Traffic Safety Improvement Program

Site-Specific Category
FY 2026

Applications Received by August 16, 2024

Applications listed in alphabetical order by applicant.

Page No:	Applicant	Improvement	$$$		
			Total Project	Safety	Requested
5	Buchanan County	Add 4' PCC shoulders, centerline and edgeline rumble strips, safety edge, 6" pavement markings, and chevrons	$3,612,000	$572,614	$500,000
29	City of Ames	Install left-turn lanes, convert to FYA, and change to protected left turn phasing	$2,785,000	$525,198	$500,000
54	City of Ankeny	4 to 5 lane conversion (construct TWLTL)	$9,464,000	$919,900	$500,000
81	City of Bondurant	Install left-turn lanes and realign intersection	$3,682,970	$2,528,000	$500,000
106	City of Cedar Falls/District 2	Roundabout	$1,796,900	$1,517,000	$500,000
131	City of Cedar Rapids	Install PHB and fence median	$841,180	$821,180	$500,000
156	City of Cedar Rapids	Install directional median (3/4)	$508,336	$404,501	$404,501
181	City of Clinton	Install left turn lanes	$449,090	$399,090	$399,090
207	City of Coralville	Roundabout	$1,258,000	$1,133,000	$500,000
233	City of Davenport	Install Traffic Signal	$300,000	$300,000	$300,000
260	City of Davenport	Install directional median	$150,000	$150,000	$150,000
285	City of Des Moines	3 to 2-lane reduction, construct shared used path, and install retroreflective backplates	$2,100,000	$625,000	$500,000
307	City of Epworth	Roundabout	$1,352,528	$1,138,525	$500,000
333	City of Fort Dodge	4 to 3 lane conversion	$5,981,000	$1,403,500	$500,000
358	City of Hiawatha	Roundabout	$1,270,143	$608,396	$500,000
382	City of Marion	Convert shared left/thru lane to left lane only, convert right lane to thru lane, add right turn lane, increase left turn bay storage, replace	$617,250	$607,250	$500,000

		traffic signals, optimize signal timing and interconnectivity, and add retroreflective backplates			
407	City of Sioux City	4 to 3 lane conversion	$91,804	$91,804	$91,804
430	City of Urbandale	Convert to diverging diamond	$15,234,030	$6,239,340	$500,000
456	District 1	4 to 3 lane conversion	$1,050,000	$1,050,000	$500,000
469	District 1/State Center	Install RCI	$2,000,000	$2,000,000	$500,000
494	Fayette County	Add 2' HMA shoulders, shoulder rumble strips, safety edge, and 6" pavement markings	$4,323,090	$1,057,579	$500,000
512	Henry County	2' PCC shoulders, safety edge, centerline and edgeline rumble strips, and 6" pavement markings	$3,129,179	$531,416	$500,000
537	Humboldt County	4' paved shoulders, 6 inch pavement markings, and shoulder rumble strips	$345,654	$345,654	$345,654
556	Jefferson County	4' paved shoulders, centerline and edgeline rumble strips, and 6" pavement markings	$2,604,323	$222,986	$222,986
568	Jefferson County	4' PCC shoulders, centerline and edgeline rumble strips, safety edge, and high friction surface treatment	$4,856,325	$725,312	$500,000
581	Johnson County	Install left and right turn lanes	$730,099	$593,264	$500,000
606	Jones County	Realign horizontal curves, centerline and edgeline rumble strips, widen lanes, paved shoulder, safety edge, 6" pavement markings, and flatten slopes	$5,750,000	$1,141,000	$500,000
627	Linn County/City of Cedar Rapids	Roundabout	$1,655,027	$1,600,277	$500,000
660	Madison/Dallas County	Lane widening, 4' paved shoulders, shoulder rumble strips, 6 inch pavement markings, safety edge, chevron signs, and advisory speed signs	$432,300	$432,300	$432,300
684	Marion County	Destination Lighting	$231,000	$231,000	$231,000

837	Plymouth County	Widen shoulders and flatten foreslopes	$1,151,300	$915,000	$500,000
863	**Totals**	**Projects**	$79,752,528	$30,830,086	$13,577,335

A 1

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Application for SITE-SPECIFIC TSIP FUNDS

GENERAL INFORMATION **DATE:** July 17, 2024

Location / Title of Project W-45 from 130th St to 180th St.

Applicant Buchanan County Secondary Roads

Contact Person Brian Keierleber Title Buchanan County Engineer

Complete Mailing Address 1511 1St St. East

Independence, Iowa 50644

Phone (319)334-6031 (Area Code) E-Mail engineer@co.buchanan.ia.us

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	$	572,614
Total Project Cost	$	3,612,000
Safety Funds Requested	**$**	**500,000**

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
	W-45 AND C-64 (130th St)	☐	☒		
		☐	☐		

A2

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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 BUCHANAN COUNTY SECONDARY ROADS

Signed: Brian P. Keierleber 7/17/24

Signature Date Signed

BRIAN P. KEIERLEBER

Printed Name

Attest: Janet Payne 7/17/24

Signature Date Signed

Janet Payne

Printed Name

A3

RESOLUTION 24-80

WHEREAS, Safety is a major concern of the Buchanan County Board of Supervisors and Highway Safety is a major aspect of safety;

WHEREAS, funding is insufficient to provide all the appropriate safety components on our county roadways;

NOW THEREFORE, it be resolved by the Board of Supervisors to apply for safety funding on County Road W-45 from 130th Street to 180th Street as part of the programmed project on County Road W-45. It is also assured by the Buchanan County Board of Supervisors that any funded improvements will be adequately maintained.

Passed this 28th day of June 2024.

Dawn Vogel, Chairperson
Board of Supervisors
Buchanan County, Iowa

ATTEST:

Kris Wilgenbusch, County Auditor

A4

Local Road Safety Plan
Project Description for Segment Improvements

Risk Factor Points: 8

Project Name: SLATER AVE between 1ST ST and ALICE ST
Agency Name: Buchanan County
Contact Name: Keierleber, Brian
E-mail: engineer@co.buchanan.ia.us

Date: 8/17/15

Prepared By: DJG/DVM
Checked By: MMO

Location Description

Paved Road: SLATER AVE
Length (mi): 9.56

GPS ID: 671

Project Location

Segment Information and Systemic Ranking Summary

Systemic Ranking Summary	Value	Points
Average Daily Traffic (ADT)	966	6
Pavement and Shoulder Width (ft)	30.0	0
Number of Driveways/Intersections per Mile	4.19	0
Lane Departure Crash Rate per VMT	0.00012	2
Total Risk Factor Points (18 max)		**8**

Other Information	
Paved Shoulder	No
Shoulder Width (ft)	4
Speed Limit (mph)	55
Lane Width (ft)	11.0
Number of Lanes	2
Rumble Strips	No

	Key Emphasis Areas
	Younger Drivers
	Older Drivers
	Speed-Related
	Impaired Driving
	Inattentive/Distracted Driving
	Unprotected Persons
X	Lane Departures
X	Roadside Collisions
	Intersections
X	Local Roads

Crash Data, 2004-2013	
Total Crashes	46
K and A Crashes	2

Opinion of Probable Cost

Item No.	Item Description	Quantity	Unit	Unit Price	Item Cost
	Install 4" Retroreflective Edgeline (Both Sides of Road)	9.56	MILE	$ 1,200	$ 11,467
	Install 6" Retroreflective Edgeline (Both Sides of Road)	0.00	MILE	$ 1,800	$ -
	Install 4" Retroreflective Centerline	9.56	MILE	$ 800	$ 7,645
	Pave 2' Shoulder with Safety Edge (Both Sides of Road)	0.00	MILE	$ 65,000	$ -
	Install Edgeline Rumble Strips (Both Sides of Road)	9.56	MILE	$ 2,000	$ 19,112
	Install Centerline Rumble Strips	0.00	MILE	$ 1,000	$ -
	Clear and Grub (15 ft Both Sides of Road)	9.56	MILE	$ 20,000	$ 191,120

Basis for Cost Projection

- ☑ No Design Completed
- ☐ Preliminary Design
- ☐ Final Design

Subtotal:		$ 229,344
Engineering: (% +/-)	15%	$ 34,768
Mobilization: (% +/-)*	10%	$ 22,940
Traffic Control: (% +/-)	5%	$ 11,589
Contingency:(% +/-)	20%	$ 46,358
Estimated Project Cost:		**$ 345,000**

* Mobilization is 10% +/- of the subtotal with a minimum of $2,500 and a maximum of $75,000.

Opinion of Probable Construction Cost Disclaimer:
Kimley-Horn has no control over the cost of labor, materials, equipment, or over the Contractor's methods of determining prices or over competitive bidding or market conditions. Opinions of probable costs provided herein are based on the information known to Kimley-Horn at this time and represent only the Kimley-Horn's judgment as a design professional familiar with the construction industry. The Kimley-Horn cannot and does not guarantee that proposals, bids, or actual construction costs will not vary from its opinions of probable costs.

Project Description Form Disclaimer:
The recommended improvements contained in this project description form were developed through a Geographic Information System (GIS) database risk assessment and project decision tree selection process, as specifically stated in our scope of services. Kimley-Horn has no control over the accuracy of the GIS databases nor the suitability of the specific improvements for the location, and has provided recommended improvements for consideration by the County Engineer. The County Engineer may use this project description form to aid in the selection and development of projects, but this project description form should not be used as the sole basis for the County Engineer's decision making process. We endeavored to research issues and constraints to the extent practical given the scope, budget, and schedule agreed to with the Client. Our assessment is based in large part on information provided to us by others (DOT, county staff, etc.) and therefore is only as accurate and complete as the information provided to us. This project description form is based on our knowledge as of August 2015.

Project Location Map Sources:
Esri, DeLorme, NAVTEQ, USGS, Intermap, iPC, NRCAN, Esri Japan, METI, Esri China (Hong Kong), Esri (Thailand), TomTom, 2013, DigitalGlobe, GeoEye, i-cubed, USDA, AEX, Getmapping, Aerogrip, IGN, IGP, swisstopo, and the GIS User Community

End of Project Description

Kimley»Horn

Narrative: W-45 South of Aurora Overlay

This portion of W-45 south of Aurora was paved in 1970 by Booth and Associates. It has performed quite well but it is experiencing one major problem typical of many of the pavements from that timeframe. The center tie rebar are corroding out and the slabs are separating. In many of areas where the pavement has failed we have patched the pavement. The separating slabs create a dilemma in repairing because filling the gaps are difficult to keep filled. That presents a significant risk to motorcyclists and bicyclists. The existing road has 11ft. wide lanes and 6 ft. wide shoulders. The speed limit is 55 MPH. It currently meets all MUTCD requirements. We meet the clear zone requirements and have all trees removed from the clearzone. Our plans are to place a 6-inch-thick concrete overlay on the existing pavement utilizing a fabric bond breaker. We plan to pave a 4ft. tied shoulder, and place safety edge on the shoulder. We also pave the radius back on intersections. We plan to place centerline rumbles and shoulder rumbles, and chevrons on the curves. The accident history is not dramatic but failure to address these improvements could have serious consequences. The paved shoulder, centerline rumble strips, shoulder rumble strips and the 6" reflective shoulder markings all are listed in our 2016 Local Road Safety Plan. In addition, we will continue the practice of the 6" wide centerline and shoulder markings. The wider pavement markings create a response from the motorist that the road feels narrower. That being the case, it should assist in slowing the motorist down. The road carries a lot of truck traffic and is a major route carrying grain from NE Iowa to Cedar Rapids. In addition, it has a major Limestone Quarry adjacent to the project that produces a large quantity of Class 3I aggregate. The quarry is expanding. Also adjacent to the project is Jakway Park with camping, hunting, and fishing. Several historical buildings are there. The Jakway house from 1851 can be toured. The town there was listed in the 1852 Census as having a population of 45 people. It was originally known as Buchanan and later as Buffalo Grove. The town was known by most as Mudville due to the muddy roads. The residents moved adjacent to the railroad at the location now known as Aurora. Also adjacent is the very first in the world Ultra High-Performance Concrete (UHPC) PI Beam Bridge. It is known as the Jakway Park Bridge. It was constructed in 2008 and has received

international attention and has been studied around the world. Our goal of paving 4ft. shoulders as we resurface the road improves safety for everyone. It is my belief that agricultural equipment partially off the road improves safety dramatically as the approaching motorist has it register in their mind that something is different, and the motorist must identify it. If the slow-moving equipment is just in the lane the mind registers it as normal and anticipates it to be travelling at a similar speed. In addition, we have many bicyclists in Buchanan County and are considered bicycle friendly. Improving the safety of this road and demonstrating what can be accomplished will benefit residents and travelers.

