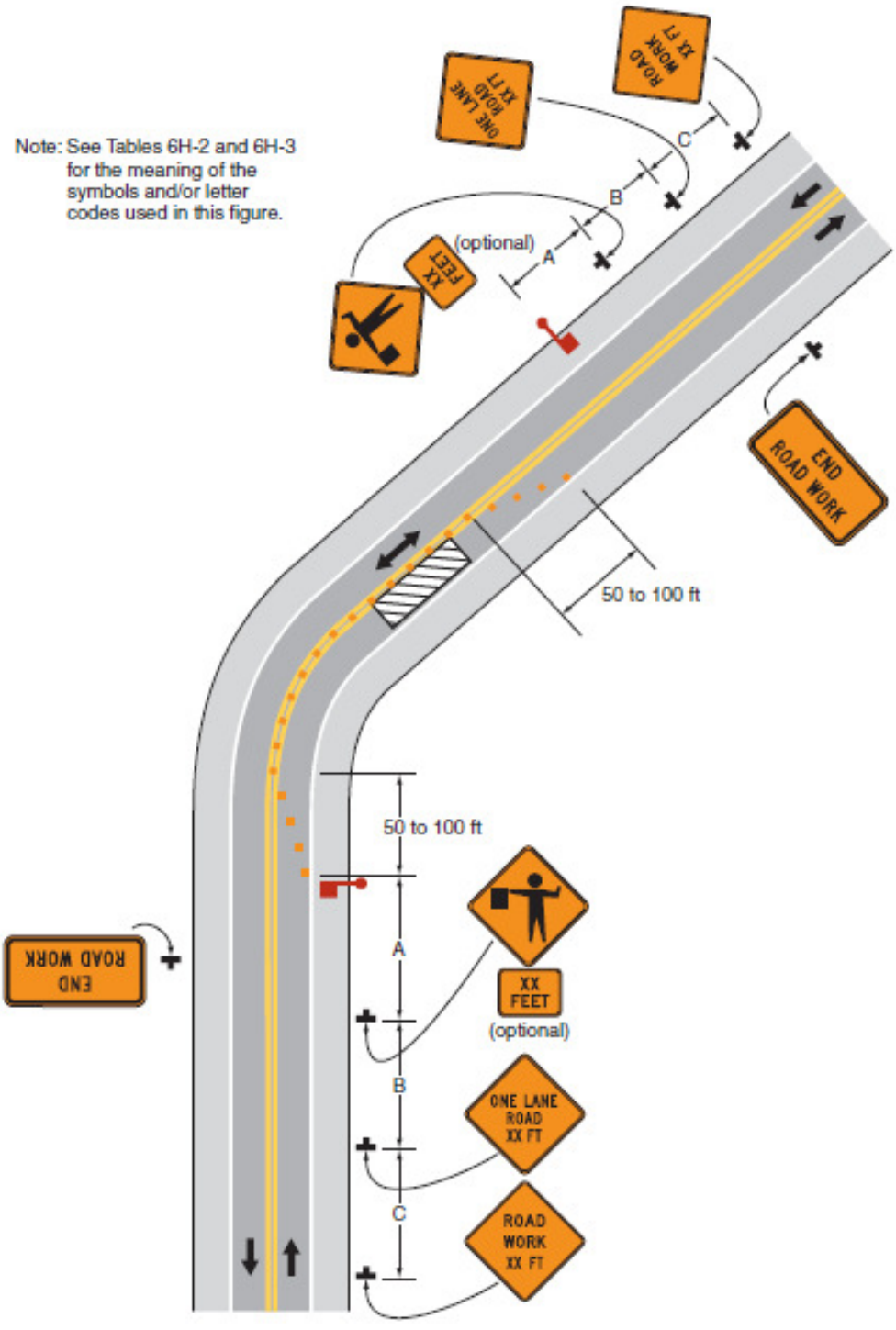


Image Source: OMJC Signal Quote

Image Source: OMJC Signal Quote

G. Plan View

Figure 6H-10. Lane Closure on a Two-Lane Road Using Flaggers (TA-10)



Typical Application 10

Image source: MUTCD 2009, page 655

H. Traffic Volumes

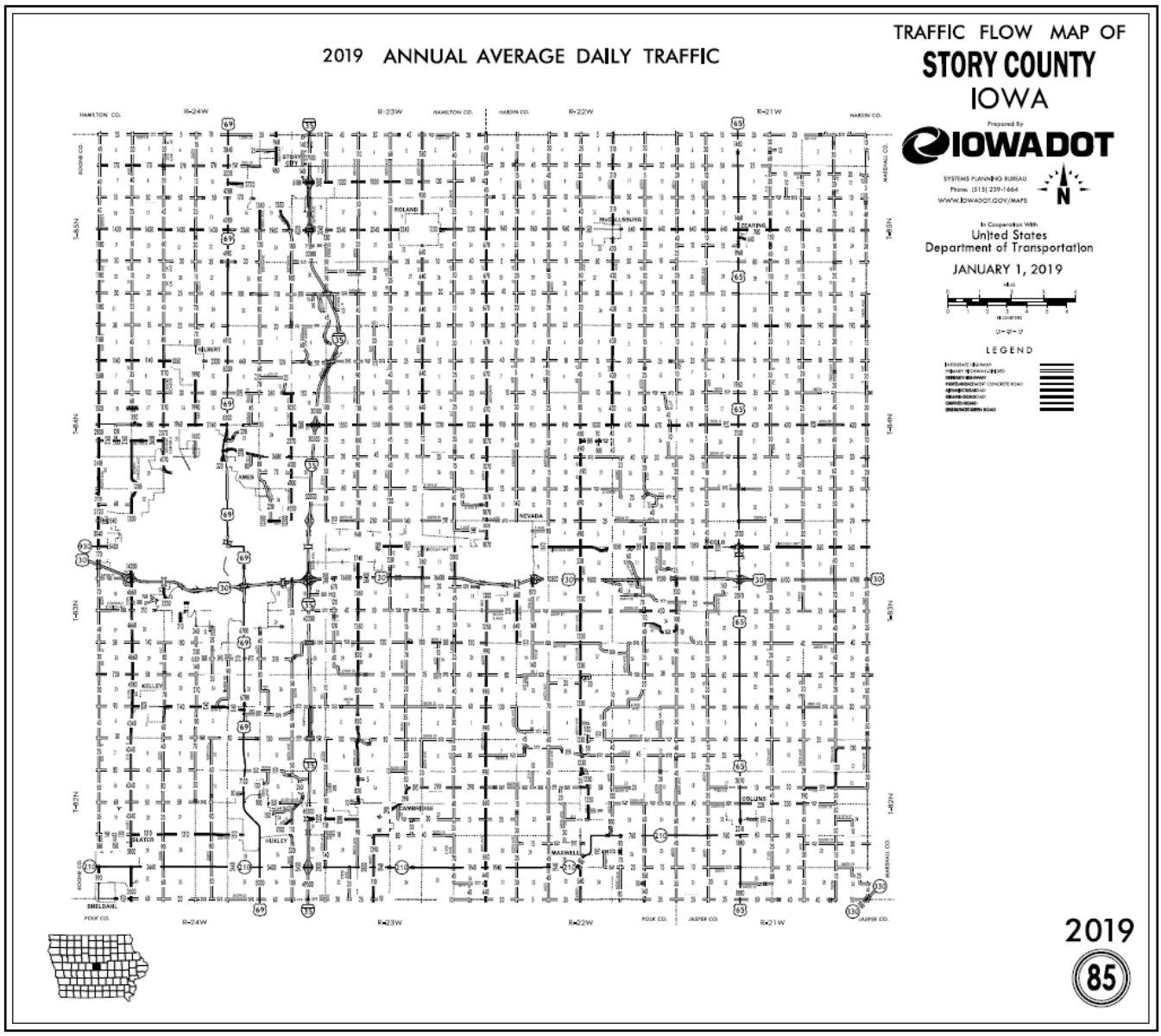


Image souce: https://iowadot.gov/maps/msp/traffic/2019/counties/STORY.pdf (view the link for higher quality map)