W-45 Cost Estimate Based on April 2024 Av. Bid prices

Item number and Description	Quantity/units	Unit Price	Amount
2102-2710090			
EXCAVATION, CLASS 10, WASTE	250 CY	$9.56	$ 2,397
2121-7425020			
GRANULAR SHOULDERS, TYPE B	5250 Ton	$29.38	$154,245
2122-5190008			
PAVED SHOULDER, P.C. CONCRETE	2214 SY	$43.59	$96,508
8 IN.			
2212-5075001			
HOT MIX ASPHALT SURFACE	20 Ton	$246.59	$4,932
Patches			
2213-7100400			
RELOCATION OF MAILBOXES	10 Each	$338.73	$3,387
2301-1034090			
STANDARD OR SLIP FORM			
PORTLAND CEMENT CONCRETE	3583 SY	$45.39	$162,632
PAVEMENT, CLASS C, CLASS 3			
Durability, 9 inch			
2310-5151045			
PORTLAND CEMENT CONCRETE			
OVERLAY, PLACEMENT ONLY	65,040 SY	$5.74	$373,330
2310-5151040			
PORTLAND CEMENT CONCRETE OVERLAY			
FURNISH ONLY	17,622 CY	$114.58	$2,019,128

C2

Item number and Description	Quantity/units	Unit Price	Amount
2310-8300550			
PAVEMENT INTERLAYER	96,120 SY	$3.10	$297,972
GEOTEXTILE			
2312-8260051			
GRANULAR SURFACING ON ROAD	160 TON	$26.48	$4,237
CLASS A CRUSHED STONE			
2315-8275025			
SURFACING, DRIVEWAY, CLASS A	448 TON	$29.94	$13,413
CRUSHED STONE			
2316-0000110			
PAYMENT ADJUSTMENT			
INCENTIVE/DISINCENTIVE FOR PCC	1 EACH		$32,650
PAVEMENT SMOOTHNESS (BY			
SCHEDULE)			
2524-9130011 Marker, Chevron W1-18	18 Each	$622.34	$11,202.
2510-6745850			
REMOVAL OF PAVEMENT	SY		
2526-8285000			
CONSTRUCTION SURVEY	LUMP SUM		$18,000
2527-9263109			
PAINTED PAVEMENT MARKINGS	1191 STA	$21.90	$26,083
WATERBORNE OR SOLVENT-BASED			
2528-2518000			
SAFETY CLOSURE	14 EACH	195.45	$2,736
2528-8445110			
TRAFFIC CONTROL	LUMP SUM		$19,412

C3

Item number and Description	Quantity/units	Unit Price	Amount
2533-4980005 MOBILIZATION	Lump Sum		$160,000
2548-0000200 MILLED SHOULDER RUMBLE STRIPS, PCC SURFACE	479 STA,	$52.12	$24,965
2548-0000320 MILLED CENTERLINE RUMBLE STRIPS, PCC SURFACE	231 STA	$48.73	$11,256
2599-9999017 ('STATIONS' ITEM) BASE PREPERATION FOR 7 IN. PAVED SHOULDERS	441 STA	$38.00	$16,758
2599-9999018 ('SQUARE YARDS' ITEM) PAVED SHOULDER, P.C. CONCRETE, 8 IN. PLACE ONLY	24,535 SY	$6.32	$155,061

Total Project Cost Estimate $3,612,000

C4

Cost of Safety Improvements with 2 ft. shoulders

2599-9999020

MILLED SHOULDER RUMBLE STRIPS, 479 STA, $52.12 $24,965

PCC SURFACE

2548-0000320

MILLED CENTERLINE RUMBLE 231 STA $48.73 $11,256

STR2527-9263109

PAINTED PAVEMENT MARKING, 1191 STA $21.90 $26,083

WATERBORNE OR SOLVENT-BASED

IPS, PCC SURFACE

2599-9999018 ((2 ft. shoulder with safety edge)3 ft. pavement x 2 sides x 5.13 miles x 5280 x1/9 =18,057)

('SQUARE YARDS' ITEM) PAVED 18,057 SY $6.32 $114,124

SHOULDER, P.C. CONCRETE, 8 IN.

PLACE ONLY

2310-5151040

PORTLAND CEMENT CONCRETE (5 ft x 5280 x 5.13 miles x .67 ft. /27 = 3360 cy)

OVERLAY, FURNISH ONLY 3360 CY $114.58 $384,988

<u>Total Safety Improvement cost $572,614</u>

D.

W-45 Time Schedule

Plan Development

Concept Statement	2/18/25
Preliminary Plans	5/20/25
Check Plans	7/01/25
Final Plans	8/18/25
Letting	11/18/25

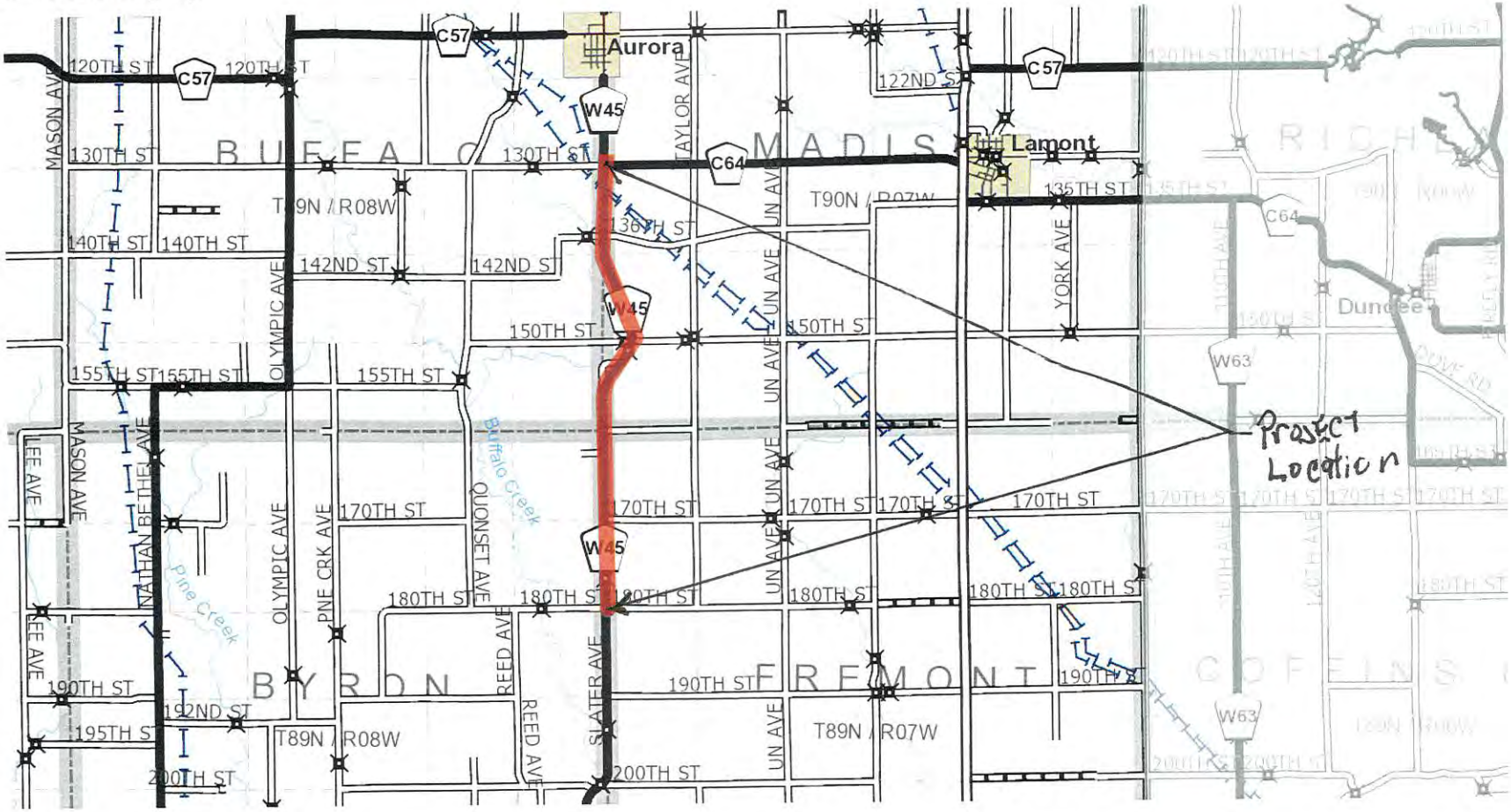
Project Completion 11/01/26

E

Untitled project

Buchanan - ICEASB Easy Map

8:29 AM, Thu, Jul 25, 2024



Feature Key

Earth	Gravel	Seal Coat	County Pavement	State Pavement
Divided Hwy	Water	City	Township	Railroad
Bridge	E27 County Hwy	175 State Hwy	6 US Hwy	

N

Miles

0 1 2 4

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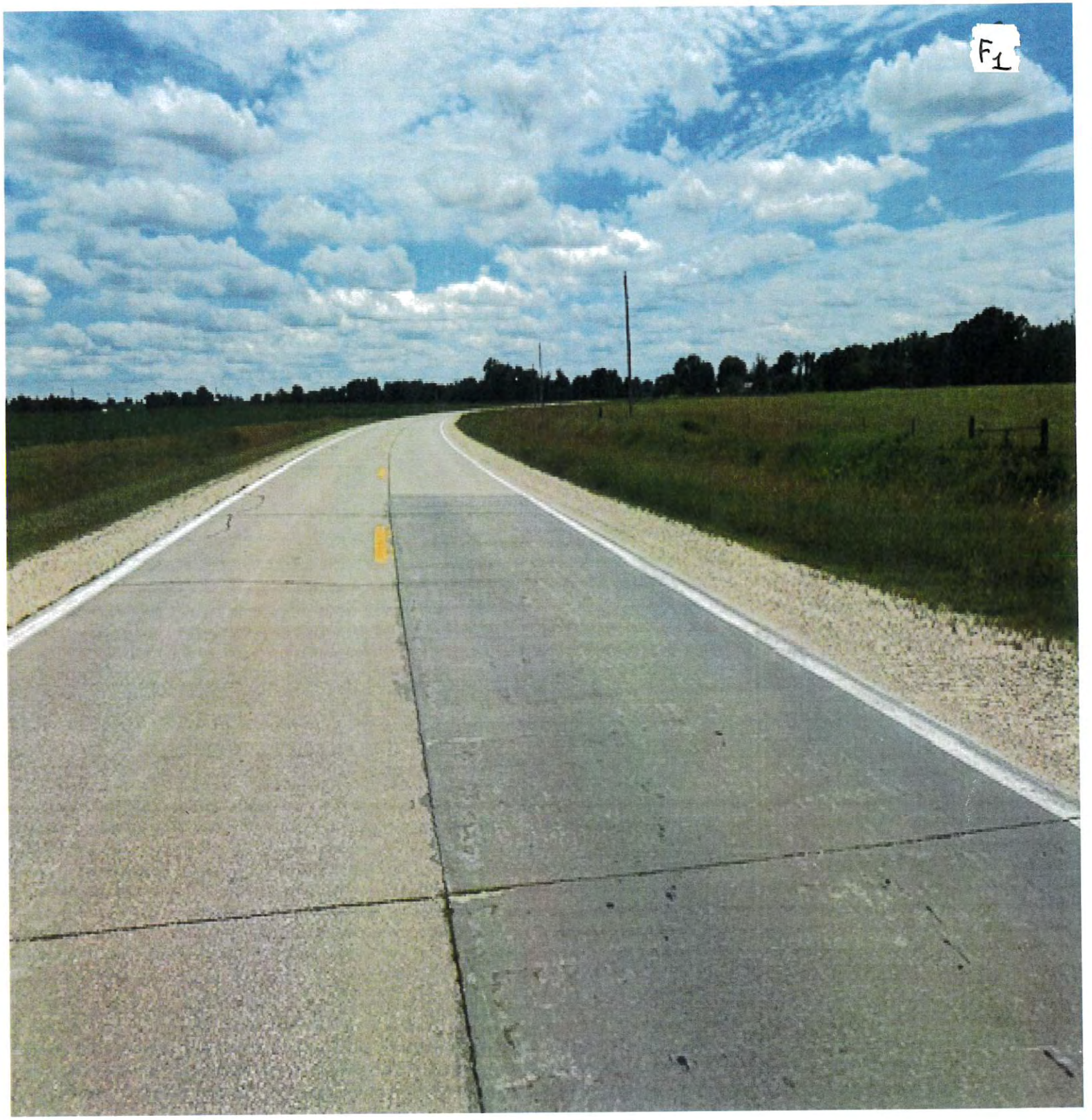
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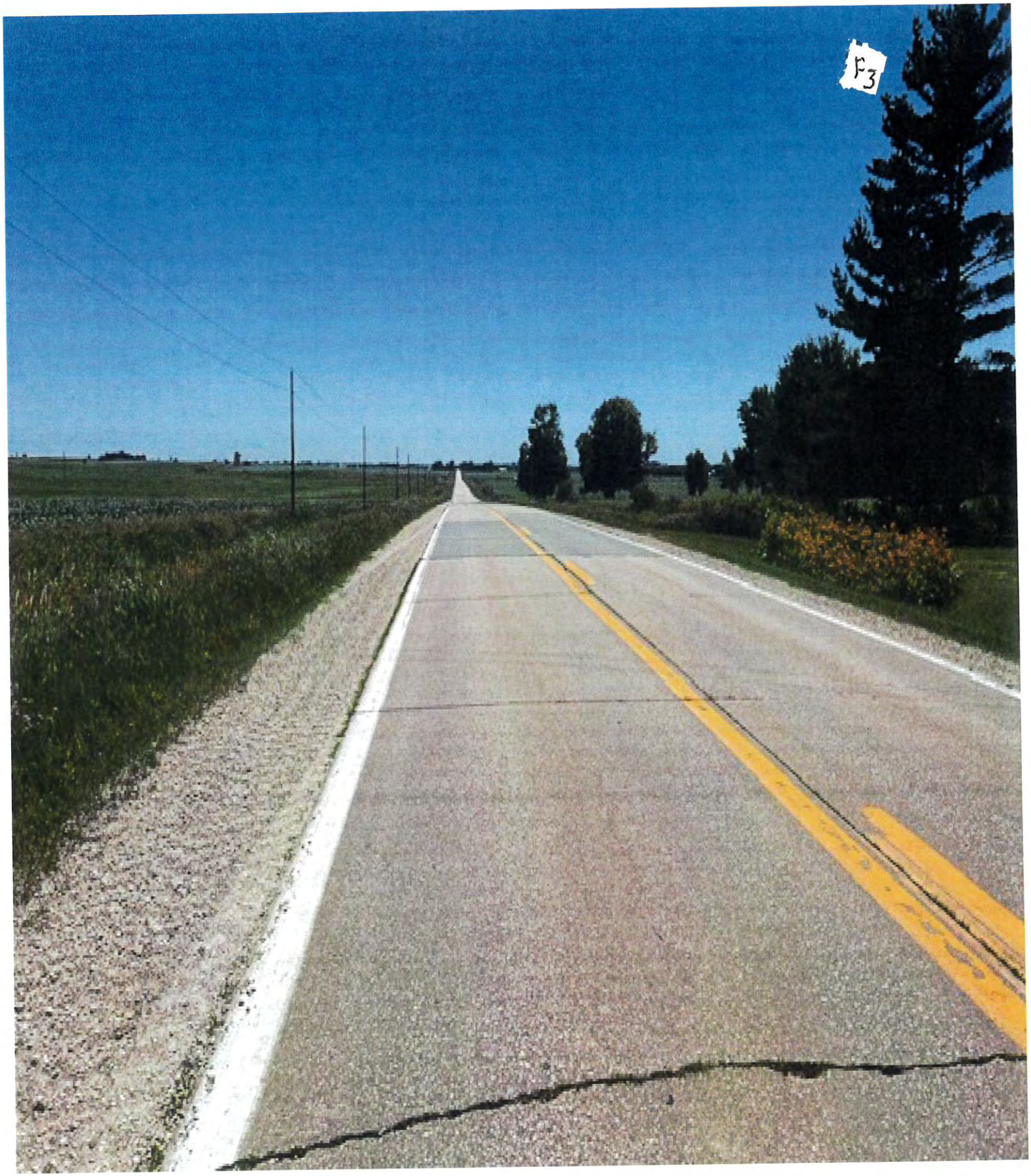
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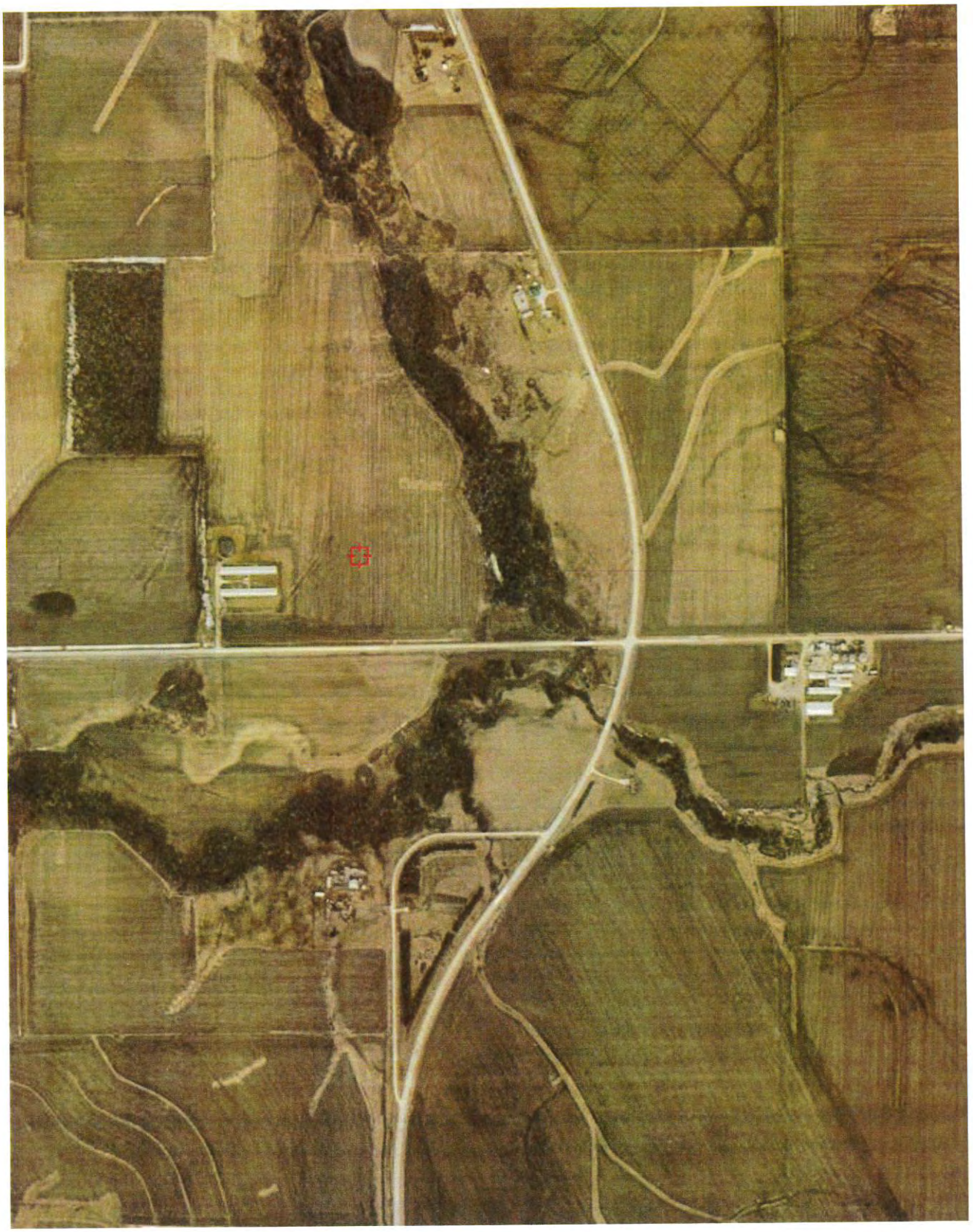

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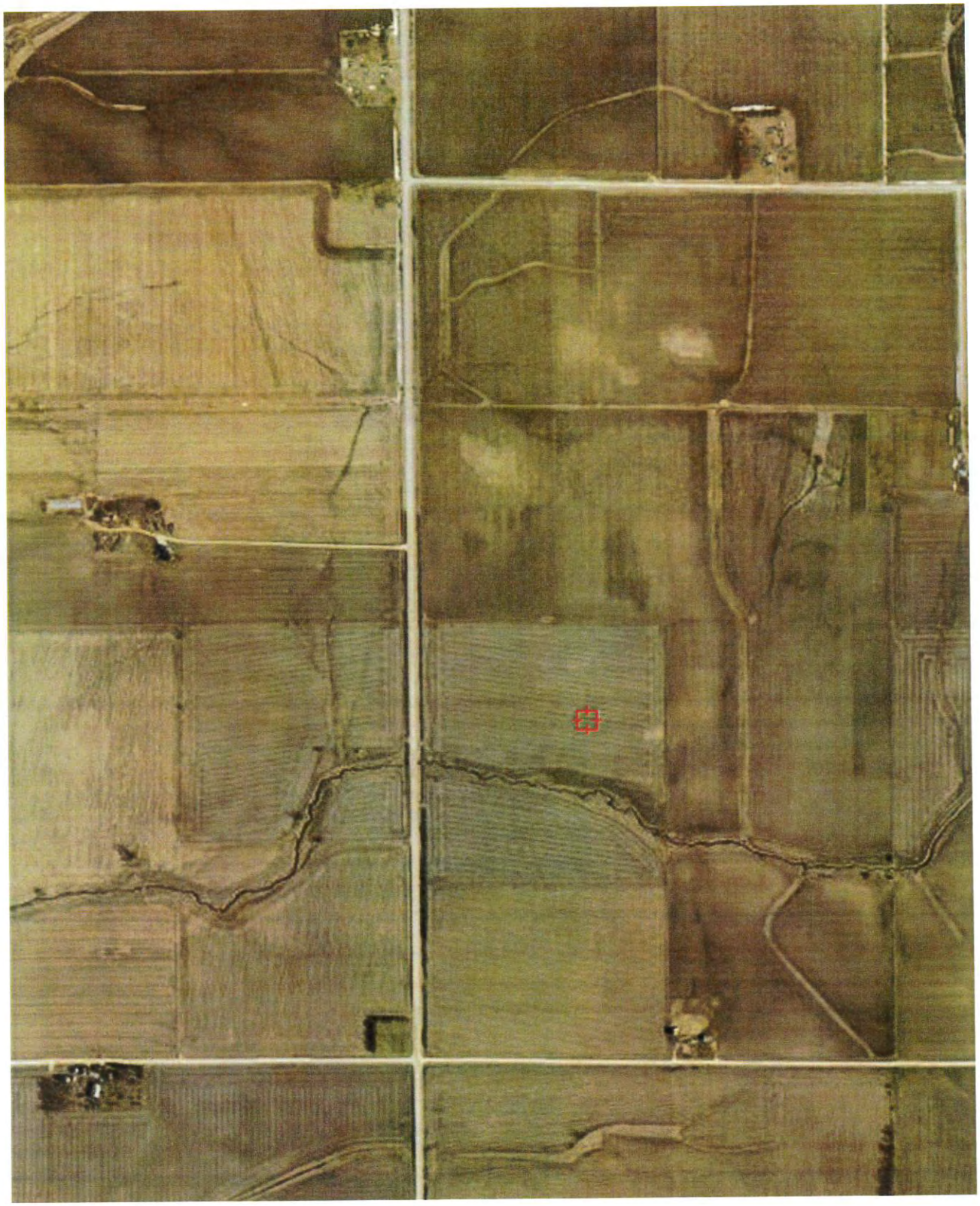


I

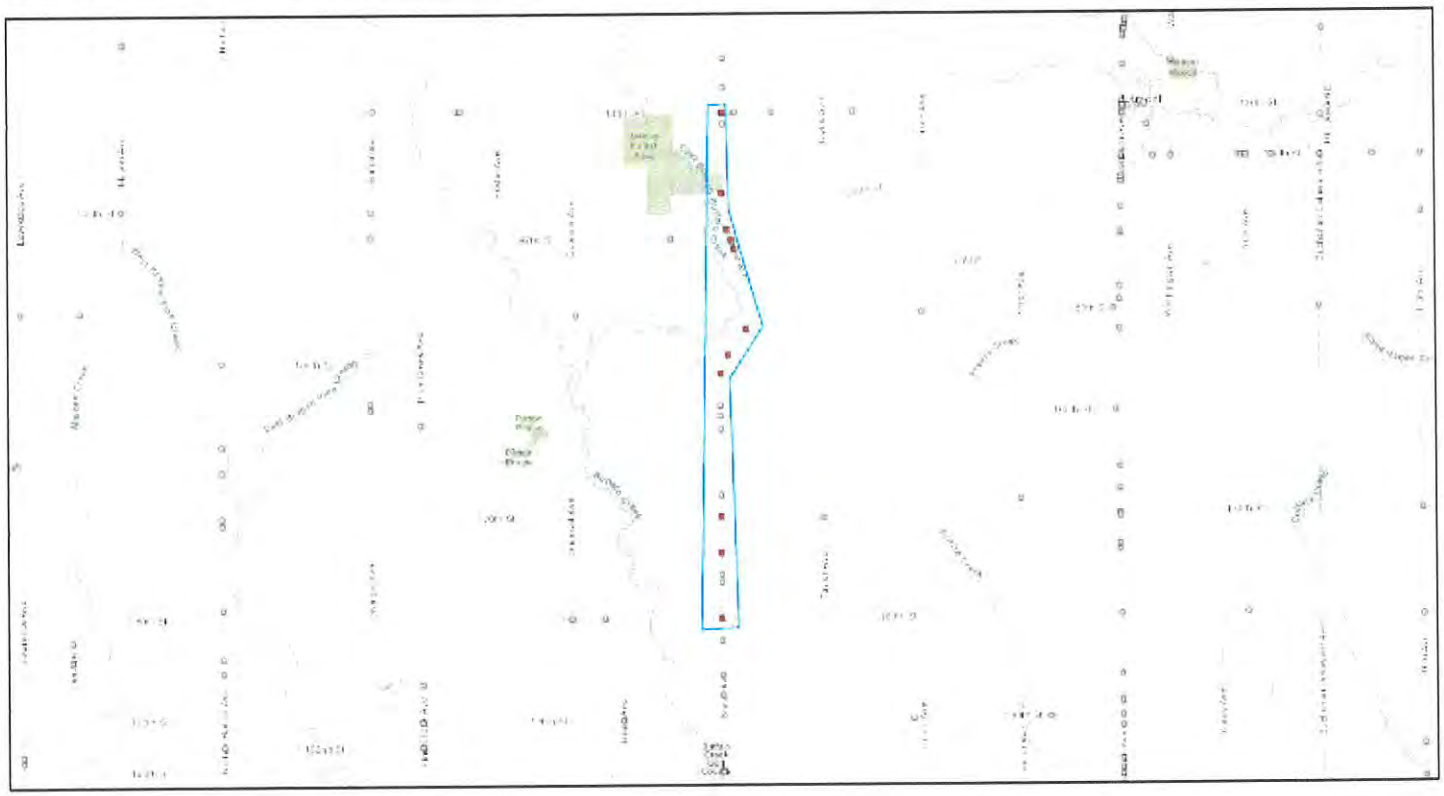
Iowa Crash Analysis Tool
Quick Report
2019-2023

Crash Severity	14
Fatal Crash	0
Suspected Serious Injury Crash	1
Suspected Minor Injury Crash	1
Possible/Unknown Injury Crash	0
Property Damage Only	12

Injury Status Summary	8
Fatalities	0
Suspected serious/incapacitating	1
Suspected minor/non-incapacitating	2
Possible (complaint of pain/injury)	0
Uninjured	0
Unknown	0
Not Reported	5

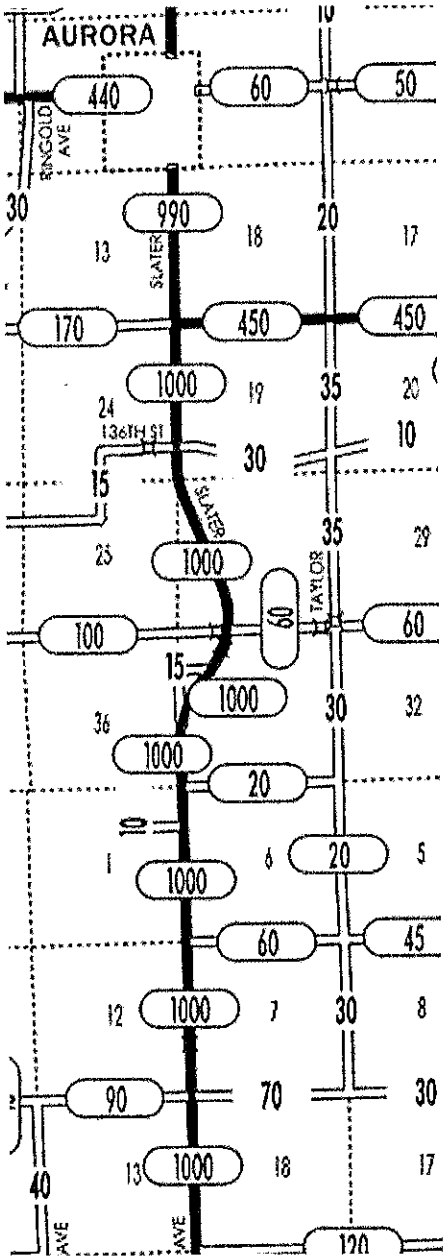
Property/Vehicles/Occupants	
Property Damage Total (dollars):	83,800.00
Average (per crash dollars):	5,985.71
Total Vehicles:	19.00
Average (per crash):	1.36
Total Occupants:	23.00
Average (per crash):	1.64

Average Severity	
Fatalities/Fatal Crash:	0.00
Fatalities/Crash:	0.00
Injuries/Crash:	0.21
Major Injuries/Crash:	0.07
Minor Injuries/Crash:	0.14
Possible/Unknown Injuries/Crash:	0.00



J.