I. Traffic Signal Layout

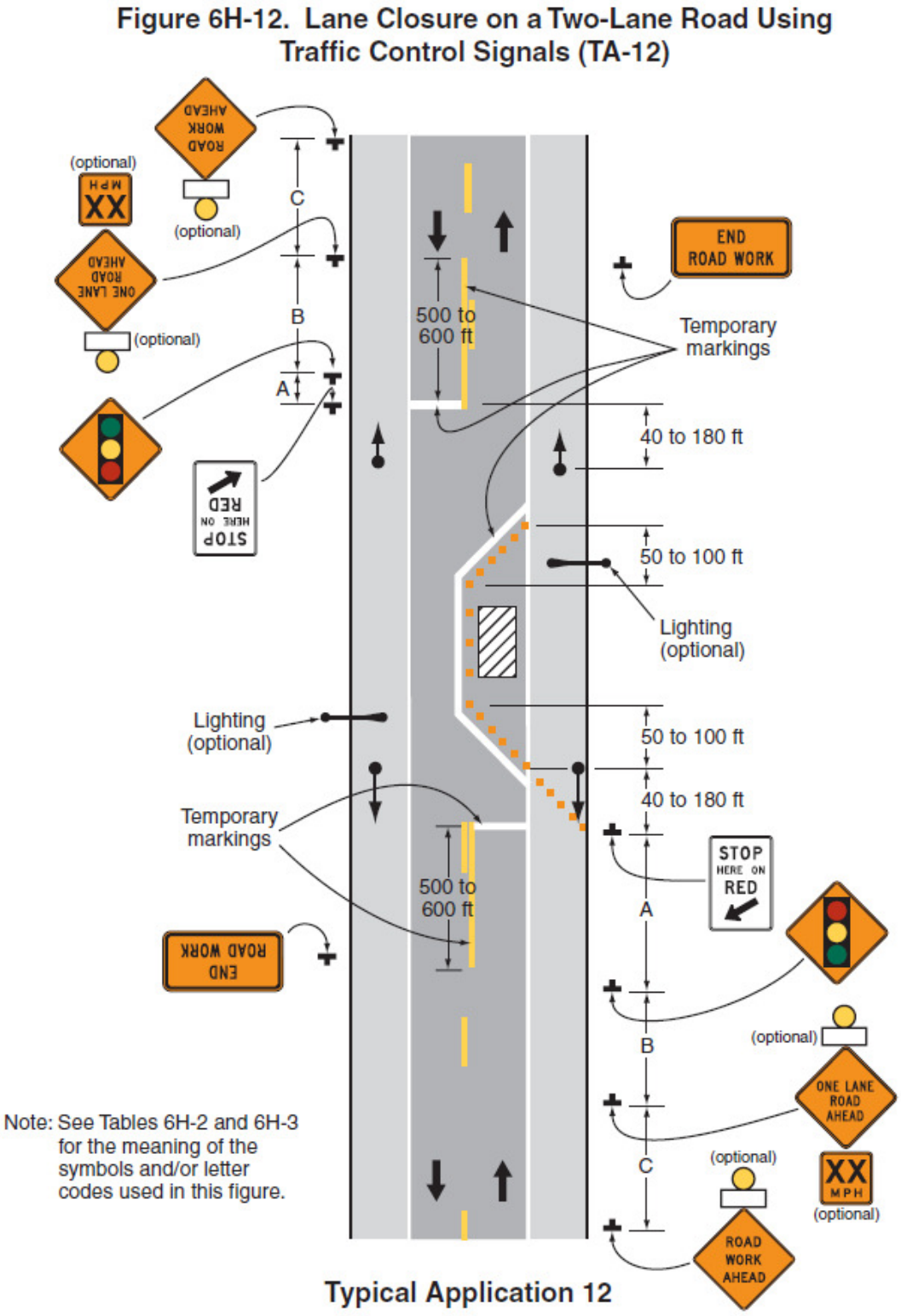


Image source: MUTCD 2009, page 659

J. Cost/ Benefit Worksheet

Not Applicable

Appendix A

QUOTES

OMJCSignal
PO Box 1594
Waterloo, IA 50704
403 Chestnut St.
Waterloo, IA 50703
800.776.5999
Fax: 319.236.1554
Email: sales@omjcsignal.com
omjcsignal.com

Quotation

Quote Number
8846

Quote Date
July 27, 2023

Page:
1

Quoted to:
ATTN: TYLER SPARKS
STORYCOUNTYIOWA

SHIP TO:
STORYCOUNTYIOWA

PH: 515.382.7355
FAX:

Customer ID	Good Thru	Payment Terms	Sales Rep Name
STORYCOUNTYIA	8/26/23	Net 30 Days	DAVID T. KNAPP

Quantity	Item	Description	Unit Price	Extension
1.00	LDPTS	ONE PAIR OF POP-UP LIGHT DUTY TRAILERS (ONE MASTER, ONE SECONDARY) W/ WIRELESS TRAFFIC CONTROL AND SOLAR POWER	54,500.00	54,500.00
2.00	TC26-B-OMJC	MICROWAVE VEHICLE DETECTOR	1,200.00	2,400.00
1.00	FALCON-MAX	3 BUTTON REMOTE SYSTEM 900MHZ, 12VDC, ANTENNA BULKHEAD PATCH CABLE, CUSTOM OMJC LABELING	3,700.00	3,700.00
		free delivery and training		

Freight & handling are in addition to the prices quoted above unless otherwise specified. All parts, materials and components are new unless otherwise specified. OMJC has been in business since July of 1985 to serve you.

Subtota	60,600.00
Sales Ta	
Freight	500.00
Tota	61,100.00

IOWA PLAINS SIGNING, INC.

1110 W. 6TH AVENUE (HWY. 210W)
P.O. BOX 654
SLATER, IOWA 50244-0654

TELEPHONE: (515) 685-3536
FAX: (515) 685-3530

Quote For: Story County
Type of Sale: SQ3
Quote Date: July 31, 2023

Att. Tyler
Phone
Fax #

Bid Item #	Description	Quantity	Units	Per Unit	Total
1	SQ3TS System	1	5	$ 58,000.00	$ 58,000.00
2	Motion Sensors	2	EA	$ 1,035.00	$ 2,070.00
3	Back Plate	4	EA	$ 165.00	$ 660.00
4	Pilot Car/ Flagger Module	1	EA	$ 3,400.00	$ 3,400.00
5	Freight		LS	$ 3,500.00	$ 3,500.00
				Total	**$ 67,630.00**

Conditions or Notes:

This price does not include any shipping incured. This price does not include sales tax.

Date

Signature

Derek Riley
Cell (515) 360-6729

Date

Acceptance Signature

Quote

Astro Optics, LLC
www.astrooptics.com
… a TAPCO (Traffic & Parking Control) company
5100 W. Brown Deer Road, Brown Deer, WI 53223
P (847) 488-9151 | sales@astrooptics.com | F (847) 488-9154

DATE: July 31, 2023

Quote For: Tyler Sparks
Story County Road Dept.
837 N Avenue
Nevada, IA 50201

Comments or Special Instructions:

SALESPERSON	P.O. NUMBER	SHIP DATE	SHIP VIA	FREIGHT	TERMS
Heather Lopez	Quote		PPA	PPA	

QUANTITY	DESCRIPTION	UNIT PRICE	AMOUNT
1	Portable Traffic Signal System, SQ3TS, Solar Assisted Model w/2 signal trailers, wireless radios	$ 70,222.25	$ 70,222.25
1	Motion Detector, 1 sensor, for Signal Activation	$ 1,225.00	$ 1,225.00
4	SQ3TS Back Plate (Black)	$ 165.00	$ 660.00
1	Pilot Car/Flagger Module	$ 3,600.00	$ 3,600.00
		SUBTOTAL	$ 75,707.25
		TAX RATE	
		SALES TAX	
		SHIPPING & HANDLING	3,800.00
		TOTAL	$ 79,507.25

THANK YOU FOR YOUR BUSINESS!

Van Buren County

FY25 TSIP Traffic Control Devices Application

for

Countywide Intersection Improvements

8/14/2023

Table of Contents

Application for TRAFFIC CONTROL DEVICE TSIP FUNDS

GENERAL INFORMATION **DATE:** 8/14/2023

Location / Title of Project: Van Buren County FM/HWY Intersection Lights

Applicant: Van Buren County

Contact Person: Ryne Thornburg Title: County Engineer

Complete Mailing Address: 20554 Highway 1, PO Box 494
Keosauqua, IA 52565

Phone: (319) 293-3663 (Area Code) E-Mail: rthornburg@vanburencounty.iowa.gov

If more than one highway authority is involved in this project, please indicate and fill in the information below (use additional sheets if necessary).

Co-Applicant(s): _____

Contact Person: _____ Title: _____

Complete Mailing Address: _____

_____

Phone: _____ (Area Code) E-Mail: _____

PLEASE COMPLETE THE FOLLOWING PROJECT INFORMATION:

Funding Amount

Total Safety Cost	$ 40,084.00 (No Labor)
Total Project Cost	$ 48,258.00 (Project Including Labor)
Safety Funds Requested	$ 40,084.00

Does this project appear on a Safety Improvement Candidate List or is there a safety study recommendation for this project?

☐ Yes – Explain _____

☒ No

APPLICATION CERTIFICATION FOR PUBLIC AGENCY

To the best of my knowledge and belief, all information included in this application is true and accurate, including the commitment of all physical and financial resources. This application has been duly authorized by the participating public agency(ies). I understand the attached resolution(s), where applicable, binds the participating public agency(ies) to assume responsibility for any additional funds, if required, to complete the project. In addition, the participating public agency(ies) agrees to maintain any new or improved public streets or roadways for a minimum of five years.

I understand that, although this information is sufficient to secure a commitment of funds, a firm contract between the applicant and the Department of Transportation is required prior to the authorization of funds.

Representing the Van Buren County Board of Supervisors

Signed: Alex Richards 08/14/2023
Signature Date Signed

Alex Richards,Chairman, Van Buren County Board of Supervisors
Printed Name

Attest: Lisa Plecker 08/14/2023
Signature Date Signed

Lisa Plecker, Van Buren County Auditor
Printed Name

A

RESOLUTION FOR SUPPORT OF APPLICATION FOR A TRAFFIC SAFETY IMPROVEMENT PROGRAM TRAFFIC CONTROL DEVICES GRANT FOR FY25

Van Buren County
Resolution No. 08-14-2023A

WHEREAS, Iowa Code Chapter 164 establishes the Traffic Safety Improvement Program which provides funding for traffic safety improvements on public roads in Iowa and

WHEREAS, Van Buren County is an eligible jurisdiction in the State of Iowa for use of the established program and

WHERAS, the Van Buren County Board of Supervisors and Van Buren County Engineer have identified various intersections where additional traffic control devices can be installed for the improvement of traffic safety.

BE IT THEREFORE RESOLVED by the Van Buren County Board of Supervisors that application be made to the Traffic Safety Improvement Program for a Traffic Control Devices Grant for FY25 for intersection improvements.

BE IT FURTHER RESOLVED that should Van Buren County be awarded such grant that the Board of Supervisors ensures that funding be in place for the maintenance of the proposed installations for the expected service life of the devices.

Adopted this 14th day of August 2023.

Alex Richards

Alex Richards, Chairman
County Board of Supervisors

ATTEST: Lisa Plecker

Lisa Plecker
County Auditor

8/14/2023

Date

Project Narrative

Project Background

In the past decade Van Buren County has experienced a number of crashes at our paved intersections seemingly due to distracted driving. This has included a fatality, a near fatality of a child and a pair of serious injury accidents. While our traffic volumes are less than many other locations in the state the value of a life is the same.

The Board of Supervisors and the County Engineer have recently taken steps to mitigate these accidents with installation of intersection approach rumble strips at all intersections of paved county roads and state Highways and at the intersections of select paved county roads along with the installation of reflective strips to the posts of stop signs at county road paved intersections. The Board and County Engineer would like to take yet another step to attempt to mitigate these accidents though the use of the TSIP Traffic Control Device Program.

Proposal

We propose installing solar powered red flashing beacons above stop signs at various intersections throughout the County as well as installing yellow solar powered beacons above stop ahead signs at locations where roadway geometry prevents red beacons above stop signs from being effective. These installation locations are primarily at the intersections of paved county routes with state highways but also includes the intersection of a County gravel FM with a State Highway, and two intersections of paved FM route with paved FM route. Locations listed may only include one leg of the intersection as the other leg may be speed restricted or roadway geometry does not benefit from the installation of a beacon.

Proposed red beacon installation locations are:

Northbound County Route V56 at Highway 2
Northbound County Route V56 at County Route J40
North and Southbound County Route V64 at State Highway 16
Southbound County Route V64 at State Highway 2
Northbound County Route W20 at State Highway 2
North and Southbound County Route W30 at State Highway 16
Northbound County Route W40 at State Highway 16
Westbound County Route J40 at County Route W40
Southbound County Route W40 at State Highway 2

Proposed yellow beacon installation locations are:

Westbound County Route J40 approaching Highway 1
Northbound Gold Avenue approaching Highway 2

Additionally, we propose to install red reflective strips on the signposts of all stop signs at the intersection of all Area Service Level “A” county roads with an ADT greater than 10 vpd and State

Highways. Finally, we propose the installation of yellow reflective strips on the signposts of all stop ahead signs approaching the selected beacon installation locations. It is intended that the County would order the traffic control devices and install as per the MUTCD using County Highway Department staff.

The purpose of these installations is a relatively low-cost attempt at reducing the number of accidents at our intersections.

Beacon installations shall be made in accordance with MUTCD Chapter 4L.

Installations at the intersections of State Highways will require permitting through the Iowa Department of Transportation, this is not expected to be problematic as they have permitted such installations within other Iowa Counties.

We are seeking 80% participation in the purchase of the proposed traffic control devices.