2021 W-45 Traffic Counts



County:	Buchanan	Prepared By:	Brian Keierleber
Location:	W-45 from 130th St. to 180th St.	Date Prepared:	7/25/2024
Proposed Improvements:	Chevrons, paved shoulder, center rumbles, shoulder rumbles. 6" pavement markings safety edge		
Estimated Improvement Cost:	$ 572,614		
Inflation on Crash Costs:	4%	Annual Maintenance: (% of Improvement Cost)	2%
Discount Rate:	4%		
Estimated Service Life:	20	Annual Maintenance Cost:	$ 11,452
Method Choice:	CRF Method		

The Crash Reduction Factor (CRF) Method applies one to three CRFs to historical crashes to estimate reductions in future crashes. Crash Modification Factors (CMFs) can be converted to CRFs. For additional information, click the "Learn More" button.

Crash Reduction Factor (CRF) Method

Traffic Growth Factor:	1%
Number of CRFs:	3
Years of Crash History:	5

Combined CRF (Dominant Common Residuals Method)

Iowa DOT's preferred methodology for combining CRFs is Dominant Common Residuals, since it is more conservative than the other options.

	CRF 1:	CRF 2:	CRF 3:	Combined CRF
CRF Value (%)	15	6	15	**28.0**

Crash Severity	Rounded Societal Costs	Crash History (Total):	CRF (from above)	Crash History - Annual Avg	Crashes Saved Annually
Fatal (K)	$ 4,200,000	0	28.0	**0.00**	**0.00**
Serious Injury (A)	$ 4,200,000	1	28.0	**0.20**	**0.06**
Minor Injury (B)	$ 280,000	2	28.0	**0.40**	**0.11**
Possible/Unknown Injury (C)	$ 130,000	0	28.0	**0.00**	**0.00**
Property Damage Only (O)	$ 20,000	12	28.0	**2.40**	**0.67**

Crash Severity	Annual Societal Benefit
Fatal (K)	**$ -**
Serious Injury (A)	**$ 235,425**
Minor Injury (B)	**$ 31,390**
Possible/Unknown Injury (C)	**$ -**
Property Damage Only (O)	**$ 13,453**

Total Benefits and Costs

		Implementation Cost	$ 572,614
		Present Value of Maint.	$ 155,640
Present Value Benefits (Societal Benefits)	$ 4,139,755	Present Value Costs (Impl. and Maint. Costs)	$ 728,254
Present Value Net Return	$ 3,411,501		
Benefit Cost Ratio	**5.68**		

Form continues on next page

Rev. 07/23

Application for SITE-SPECIFIC TSIP FUNDS

GENERAL INFORMATION **DATE:** 8/2/24

Location / Title of Project: 2024/25 & 2025/26 Traffic System Capacity Improvements (13th & Grand Avenue)

Applicant: City of Ames

Contact Person: Damion Pregitzer Title: Traffic Engineer

Complete Mailing Address: 515 Clark Avenue
Ames, IA 50010

Phone: 515-239-5275 (Area Code) E-Mail: Damion.pregitzer@cityofames.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) _____

Contact Person _____ Title _____

Complete Mailing Address _____

Phone _____ (Area Code) E-Mail _____

PLEASE COMPLETE THE FOLLOWING PROJECT INFORMATION:

Funding Amount

Total Safety Cost	$	525,198.00
Total Project Cost	$	2,785,000.00
Safety Funds Requested	**$**	**500,000.00**

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
2017075002	US 69 & 13th St Intersection	☐	☒	0.30	
		☐	☐		

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 Ames

Signed: _____ 8/2/2024
Signature Date Signed

Damion Pregitzer, P.E.
Printed Name

Attest: _____ 8/2/24
Signature Date Signed

Mark Gansen, P.E.
Printed Name

The City of Ames has planned a comprehensive safety improvement project in FY 2025/26 at the intersection of 13th Street and US Highway 69 (Grand Avenue), aiming to enhance the corridor's multimodal safety and operational efficiency. This intersection is a critical part of the city's transportation network, experiencing high vehicular, pedestrian, and bicycle traffic. The Ames Area MPO coordinated a corridor study with staff from the City of Ames and Iowa DOT. The study listed several intersection improvements; 13th Street and Grand Avenue intersection was one of them.

The intersection experiences a high annual rate of crashes, particularly rear-end collisions and minor injuries. From 2021 to 2023, there were 41 total crashes at this intersection, including 3 suspected minor injury crashes, 7 possible/unknown injury crashes, and 31 property damage-only crashes. Common causes of these accidents include following too closely, driving too fast for conditions, improper or erratic lane changing, and running traffic signals.

The proposed project will add protected left-turn lanes, implement flashing yellow arrows, and improve visibility through enhanced multimodal pavement markings. Protected left-turn lanes (intersection geometry) are expected to reduce all crash types by up to 35% (US-41). The implementation of flashing yellow arrows has a crash reduction factor of 10% (SI-20). Finally, protecting left-turn phasing should reduce crash potential by 25% (SI-41). This results in a combined 41.5% potential reduction in crashes. Enhanced pavement markings will improve lane delineation and guide drivers more effectively through the intersection, including specialized markings to enhance safety for non-motorized users. Implementation of Leading Pedestrian Interval (LPI) will also help to improve the visibility for non-motorized users. The integration of CyRide, the city’s transit provider, will also be critical to the project’s success.

Safety data supports the need for these improvements. The intersection's Potential for Crash Reduction (PCR) data indicates a medium PCR level for all crashes (KABCO) with a 0.30 crash/year value. This intersection ranks 350 out of 1,559 in the undivided low-speed traffic signal control category and 2,533 out of 115,309 statewide. These rankings highlight the intersection's safety issues and the need for the proposed improvements.

A benefit-cost analysis has demonstrated the project's economic feasibility, with significant societal cost savings from reduced crash frequency and severity justifying the investment. The total project is estimated to cost $2,785,000. The portions of the project that are dedicated safety improvements is estimated to cost $525,198.

Attachment C

Grand Avenue & 13th Street

Planning-Level Cost Estimate

ESTIMATED ROADWAY QUANTITIES (1 DIVISION PROJECT)

This Data Entry Sheet fills Tab 100-0A effective 10-28-97

Item No.	Item Code	Item	Unit	Total	As Built Qty.	Unit Price	Total Price
1	2102-2710070	EXCAVATION, CLASS 10, ROADWAY AND BORROW	CY	15560		$12.00	$186,720.00
2	2115-0100000	MODIFIED SUBBASE, 12" DEPTH	CY	3105		$41.00	$127,305.00
3	2213-6745500	REMOVAL OF CURB	STA	19		$830.00	$15,770.00
4	2301-1033100	STANDARD OR SLIP FORM PORTLAND CEMENT CONCRETE PAVEMENT, CLASS C, CLASS 3 DURABILITY, 10 IN	SY	7780		$75.00	$583,500.00
5	2435-0250100	INTAKE, SW-501	EA	12		$3,550.00	$42,600.00
6	2503-0112030	STORM SEWER GRAVITY MAIN, TRENCHED, REINFORCED CONCRETE PIPE (RCP)	LF	300		$140.00	$42,000.00
7	2503-0200036	REMOVE STORM SEWER PIPE LESS THAN OR EQUAL TO 36 IN.	LF	300		$28.00	$8,400.00
8	2510-6745850	REMOVAL OF PAVEMENT	SY	4970		$10.00	$49,700.00
9	2511-6745900	REMOVAL OF SIDEWALK	SY	1055		$15.00	$15,825.00
10	2511-7526006	SIDEWALK, P.C. CONCRETE, 6 IN.	SY	1885		$72.00	$135,720.00
11	2526-8285000	CONSTRUCTION SURVEY	LS	1		$20,000.00	$20,000.00
12		TRAFFIC SIGNALIZATION MAJOR	LS	1		$350,000.00	$350,000.00
13	2528-8445110	TRAFFIC CONTROL 5%	LS	1		$78,877.00	$78,877.00
14	2533-4980005	MOBILIZATION 10%	LS	1		$157,754.00	$157,754.00
15		ROW ACQUISITION	AC	0.26		$40,000.00	$10,400.00
16		ACQUISTION AND RELOCATION OF 1303 GRAND AVE	EA	1		$245,000.00	$245,000.00
17		ACQUISTION AND RELOCATION OF 1302 HARDING AVE	EA	1		$242,000.00	$242,000.00
						Subtotal:	$2,311,571.00
						Contingency (30%):	$473,262.00
						Total:	$2,784,833.00

*NOTE: PAVEMENT QUANTITY IS ASSUMING FULL RECONSTRUCTION OF THE 13TH STREET LEGS, AND ONLY WIDENING ON THE GRAND AVENUE LEGS.

*NOTE: CONTINGENCY IS ONLY FOR ITEMS 1-12.

*NOTE: VALUE OF ITEM 16 WAS ESTABLISHED BY USING A FACTOR OF 2.5 OF THE COUNTY ASSESSED VALUE.

*NOTE: VALUE OF ITEM 17 WAS ESTABLISHED BY USING A FACTOR OF 2.0 OF THE COUNTY ASSESSED VALUE.

	2024/25	2025/26
Cost:		
Engineering	250,000	233,000
Land/ROW	500,000	
Construction		2,837,000
Total	**750,000**	**3,070,000**
Financing:		
G.O. Bonds		1,520,000
Road Use Tax	750,000	850,000
State Grants (Assumed TSIP & USTEP)		700,000
Total	**750,000**	**3,070,000**

Safety Costs are estimated at 40% of the highlighted items. 40% represents the ratio of the widening units to the total area of construction shown in attachments.

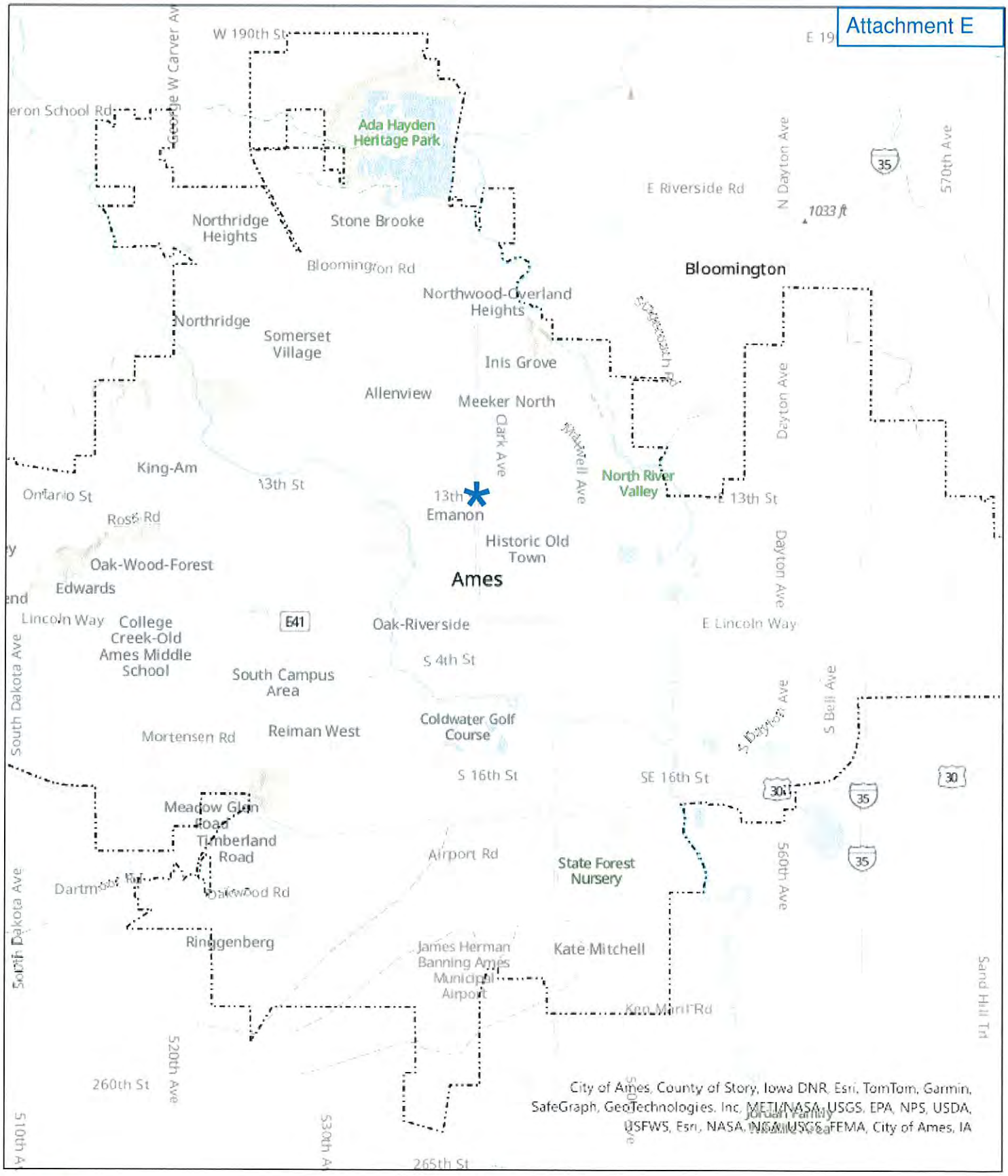
Total Safety Cost without contingency = $525,198