Itemized Breakdown of Cost

Item	Units	Quantity	Unit Cost	Total
Flashing Red Beacon	EA	12	$ 2,500.00	$ 30,000.00
Flashing Yellow Beacon	EA	2	$ 2,500.00	$ 5,000.00
Red Retroreflective Strips	EA	94	$ 12.00	$ 1,128.00
Yellow Reflective Strips	EA	26	$ 12.00	$ 312.00
			Sub Total	**$ 36,440.00**
			Contengiency (10%)	**$ 3,644.00**
			Total	**$ 40,084.00**

Time Schedule

August 2023	Make TSIP Application
January 2024	Receive Award of TSIP Funds
February 2024	Request Permit for Installation of Traffic Control Devices from Iowa DOT
April 2024	Receive Authorization from Iowa DOT for Installation of Traffic Control Devices
July 2024	Purchase Traffic Control Devices
Fall 2024	Installation of Traffic Control Devices

HIGHWAY AND TRANSPORTATION MAP

VAN BUREN COUNTY
IOWA

Prepared By

IOWA DOT

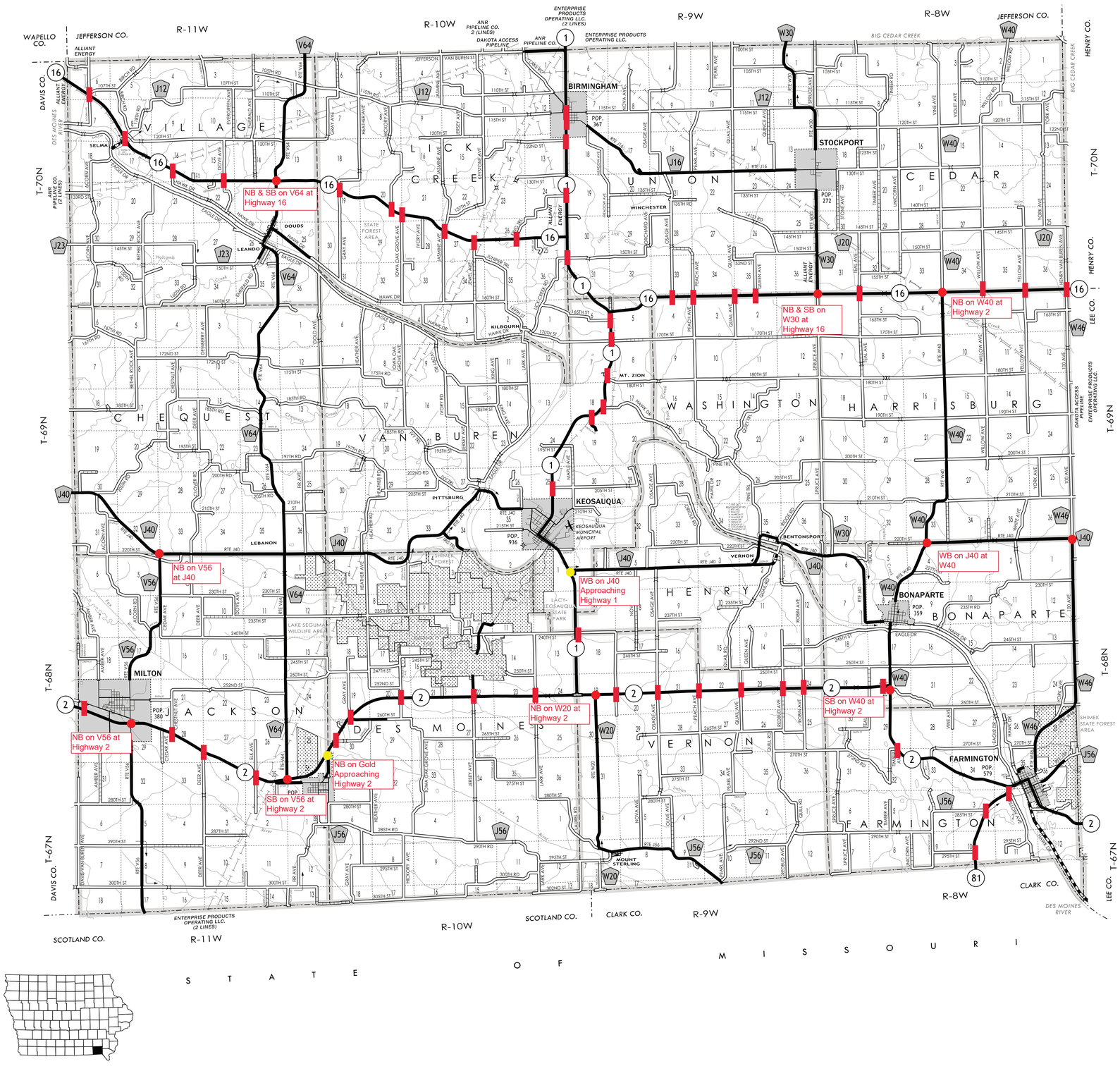
SYSTEMS PLANNING BUREAU
Phone: (515) 239-1664
WWW.IOWADOT.GOV/MAPS

In Cooperation With
United States
Department of Transportation

JANUARY 1, 2022

MILES
0 1 2 3 4
0 1 2 3 4 5 6
KILOMETERS

7 - 1 - 22



LEGEND

- DIVIDED HIGHWAY
- PAVED ROAD
- BITUMINOUS ROAD
- GRAVEL ROAD
- EARTHEN ROAD
- INTERSTATE HIGHWAY (80)
- UNITED STATES HIGHWAY (65)
- STATE HIGHWAY (237)
- COUNTY HIGHWAY (527)
- RAILROAD
- PIPELINE
- AIRPORT
- HYDROLOGY
- BRIDGE
- STATE BOUNDARY
- COUNTY BOUNDARY
- CORPORATE BOUNDARY
- TOWNSHIP LINE
- SECTION LINE
- ROAD NAMES (ABBEY ROAD)
- UNINCORPORATED PLACE (ELWOOD)
- STATE PARKS
- STATE INSTITUTIONS
- FEDERAL LAND

LEGEND

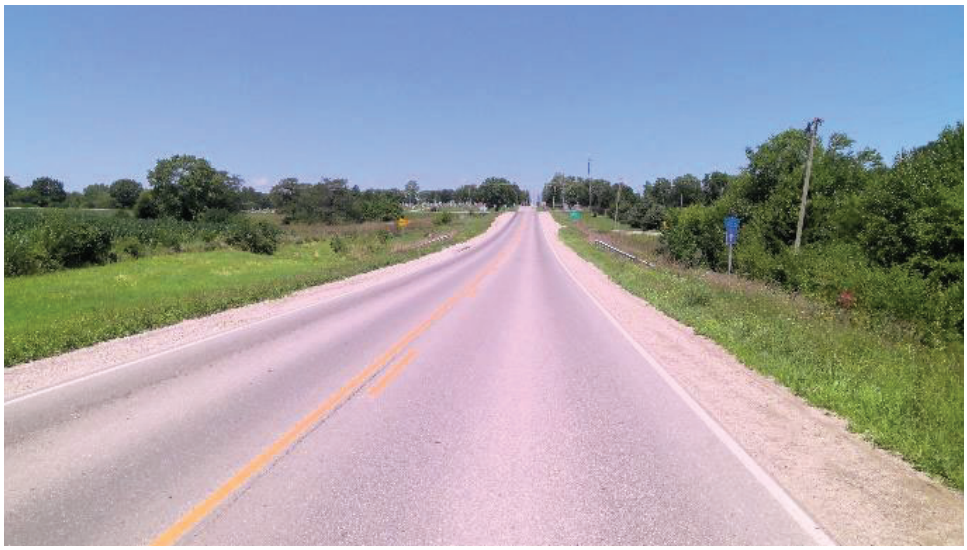
- Only Install Red Retroreflective Strips on Stop Sign Posts
- Install Red Beacon(s) Above Stop Signs and Yeallow or Red Reflective Strips on Signage
- Install Yellow Beacon Above Stop Ahead Signs and Yeallow or Red Reflective Strips on Signage