Attachment D

Time Schedule

Date	Activity
August 2024	Submit TSIP Grant Application
Fall 2024	Prepare Plans and Specifications
December 2024	Grant Approval from Commission
January 2025	Iowa DOT Plan Review
February 2025	Property Acquisitions
March 2025	Final Plan Revisions
July 2025	Bid Letting
August 2025	Award Project
Fall 2025	Minor Utility Relocation
Fall 2025-Spring 2026	Construct New Traffic Signal
April 2026	Begin Main Construction
October-November 2026	Project Completion

Attachment E



ArcGIS Web Map

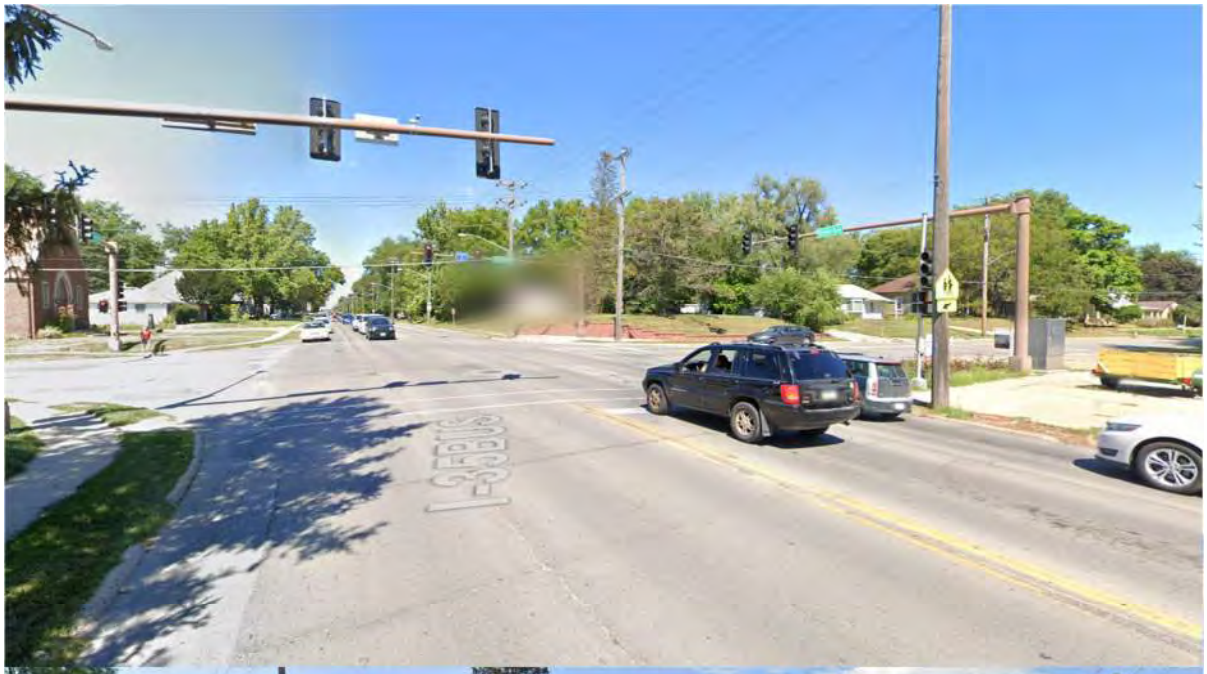
Project Location *

ames
Geographic Information Systems

© City of Ames, Iowa makes no warranties, expressed or implied, including without limitation, any warranties of merchantability or fitness for a particular purpose. In no event shall the City of Ames be liable for lost profits or any consequential or incidental damages caused by the use of this map.

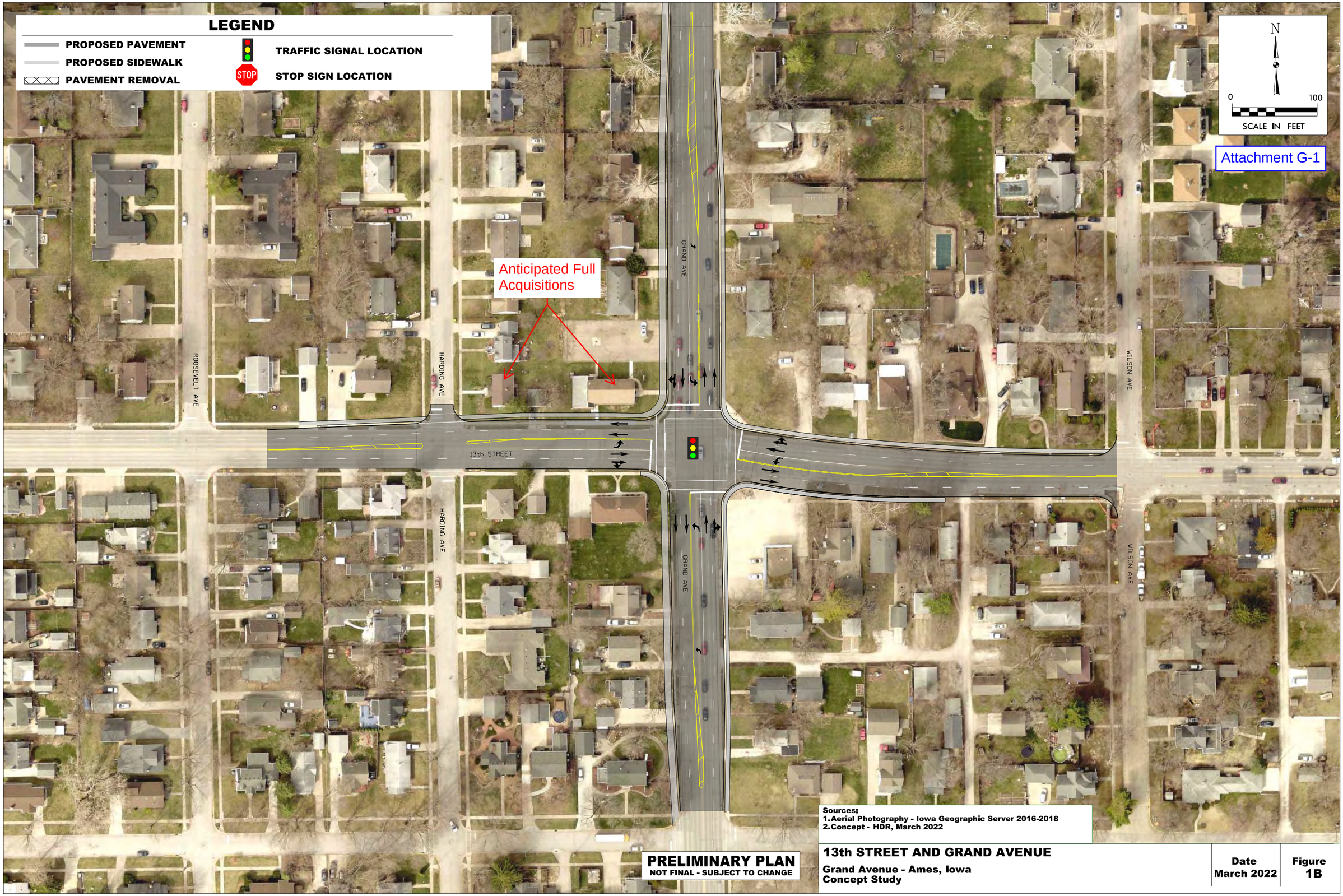
1:72,224

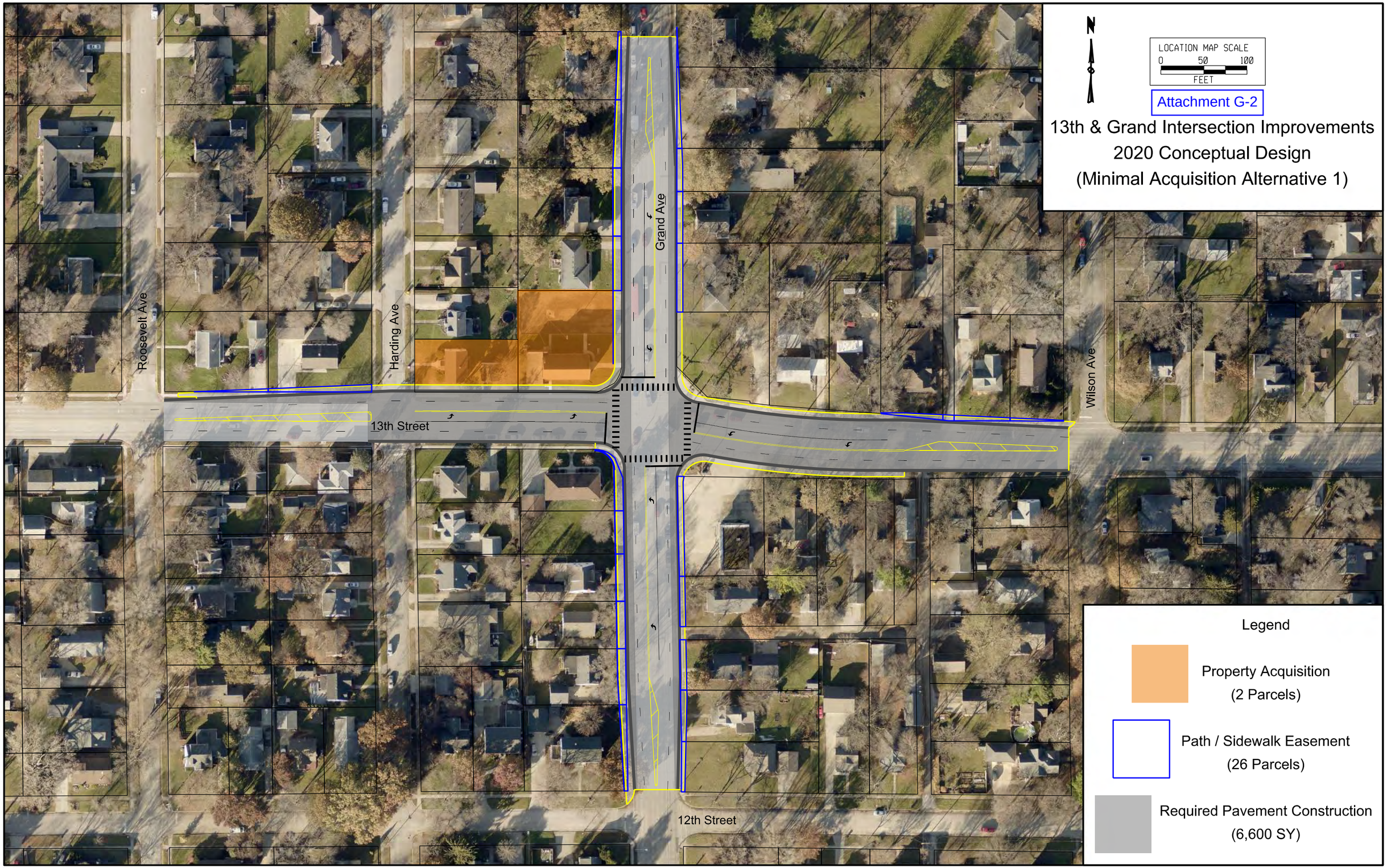
NORTH


L-3-BUS

L-3-BUS

L-3-BUS


LEGEND
PROPOSED PAVEMENT
PROPOSED SIDEWALK
PAVEMENT REMOVAL
TRAFFIC SIGNAL LOCATION
STOP
STOP SIGN LOCATION
N
0
100
SCALE IN FEET
Attachment G-1
Anticipated Full Acquisitions
ROOSEVELT AVE
HARDING AVE
GRAND AVE
13th STREET
WILSON AVE
Sources:
1.Aerial Photography - Iowa Geographic Server 2016-2018
2.Concept - HDR, March 2022
PRELIMINARY PLAN
NOT FINAL - SUBJECT TO CHANGE
13th STREET AND GRAND AVENUE
Grand Avenue - Ames, Iowa
Concept Study
Date
March 2022
Figure
1B


N
LOCATION MAP SCALE
0 50 100
FEET
Attachment G-2
13th & Grand Intersection Improvements
2020 Conceptual Design
(Minimal Acquisition Alternative 1)
Roosevelt Ave
Harding Ave
Grand Ave
Wilson Ave
13th Street
12th Street
Legend
Property Acquisition
(2 Parcels)
Path / Sidewalk Easement
(26 Parcels)
Required Pavement Construction
(6,600 SY)

Attachment I

Iowa Crash Analysis Tool
Quick Report
2021-2023

Crash Severity	41
Fatal Crash	0
Suspected Serious Injury Crash	0
Suspected Minor Injury Crash	3
Possible/Unknown Injury Crash	7
Property Damage Only	31

Injury Status Summary	14
Fatalities	0
Suspected serious/incapacitating	0
Suspected minor/non-incapacitating	3
Possible (complaint of pain/injury)	6
Uninjured	0
Unknown	3
Not Reported	2

Property/Vehicles/Occupants	
Property Damage Total (dollars):	287,181.00
Average (per crash dollars):	7,004.41
Total Vehicles:	93.00
Average (per crash):	2.27
Total Occupants:	136.00
Average (per crash):	3.32

Average Severity	
Fatalities/Fatal Crash:	0.00
Fatalities/Crash:	0.00
Injuries/Crash:	0.22
Major Injuries/Crash:	0.00
Minor Injuries/Crash:	0.07
Possible/Unknown Injuries/Crash:	0.15

Attachment I

Major Cause			41
Animal	0	Ran traffic signal	2
Ran stop sign	0	Failed to yield to emergency vehicle	0
FTYROW: At uncontrolled intersection	0	FTYROW: Making right turn on red signal	0
FTYROW: From stop sign	0	FTYROW: From yield sign	0
FTYROW: Making left turn	1	FTYROW: From driveway	0
FTYROW: From parked position	0	FTYROW: To pedestrian	0
FTYROW: Other	1	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	5
Exceeded authorized speed	0	Improper or erratic lane changing	3
Operating vehicle in an reckless/erratic/care...	1	Followed too close	17
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	1
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...	1
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...	1
Driver Distraction: Exterior distraction	1	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	1
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	2
Unknown	2	Not reported	0
Other: No improper action	2		

Attachment I

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	1	0	0	0	0	1
Monday	0	0	0	1	0	0	0	4	2	0	0	0	0	7
Tuesday	0	0	0	0	1	1	0	0	2	0	0	0	0	4
Wednesday	0	0	0	0	1	2	0	2	1	2	0	0	0	8
Thursday	0	0	0	0	0	0	1	2	1	2	0	0	0	6
Friday	0	0	0	0	0	2	1	3	4	1	0	0	0	11
Saturday	0	0	0	0	0	0	1	1	1	0	1	0	0	4
Total	0	0	0	1	2	5	3	12	12	5	1	0	0	41

Manner of Crash Collision	**41**
Non-collision (single vehicle)	0
Head-on (front to front)	0
Rear-end (front to rear)	27
Angle (oncoming left turn)	2
Broadside (front to side)	2
Sideswipe (same direction)	9
Sideswipe (opposite direction)	0
Rear to rear	0
Rear to side	0
Not reported	0
Other	1
Unknown	0

Surface Conditions	**41**
Dry	36
Wet	4
Ice/frost	0
Snow	1
Slush	0
Mud/dirt	0
Water (standing or moving)	0
Sand	0
Oil	0
Gravel	0
Not reported	0
Other	0
Unknown	0

Fixed Object Struck			**93**
Bridge overhead structure	0	Bridge pier or support	0
Bridge/bridge rail parapet	0	Curb/island/raised median	0
Ditch	0	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)	93

Attachment I

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	1	1	0	0	2
= 17	1	1	0	0	2
= 18	4	1	0	0	5
= 19	3	0	0	0	3
= 20	4	1	0	0	5
>= 21 and <= 24	7	5	0	0	12
>= 25 and <= 29	5	7	0	0	12
>= 30 and <= 34	5	4	0	0	9
>= 35 and <= 39	6	3	0	0	9
>= 40 and <= 44	1	5	0	0	6
>= 45 and <= 49	4	1	0	0	5
>= 50 and <= 54	2	2	0	0	4
>= 55 and <= 59	2	2	0	0	4
>= 60 and <= 64	0	1	0	0	1
>= 65 and <= 69	2	3	0	0	5
>= 70 and <= 74	0	1	0	0	1
>= 75 and <= 79	0	1	0	0	1
>= 80 and <= 84	0	3	0	0	3
>= 85 and <= 89	1	1	0	0	2
>= 90 and <= 94	0	0	0	0	0
>= 95	0	0	0	0	0
Not reported	0	0	0	0	0
Unknown	0	0	2	0	2
Total	48	43	2	0	93

Drug/Alcohol Related	41
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	41

Alcohol Test Given	93
None	90
Blood	1
Urine	0
Breath	0
Vitreous	0
Refused	0
Not reported	2

Drug Test Given	93
None	91
Blood	0
Urine	0
Breath	0
Vitreous	0
Refused	0
Not reported	2

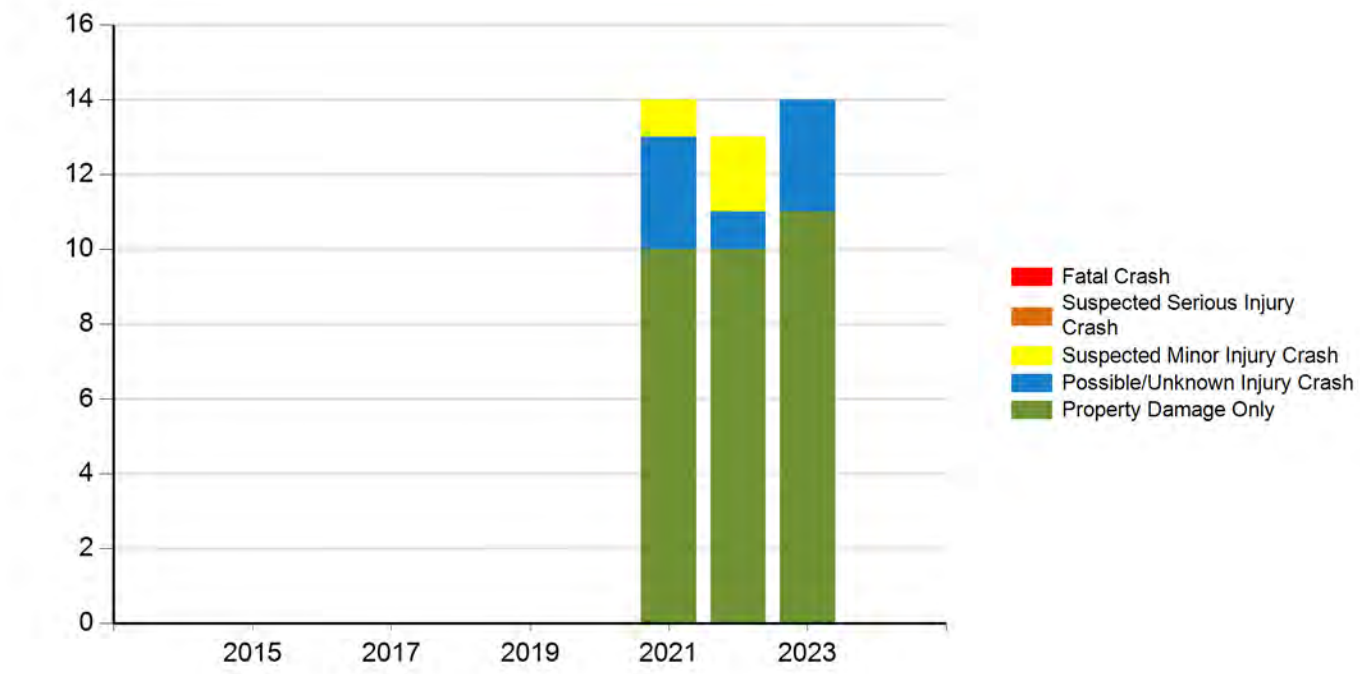
Drug Test Result	93
Negative	0
Cannabis	0
Central Nervous System depressants	0
Central Nervous System stimulants	0
Hallucinogens	0
Inhalants	0
Narcotic Analgesics	0
Dissociative Anesthetic (PCP)	0
Prescription Drug	0
Not reported	93
Other	0

Attachment I

Crash Severity - Annual

Crash Year	Fatal Crash	Suspected Serious Injury Crash	Suspected Minor Injury Crash	Possible/Unknown Injury Crash	Property Damage Only	**Total**
2014	0	0	0	0	0	0
2015	0	0	0	0	0	0
2016	0	0	0	0	0	0
2017	0	0	0	0	0	0
2018	0	0	0	0	0	0
2019	0	0	0	0	0	0
2020	0	0	0	0	0	0
2021	0	0	1	3	10	14
2022	0	0	2	1	10	13
2023	0	0	0	3	11	14
2024	0	0	0	0	0	0
Total	0	0	3	7	31	41

Severity/Year

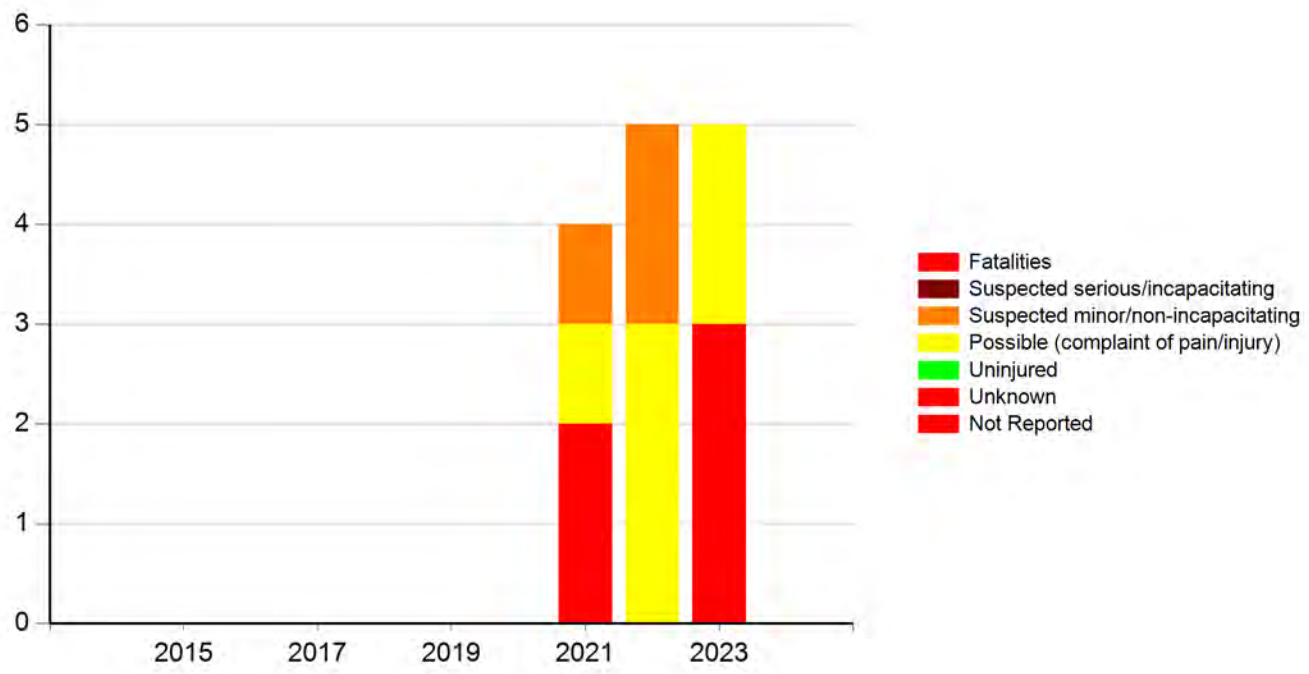


Attachment I

Injury Status - Annual

Crash Year	Fatalities	Suspected serious/incapacitating	Suspected minor/non-incapacitating	Possible (complaint of pain/injury)	Uninjured	Unknown	Not Reported	**Total**
2014	0	0	0	0	0	0	0	0
2015	0	0	0	0	0	0	0	0
2016	0	0	0	0	0	0	0	0
2017	0	0	0	0	0	0	0	0
2018	0	0	0	0	0	0	0	0
2019	0	0	0	0	0	0	0	0
2020	0	0	0	0	0	0	0	0
2021	0	0	1	1	0	2	0	4
2022	0	0	2	3	0	0	0	5
2023	0	0	0	2	0	1	2	5
2024	0	0	0	0	0	0	0	0
Total	0	0	3	6	0	3	2	14