89

Location Photos

Red Beacon Locations

V56 & Highway 2



F

Location Photos

V56 & J40

Location Photos

F

V64 & Highway 16

Location Photos

F

V64 & Highway 2

W20 & Highway 2

F

Location Photos

W30 & Highway 16

Location Photos

F

W40 & Highway 16

W40 & J40

F

Location Photos

W40 & Highway 2

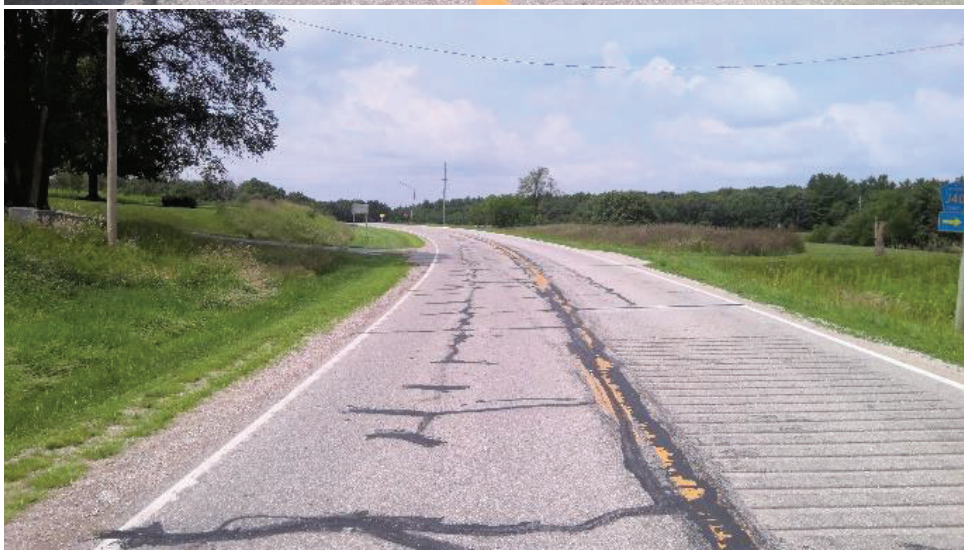
W46 & J40

Location Photos

Yellow Beacon Locations

Gold Approaching Highway 2

J40 Approaching Highway 1



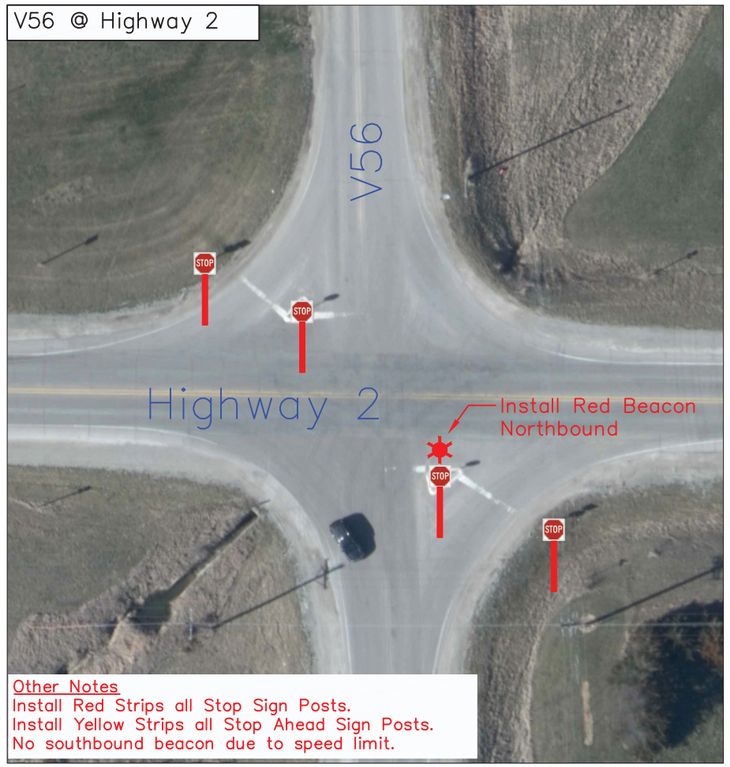
Red Beacon Installation Locations (Sheet 1)

G

N

1"=50'

V56 @ Highway 2

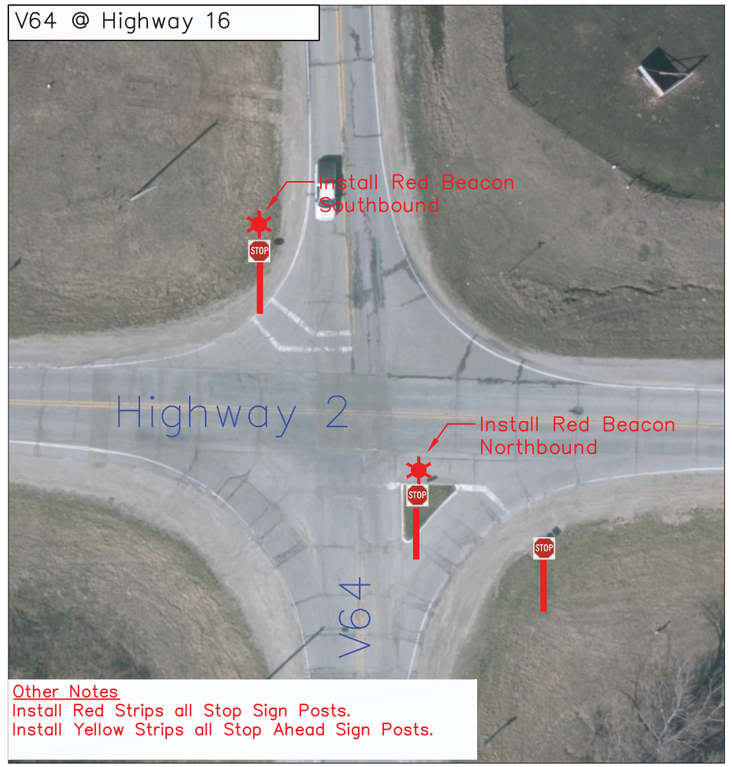


Other Notes
Install Red Strips all Stop Sign Posts.
Install Yellow Strips all Stop Ahead Sign Posts.
No southbound beacon due to speed limit.