Injury Status/Year



Meeting the following criteria

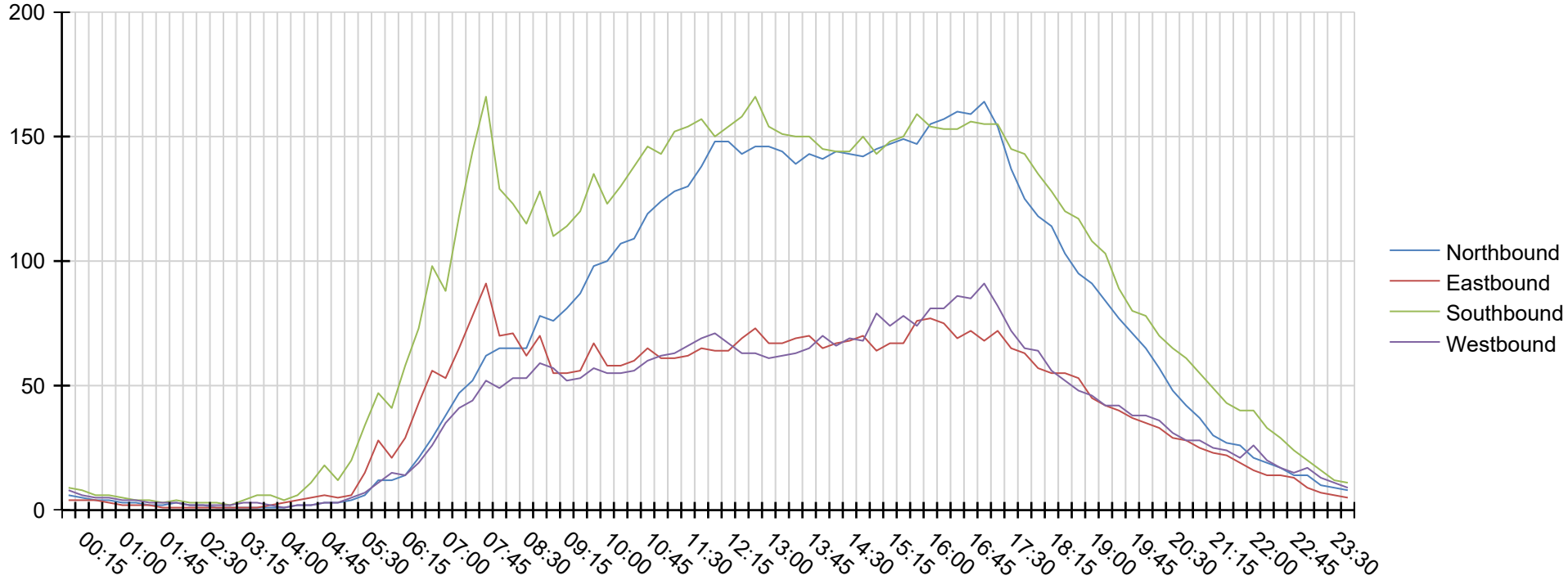
Jurisdiction: Cities (Ames)
Year: 2021, 2022, 2023
Map Selection: Yes
Filter: None

Attachment J

GRIDSMART® Turning Movement Counts - Average

Intersection 13th St & Grand Ave
Date 1/1/2023-12/25/2023

	Right	Through	Left	UTurn	Total
Northbound	410	5178	969	0	6557
Eastbound	999	2442	339	0	3780
Southbound	575	6278	1344	0	8197
Westbound	1112	2199	330	0	3641
Total	**3096**	**16097**	**2982**	**0**	**22175**



Attachment J

GRIDSMART® Turning Movement Counts - Average

Intersection 13th St & Grand Ave
Date 1/1/2023-12/25/2023

	Northbound				Eastbound				Southbound				Westbound			
	R	T	L	U	R	T	L	U	R	T	L	U	R	T	L	U
00:00	0	5	1	0	1	3	0	0	1	7	1	0	2	5	0	0
00:15	0	4	0	0	0	2	0	0	0	6	1	0	1	4	0	0
00:30	0	3	0	0	0	2	0	0	0	5	1	0	1	3	0	0
00:45	0	3	0	0	0	2	0	0	0	4	0	0	1	3	0	0
01:00	0	3	0	0	0	1	0	0	0	3	0	0	1	3	0	0
01:15	0	2	0	0	0	1	0	0	0	3	0	0	0	2	0	0
01:30	0	2	0	0	0	1	0	0	0	3	0	0	0	2	0	0
01:45	0	2	0	0	0	1	0	0	0	2	0	0	1	2	0	0
02:00	0	2	0	0	0	1	0	0	0	2	0	0	0	2	0	0
02:15	0	1	0	0	0	1	0	0	0	2	0	0	0	1	0	0
02:30	0	1	0	0	0	1	0	0	0	2	0	0	1	1	0	0
02:45	0	1	0	0	0	1	0	0	0	2	1	0	0	1	0	0
03:00	0	1	0	0	0	1	0	0	0	1	0	0	0	1	0	0
03:15	0	1	0	0	0	1	0	0	0	2	0	0	0	2	0	0
03:30	0	1	0	0	0	1	0	0	1	4	1	0	0	2	0	0
03:45	0	1	0	0	0	2	0	0	1	2	1	0	0	1	0	0
04:00	0	1	0	0	0	2	0	0	0	2	1	0	0	1	0	0
04:15	0	1	0	0	0	3	0	0	0	3	2	0	0	1	0	0
04:30	0	2	0	0	0	4	0	0	0	7	3	0	0	1	0	0
04:45	0	2	0	0	1	4	0	0	1	11	5	0	0	1	0	0
05:00	0	2	0	0	1	3	0	0	0	7	4	0	1	1	0	0
05:15	0	3	0	0	1	5	0	0	2	11	6	0	2	2	0	0
05:30	0	5	0	0	2	12	0	0	4	18	11	0	2	4	0	0
05:45	1	10	0	0	5	22	1	0	3	29	15	0	4	5	1	0
06:00	0	11	0	0	3	16	1	0	2	25	13	0	4	9	1	0
06:15	1	11	1	0	4	23	1	0	2	34	20	0	3	9	2	0

Attachment J

GRIDSMART® Turning Movement Counts - Average

Intersection 13th St & Grand Ave
Date 1/1/2023-12/25/2023

	Northbound				Eastbound				Southbound				Westbound			
	R	T	L	U	R	T	L	U	R	T	L	U	R	T	L	U
06:30	3	15	2	0	6	34	1	0	4	44	24	0	5	10	3	0
06:45	5	21	3	0	9	44	2	0	5	59	34	0	6	15	4	0
07:00	4	28	5	0	9	39	3	0	6	53	27	0	8	22	4	0
07:15	5	35	6	0	11	47	6	0	10	74	34	0	9	28	3	0
07:30	7	37	7	0	13	58	5	0	11	95	38	0	10	30	4	0
07:45	8	44	9	0	19	67	4	0	10	116	38	0	11	36	4	0
08:00	6	45	12	0	16	49	4	0	8	92	27	0	11	32	5	0
08:15	7	46	11	0	16	50	4	0	9	86	27	0	13	33	5	0
08:30	7	48	10	0	15	42	4	0	8	84	23	0	13	32	7	0
08:45	8	57	12	0	18	46	5	0	8	96	23	0	16	35	7	0
09:00	7	57	11	0	14	36	4	0	6	82	21	0	16	33	7	0
09:15	7	61	12	0	14	36	4	0	7	85	22	0	15	30	5	0
09:30	7	66	12	0	15	36	4	0	7	91	21	0	16	30	6	0
09:45	8	76	13	0	19	41	6	0	7	104	23	0	18	31	7	0
10:00	7	78	14	0	16	37	5	0	7	94	22	0	18	30	7	0
10:15	8	84	15	0	15	37	5	0	7	99	23	0	18	29	7	0
10:30	8	85	15	0	16	37	5	0	8	107	22	0	18	31	6	0
10:45	8	94	15	0	19	40	6	0	8	113	23	0	19	32	7	0
11:00	8	98	17	0	17	37	6	0	8	112	22	0	20	34	7	0
11:15	8	101	18	0	18	36	6	0	9	120	22	0	20	34	8	0
11:30	8	103	18	0	19	36	6	0	9	122	22	0	22	35	8	0
11:45	8	110	19	0	20	38	7	0	9	124	22	0	22	38	8	0
12:00	9	118	21	0	19	38	7	0	9	119	21	0	23	39	7	0
12:15	9	118	20	0	18	39	7	0	10	120	23	0	22	37	7	0
12:30	9	113	20	0	19	42	7	0	10	123	24	0	21	35	6	0
12:45	10	115	20	0	21	44	7	0	11	129	26	0	19	37	6	0

Attachment J

GRIDSMART® Turning Movement Counts - Average

Intersection 13th St & Grand Ave
Date 1/1/2023-12/25/2023

	Northbound				Eastbound				Southbound				Westbound			
	R	T	L	U	R	T	L	U	R	T	L	U	R	T	L	U
13:00	10	114	21	0	19	41	7	0	10	120	23	0	19	35	6	0
13:15	10	113	20	0	18	41	7	0	10	117	24	0	19	36	6	0
13:30	9	109	19	0	19	42	7	0	10	116	24	0	20	36	6	0
13:45	9	114	19	0	20	43	7	0	10	117	23	0	21	37	6	0
14:00	9	112	19	0	17	40	7	0	9	113	22	0	23	40	6	0
14:15	9	114	20	0	18	40	7	0	9	112	22	0	21	37	6	0
14:30	9	114	19	0	18	43	7	0	9	110	24	0	25	37	5	0
14:45	9	113	19	0	19	44	7	0	11	114	23	0	23	39	6	0
15:00	9	116	20	0	17	39	7	0	10	111	21	0	26	46	6	0
15:15	8	116	22	0	18	41	7	0	11	115	21	0	24	43	6	0
15:30	8	117	22	0	19	40	6	0	11	118	21	0	26	45	6	0
15:45	8	117	21	0	23	45	7	0	11	124	22	0	25	43	6	0
16:00	8	122	23	0	20	49	7	0	12	120	21	0	26	49	5	0
16:15	8	125	23	0	19	47	8	0	11	121	20	0	26	49	5	0
16:30	8	128	23	0	20	42	7	0	11	121	21	0	28	52	6	0
16:45	8	127	23	0	20	43	7	0	11	124	19	0	26	52	5	0
17:00	8	130	26	0	18	42	6	0	12	122	20	0	28	57	5	0
17:15	8	121	24	0	20	44	7	0	12	123	19	0	25	52	4	0
17:30	7	107	22	0	19	38	7	0	11	116	17	0	22	45	5	0
17:45	7	97	20	0	19	36	7	0	11	115	17	0	20	40	5	0
18:00	6	91	20	0	18	31	7	0	11	109	15	0	18	39	5	0
18:15	5	89	19	0	17	30	6	0	10	102	15	0	17	33	5	0
18:30	5	80	17	0	17	30	6	0	9	96	15	0	16	31	4	0
18:45	5	73	16	0	16	31	6	0	9	92	15	0	14	28	5	0
19:00	4	70	16	0	14	24	5	0	9	86	12	0	14	27	4	0
19:15	4	64	15	0	13	23	5	0	9	81	11	0	13	25	4	0

Attachment J

GRIDSMART® Turning Movement Counts - Average

Intersection 13th St & Grand Ave
Date 1/1/2023-12/25/2023

	Northbound				Eastbound				Southbound				Westbound			
	R	T	L	U	R	T	L	U	R	T	L	U	R	T	L	U
19:30	3	59	14	0	12	22	5	0	8	70	10	0	13	24	3	0
19:45	3	54	13	0	11	21	4	0	7	63	9	0	11	23	3	0
20:00	2	50	12	0	10	20	4	0	7	60	9	0	10	23	4	0
20:15	2	44	10	0	9	19	3	0	7	54	8	0	10	22	3	0
20:30	2	37	8	0	8	17	3	0	6	51	7	0	8	19	2	0
20:45	2	32	7	0	8	17	2	0	6	47	7	0	7	18	2	0
21:00	1	28	7	0	7	16	2	0	6	42	7	0	7	17	2	0
21:15	1	23	5	0	6	14	2	0	5	37	6	0	6	16	2	0
21:30	1	20	4	0	5	14	2	0	4	32	6	0	6	15	2	0
21:45	1	20	4	0	4	13	1	0	4	30	5	0	5	13	1	0
22:00	1	16	4	0	3	11	1	0	4	31	5	0	6	17	3	0
22:15	1	14	3	0	3	10	1	0	4	24	4	0	5	13	2	0
22:30	1	13	3	0	3	10	1	0	3	21	4	0	4	10	1	0
22:45	0	10	2	0	2	9	1	0	2	17	3	0	4	9	1	0
23:00	0	11	2	0	1	6	0	0	2	15	2	0	4	11	1	0
23:15	0	8	2	0	1	5	0	0	1	12	2	0	3	8	1	0
23:30	0	6	1	0	1	4	0	0	1	9	2	0	3	6	0	0
23:45	0	6	1	0	1	3	0	0	1	8	1	0	2	5	0	0
Total	**410**	**5178**	**969**	**0**	**999**	**2442**	**339**	**0**	**575**	**6278**	**1344**	**0**	**1112**	**2199**	**330**	**0**

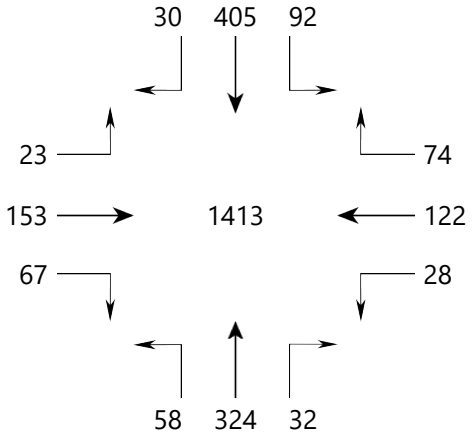
Attachment J

GRIDSMART® Turning Movement Counts - Average

Intersection 13th St & Grand Ave
Date 1/1/2023-12/25/2023

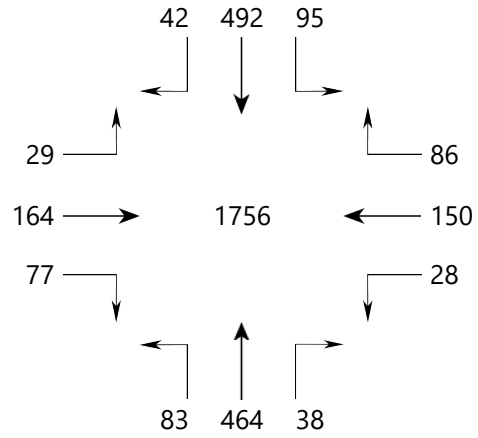
AM PEAK HOUR VOLUME (0:00-10:45)