V56 @ J40

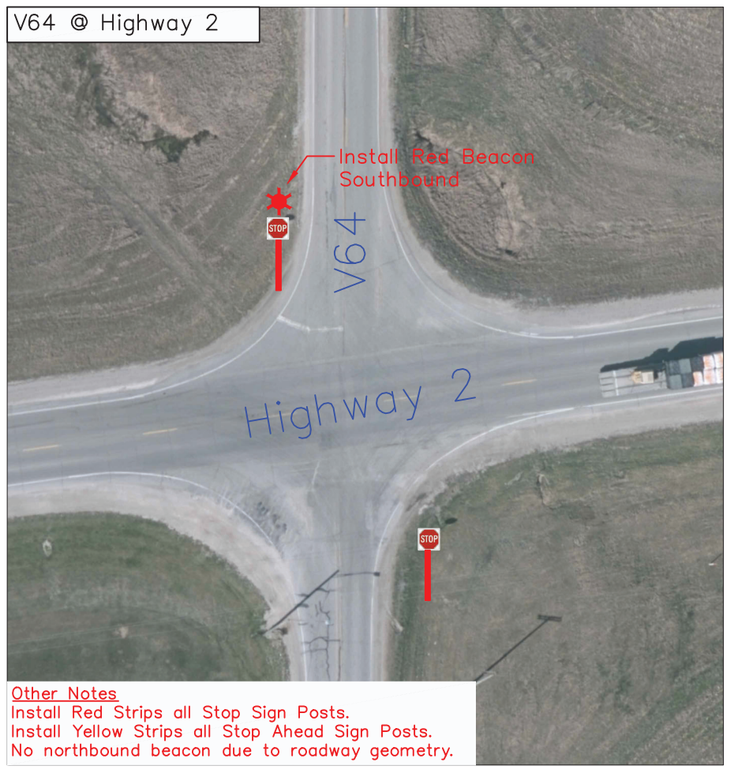
Other Notes
Install Red Strips all Stop Sign Posts.
Install Yellow Strips all Stop Ahead Sign Posts.

V64 @ Highway 16



Other Notes
Install Red Strips all Stop Sign Posts.
Install Yellow Strips all Stop Ahead Sign Posts.

V64 @ Highway 2

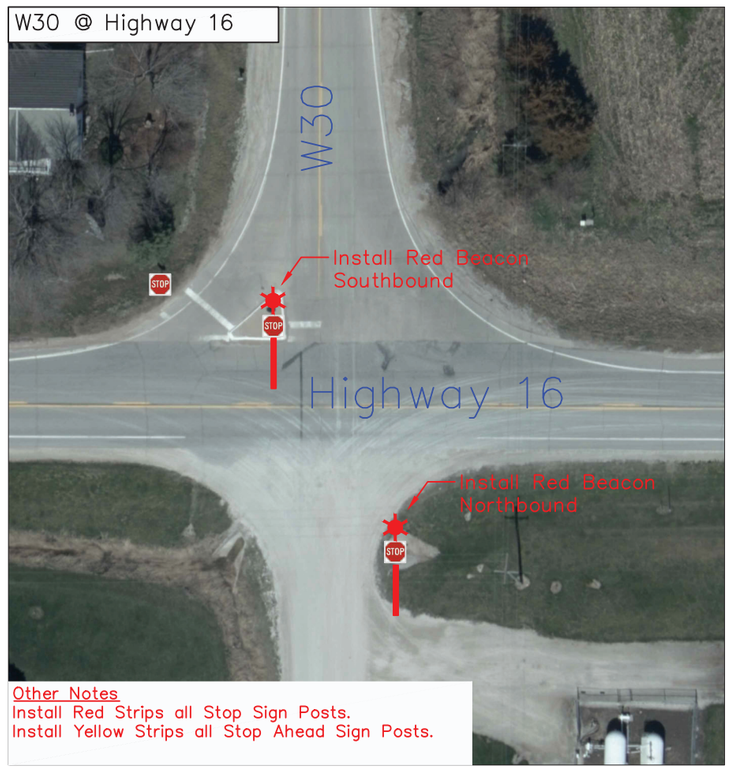


Other Notes
Install Red Strips all Stop Sign Posts.
Install Yellow Strips all Stop Ahead Sign Posts.
No northbound beacon due to roadway geometry.

W20 @ Highway 2

Other Notes
Install Red Strips all Stop Sign Posts.
Install Yellow Strips all Stop Ahead Sign Posts.

W30 @ Highway 16



Other Notes
Install Red Strips all Stop Sign Posts.
Install Yellow Strips all Stop Ahead Sign Posts.

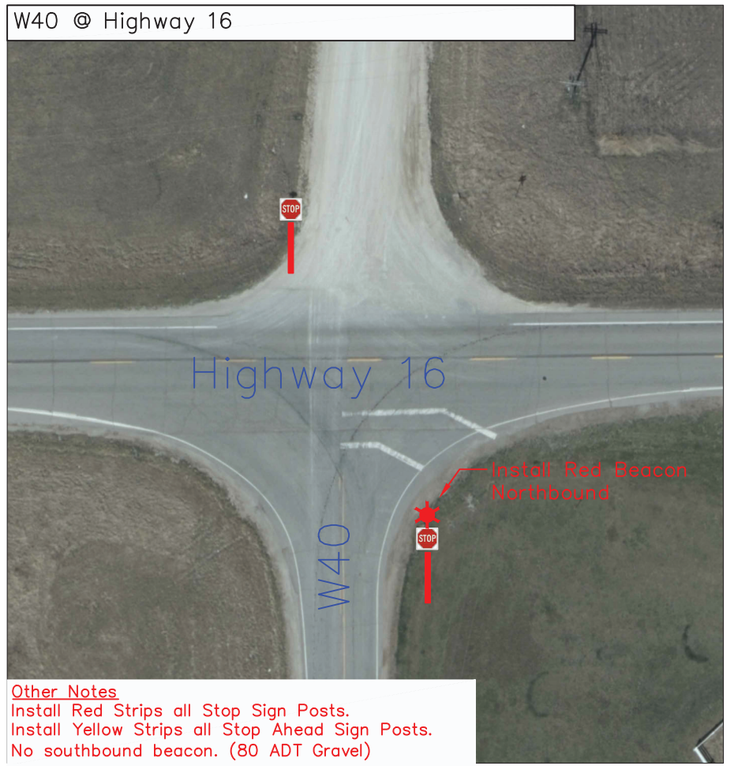
Red Beacon Installation Locations (Sheet 2)

G

N

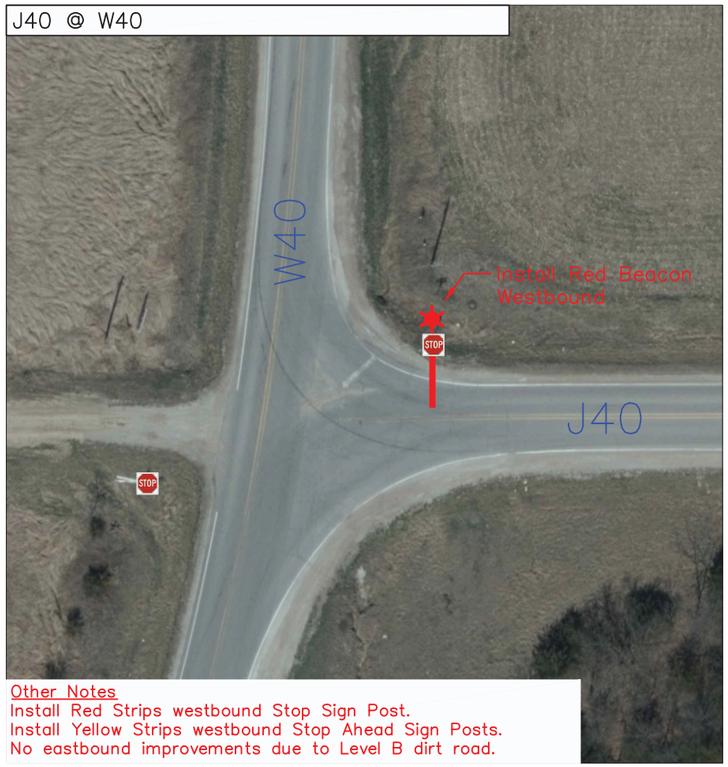
1"=50'

W40 @ Highway 16



Other Notes
Install Red Strips all Stop Sign Posts.
Install Yellow Strips all Stop Ahead Sign Posts.
No southbound beacon. (80 ADT Gravel)

J40 @ W40

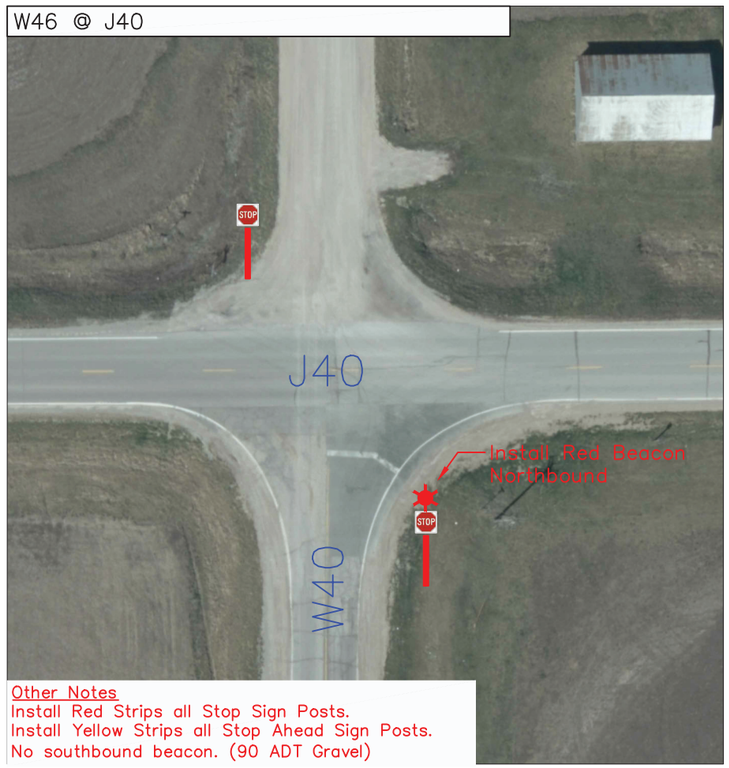


Other Notes
Install Red Strips westbound Stop Sign Post.
Install Yellow Strips westbound Stop Ahead Sign Posts.
No eastbound improvements due to Level B dirt road.

W40 @ Highway 2

Other Notes
Install Red Strips onl Stop Sign Post.
Install Yellow Strips all Stop Ahead Sign Posts.

W46 @ J40



Other Notes
Install Red Strips all Stop Sign Posts.
Install Yellow Strips all Stop Ahead Sign Posts.
No southbound beacon. (90 ADT Gravel)

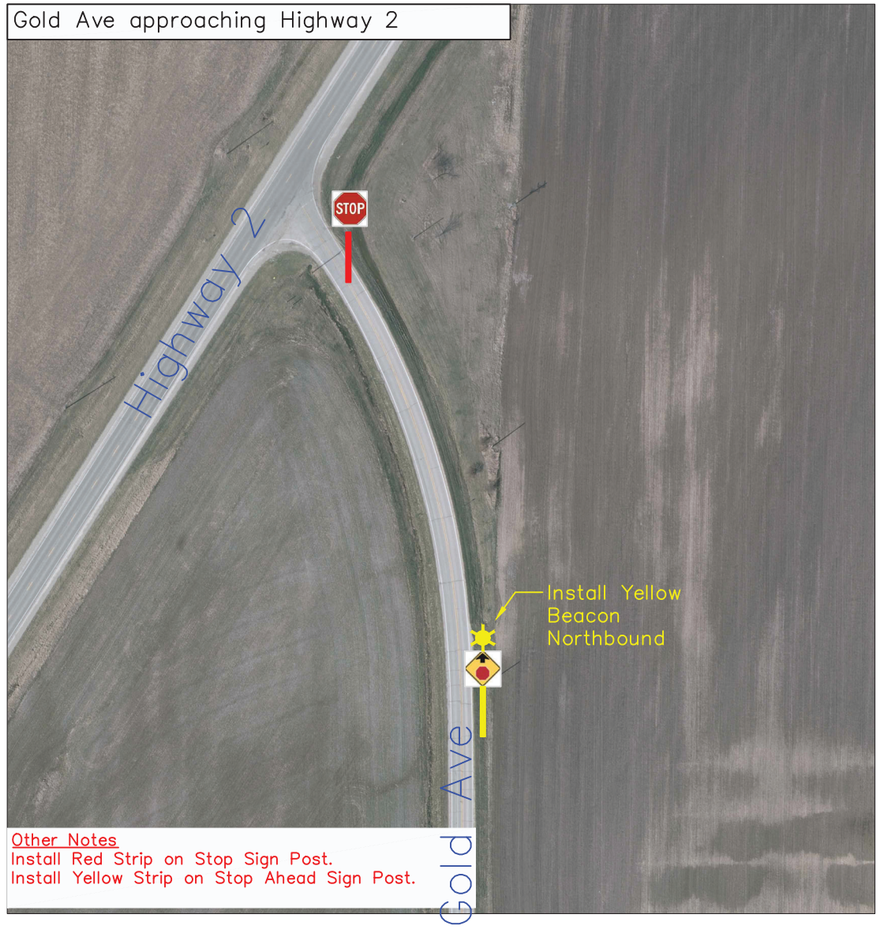
Yellow Beacon Installation Locations

G

N

1”=150’

Gold Ave approaching Highway 2



Other Notes
Install Red Strip on Stop Sign Post.
Install Yellow Strip on Stop Ahead Sign Post.

J40 approaching Highway 1

Other Notes
Install Red Strip on Stop Sign Post.
Install Yellow Strips on Stop Ahead Sign Post.

TRAFFIC FLOW MAP OF H

VAN BUREN COUNTY
IOWA

Prepared By

IOWA DOT

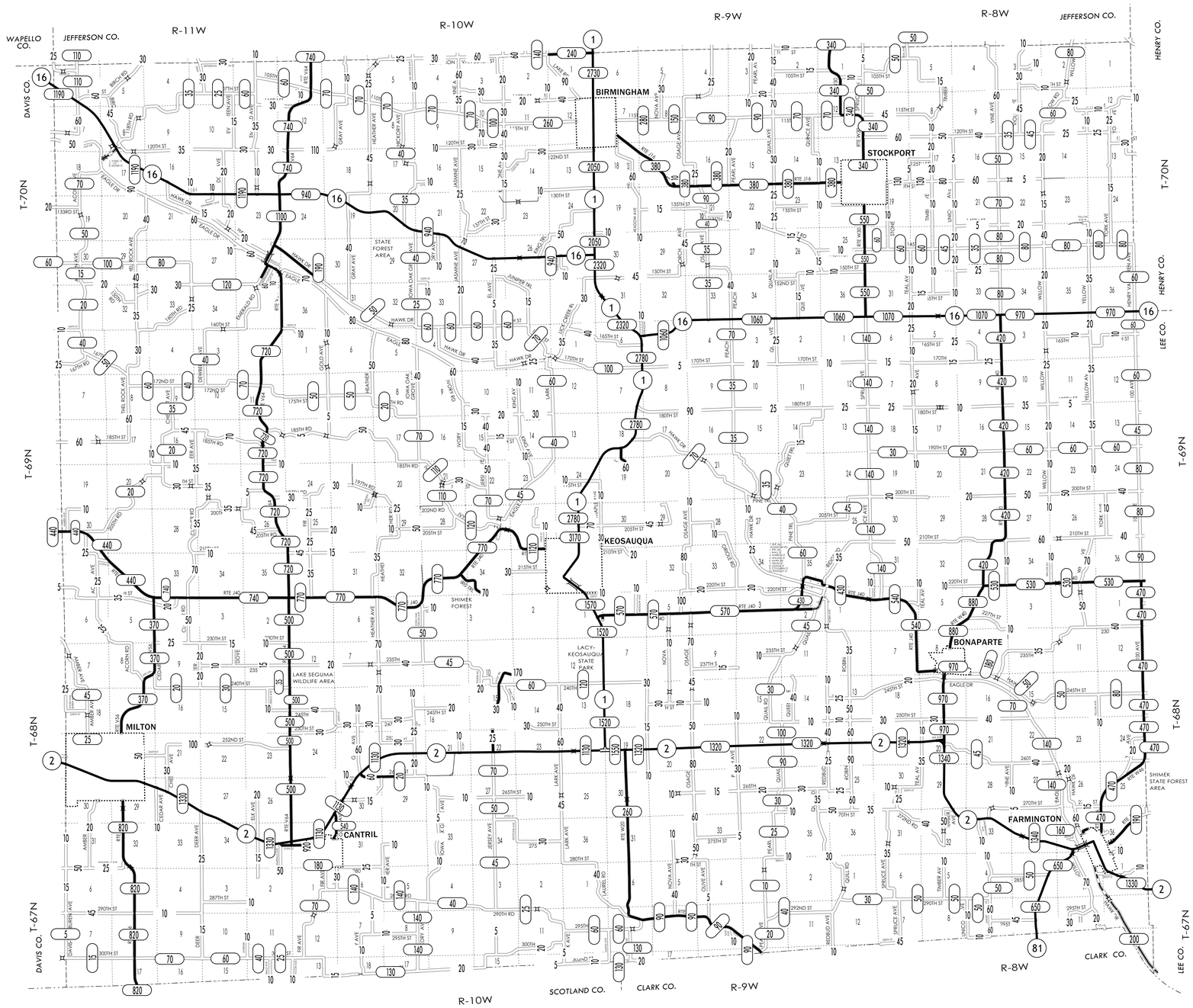
SYSTEMS PLANNING BUREAU
Phone: (515) 239-1664
WWW.IOWADOT.GOV/MAPS

In Cooperation With
United States
Department of Transportation

JANUARY 1, 2022

2022 ANNUAL AVERAGE DAILY TRAFFIC

HISTORICAL ANNUAL AVERAGE DAILY TRAFFIC



MILES
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KILOMETERS
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7 - 1 - 22

LEGEND

- DIVIDED HIGHWAY
- PAVED ROAD
- BITUMINOUS ROAD
- GRAVEL ROAD
- EARTHEN ROAD
- LEGAL NOT OPEN ROAD

STATE OF MISSOURI

2022

89

Intersection Traffic Volume Links

V56 & Highway 2
https://www.iowadot.gov/maps/msp/traffic/turning_movements/2018/89213221099.pdf

V64 & Highway 16
https://www.iowadot.gov/maps/msp/traffic/turning_movements/2018/89414981099.pdf

W40 & Highway 2
https://www.iowadot.gov/maps/msp/traffic/turning_movements/2018/89244123099.pdf

Supporting Information for "C"

Locations & Quantities (Page 1/2)

Road	Approaching	# Red Beacons	# Yellow Beacon	# Red Strip	# Yellow Strip	Notes
Old Highway 2	Highway 2	0	0	1	1	
V56	Highway 2	1	0	4	3	Northbound Beacon Only
Chestnut Ave	Highway 2	0	0	1	0	
Deer Ave	Highway 2	0	0	1	0	
Elk Ave	Highway 2	0	0	1	0	NB Only, SB Level B
V64	Highway 2	1	0	2	3	Southbound Beacon Only
Gold Ave	Highway 2	0	1	1	1	
265th	Highway 2	0	0	1	0	
260th/Gray	Highway 2	0	0	2	0	
Hickory Ave	Highway 2	0	0	2	0	
Jersey Ave	Highway 2	0	0	2	0	
Lark Ave	Highway 2	0	0	2	0	
W20	Highway 2	1	0	1	2	
Nickel Ave	Highway 2	0	0	1	0	SB only, NB Level B
Osage Ave	Highway 2	0	0	2	0	
Peach Ave	Highway 2	0	0	1	0	NB Only
Quail Ave	Highway 2	0	0	2	0	
Redbud Ave	Highway 2	0	0	1	0	SB Only, NP Closed
Robin Ave	Highway 2	0	0	2	0	
Teal Ave	Highway 2	0	0	1	0	NB Only, SB Level B
W40 WB	Highway 2	0	0	1	1	
W40 SB	Highway 2	1	0	1	2	Southbound Beacon Only
Timber Ave	Highway 2	0	0	1	0	
Eagle Drive	Highway 2	0	0	1	0	
Willow Ave	Highway 81	0	0	1	0	
285th	Highway 81	0	0	1	0	
295th	Highway 81	0	0	1	0	
V56	J40	1	0	1	2	NB Tee
Acorn	Highway 16	0	0	2	0	
Bridge Street	Highway 16	0	0	2	0	
Deer Ave	Highway 16	0	0	1	0	
Dove	Highway 16	0	0	2	0	
V64	Highway 16	2	0	3	2	
Gray Ave	Highway 16	0	0	2	0	
Hickory Ave	Highway 16	0	0	1	0	
Iowa Oak Grove Ave	Highway 16	0	0	1	0	
Jasmine Ave	Highway 16	0	0	2	0	
Jewel Ave	Highway 16	0	0	1	0	
King Trail	Highway 16	0	0	1	0	
Osage Ave	Highway 16	0	0	1	0	
Peach Ave	Highway 16	0	0	2	0	
Quail Ave	Highway 16	0	0	1	0	
Page 1 Subtotal		7	1	61	17	

Supporting Information for "C"

Locations & Quantities (Page 2/2)

Road	Approaching	# Red Beacons	# Yellow Beacon	# Red Strip	# Yellow Strip	Notes
Queen Ave	Highway 16	0	0	1	0	
W30	Highway 16	2	0	3	2	
Teal Ave	Highway 16	0	0	2	0	
W40	Highway 16	1	0	2	3	
Willow Ave	Highway 16	0	0	2	0	
Yellow Ave	Highway 16	0	0	2	0	
W46	Highway 16	0	0	2	0	
J40	W40	1	0	1	1	WB Only, EB Level B
W46	J40	1	0	2	2	
Cedar	Highway 1	0	0	2	0	
Washington Street	Highway 1	0	0	1	0	Tee
122nd	Highway 1	0	0	1	0	Tee
King Trail	Highway 1	0	0	1	0	Tee
Lick Creek Road/150th	Highway 1	0	0	2	0	
165th	Highway 1	0	0	1	0	Tee
170th	Highway 1	0	0	1	0	EB Only
180th	Highway 1	0	0	1	0	Tee
Maple Ave	Highway 1	0	0	1	0	Tee
195th	Highway 1	0	0	1	0	EB Only
205th	Highway 1	0	0	1	0	Tee
J40	Highway 1	0	1	1	1	Tee
240th	Highway 1	0	0	2	0	
Page 2 Subtotal		5	1	33	9	
Page 1 Subtotal		7	1	61	17	
	Totals	**12**	**2**	**94**	**26**	