FROM 09:45 TO 10:45



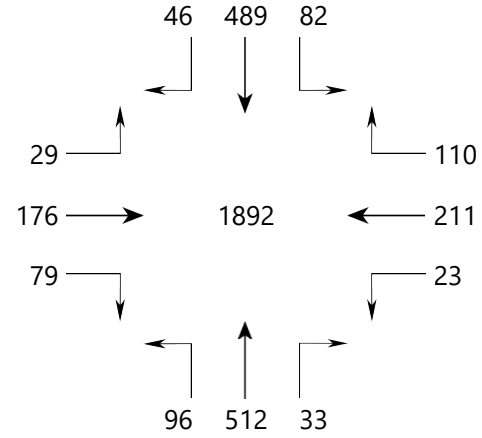
MID-DAY PEAK HOUR VOLUME (11:00-14:00)

FROM 12:00 TO 13:00



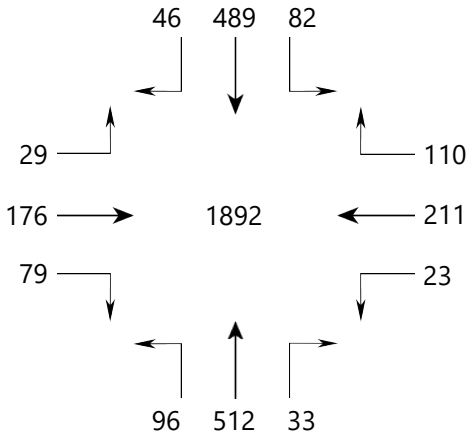
PM PEAK HOUR VOLUME (14:15-23:45)

FROM 16:15 TO 17:15



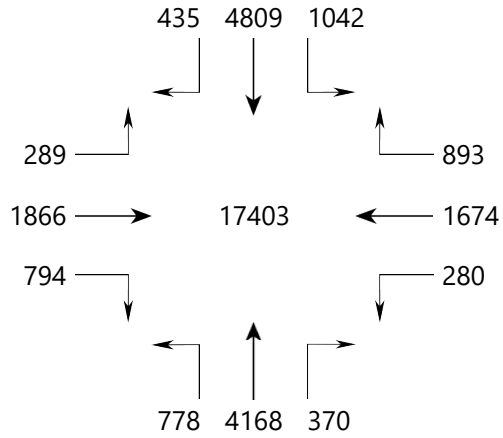
OVERALL PEAK HOUR VOLUME

FROM 16:15 TO 17:15



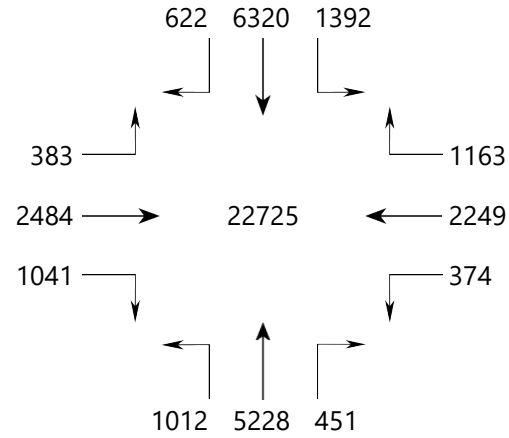
DAYTIME TOTAL VOLUME

FROM 07:00 TO 18:00



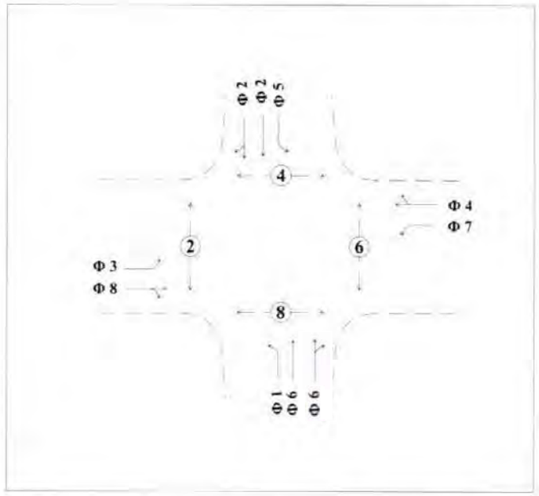
SELECTED TIME VOLUME

FROM 00:00 TO 23:59



Attachment K-1 (proposed signal)

RECOMMENDED PHASING



PHASE SEQUENCE / SIGNAL INDICATION	Φ 5, Φ 1			Φ 2, Φ 2, 2, 6, Φ 6, Φ 6			Φ 7, Φ 3			4, Φ 4, Φ 4, Φ 8, Φ 8, 8		
VEHICLE PHASE 1	G>	Y>	R>	FYA	Y>	R	R	R	R	R	R	R
VEHICLE PHASE 2	R	R	R	G	Y	R	R	R	R	R	R	R
VEHICLE PHASE 3	R	R	R	R	R	R	G>	Y>	R	FYA	Y>	R
VEHICLE PHASE 4	R	R	R	R	R	R	R	R	R	G	Y	R
VEHICLE PHASE 5	G>	Y>	R>	FYA	Y>	R	R	R	R	R	R	R
VEHICLE PHASE 6	R	R	R	G	Y	R	R	R	R	R	R	R
VEHICLE PHASE 7	R	R	R	R	R	R	G>	Y>	R>	FYA	Y>	R
VEHICLE PHASE 8	R	R	R	R	R	R	R	R	R	G	Y	R
OVERLAP A	R	R	R	FYA	R	R	R	R	R	FYA	R	R
OVERLAP B	R	R	R	FYA	R	R	R	R	R	FYA	R	R
OVERLAP C	R	R	R	FYA	R	R	R	R	R	FYA	R	R
OVERLAP D	R	R	R	FYA	R	R	R	R	R	FYA	R	R
PED PHASE 2				W/DW	DW	DW				DW	DW	DW
PED PHASE 4				DW	DW	DW				W/DW	DW	DW
PED PHASE 6				W/DW	DW	DW				DW	DW	DW
PED PHASE 8				DW	DW	DW				W/DW	DW	DW

RECOMMENDED CONTROLLER TIMINGS

	DIRECTION	EBLT	WB	NBLT	SB	WBLT	EB	SBLT	NB
VEHICLE AND PEDESTRIAN TIMING DATA	PHASE NO								
	MINIMUM GREEN								
	YELLOW								
	RED								
	WALK			COORDINATE WITH CITY FOR SIGANL TIMING					
	FLASH DON'T WALK								
	* VEHICLE EXTENSION								
	MAXIMUM GREEN-1								
	MAXIMUM GREEN-2								
	MAXIMUM GREEN-3								

* DILEMMA ZONE MANAGED BY RADAR DETECTION

RECOMMENDED PREEMTION TIMINGS

	TIMING DATA		OPERATIONAL DATA								
EMERGENCY VEHICLE PREEMPTION CHANNEL 1 (SB)	SELECT PED CLEAR		DURING TRACK TIME								
	SELECT YEL CHANGE		PHASE NO.	1	2	3	4	5	6	7	8
	SELECT RED CLEAR		VEHICLE STATUS	R	R	R	R	R	R	R	R
	TRACK GREEN		PEDESTRIAN STATUS	DW	DW	DW	DW	DW	DW	DW	DW
	TRACK PED CLEAR										
	TRACK YELLOW CHANGE		DURING DWELL TIME								
	TRACK RED CLEAR		PHASE NO.	1	2	3	4	5	6	7	8
	DWELL GREEN	15.0	VEHICLE STATUS	R	G	R	R	R	G	R	R
	RETURN PED CLEAR		PEDESTRIAN STATUS	DARK	DARK	DARK	DARK	DARK	DARK	DARK	DARK
	RETURN YEL CHANGE	4.0									
	RETURN RED CLEAR	2.0									

	TIMING DATA		OPERATIONAL DATA								
EMERGENCY VEHICLE PREEMPTION CHANNEL 2 (WB)	SELECT PED CLEAR		DURING TRACK TIME								
	SELECT YEL CHANGE		PHASE NO.	1	2	3	4	5	6	7	8
	SELECT RED CLEAR		VEHICLE STATUS	R	R	R	R	R	R	R	R
	TRACK GREEN		PEDESTRIAN STATUS	DW	DW	DW	DW	DW	DW	DW	DW
	TRACK PED CLEAR										
	TRACK YELLOW CHANGE		DURING DWELL TIME								
	TRACK RED CLEAR		PHASE NO.	1	2	3	4	5	6	7	8
	DWELL GREEN	15.0	VEHICLE STATUS	R	R	R	G	R	R	R	G
	RETURN PED CLEAR		PEDESTRIAN STATUS	DARK	DARK	DARK	DARK	DARK	DARK	DARK	DARK
	RETURN YEL CHANGE	4.0									
	RETURN RED CLEAR	2.0									

	TIMING DATA		OPERATIONAL DATA								
EMERGENCY VEHICLE PREEMPTION CHANNEL 3 (NB)	SELECT PED CLEAR		DURING TRACK TIME								
	SELECT YEL CHANGE		PHASE NO.	1	2	3	4	5	6	7	8
	SELECT RED CLEAR		VEHICLE STATUS	R	R	R	R	R	R	R	R
	TRACK GREEN		PEDESTRIAN STATUS	DW	DW	DW	DW	DW	DW	DW	DW
	TRACK PED CLEAR										
	TRACK YELLOW CHANGE		DURING DWELL TIME								
	TRACK RED CLEAR		PHASE NO.	1	2	3	4	5	6	7	8
	DWELL GREEN	15.0	VEHICLE STATUS	R	G	R	R	R	G	R	R
	RETURN PED CLEAR		PEDESTRIAN STATUS	DARK	DARK	DARK	DARK	DARK	DARK	DARK	DARK
	RETURN YEL CHANGE	4.0									
	RETURN RED CLEAR	2.0									

	TIMING DATA		OPERATIONAL DATA								
EMERGENCY VEHICLE PREEMPTION CHANNEL 4 (EB)	SELECT PED CLEAR		DURING TRACK TIME								
	SELECT YEL CHANGE		PHASE NO.	1	2	3	4	5	6	7	8
	SELECT RED CLEAR		VEHICLE STATUS	R	R	R	R	R	R	R	R
	TRACK GREEN		PEDESTRIAN STATUS	DW	DW	DW	DW	DW	DW	DW	DW
	TRACK PED CLEAR										
	TRACK YELLOW CHANGE		DURING DWELL TIME								
	TRACK RED CLEAR		PHASE NO.	1	2	3	4	5	6	7	8
	DWELL GREEN	15.0	VEHICLE STATUS	R	R	R	G	R	R	R	G
	RETURN PED CLEAR		PEDESTRIAN STATUS	DARK	DARK	DARK	DARK	DARK	DARK	DARK	DARK
	RETURN YEL CHANGE	4.0									
	RETURN RED CLEAR	2.0									

CITY PROJECT NO. 060-7551-439

DRAWN BY N. COLLINS
DESIGNED BY E. TOTT
CHECKED BY D. THOMAS

NO.	DATE	BY	REVISION DESCRIPTION

whks

ames

CITY OF AMES
PUBLIC WORKS DEPARTMENT
515 CLARK AVENUE
AMES, IOWA 50010
PHONE: (515) 239-5160

2021/22 TRAFFIC SIGNAL PROGRAM

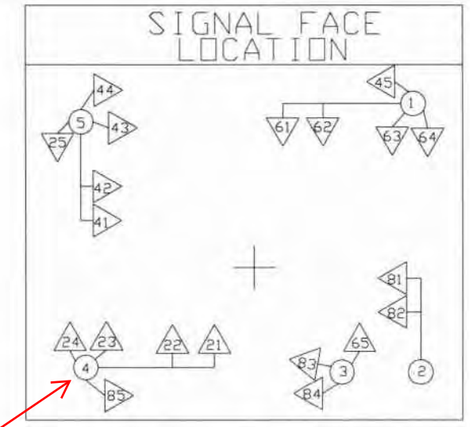
S 4TH STREET & UNIVERSITY BLVD

PHASING AND RECOMMENDED TIMING DATA

SHEET NO. F.1

Attachment K-2
(existing signal)

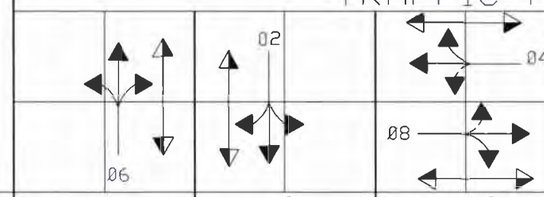
SIGNAL FACE LOCATION



Current detection is Gridsmart Camera in this corner.

NORTH

TRAFFIC PHASING AND COLOR SEQUENCE



APPROACH	FACE NO.	Ø 6 R/W	Ø 6 CLEAR TO Ø 2	Ø 6 CLEAR TO Ø 2	Ø 2 R/W	Ø 2 CLEAR TO Ø 4+8	Ø 2 CLEAR TO Ø 4+8	Ø 4+8 R/W	Ø 4+8 CLEAR TO Ø 6	Ø 4+8 CLEAR TO Ø 6
NORTHBOUND GRAND AVE	61	G,<G	G,<G	Y	R	R	R	R	R	R
	62,63	G	G	Y	R	R	R	R	R	R
	64,65	W	FDW	DW	DW	DW	DW	DW	DW	DW
SOUTHBOUND GRAND AVE	21	R	R	R	G,<G	G,<G	Y	R	R	R
	22,23	R	R	R	G	G	Y	R	R	R
	24,25	DW	DW	DW	W	FDW	DW	DW	DW	DW
EASTBOUND 13TH STREET	81,82	R	R	R	R	R	R	G	G	Y
	83	R	R	R	R	R	R	G	G	Y
	84,85	DW	DW	DW	DW	DW	DW	W	FDW	DW
WESTBOUND 13TH STREET	41,42	R	R	R	R	R	R	G	G	Y
	43	R	R	R	R	R	R	G	G	Y
	43,44	DW	DW	DW	DW	DW	DW	W	FDW	DW

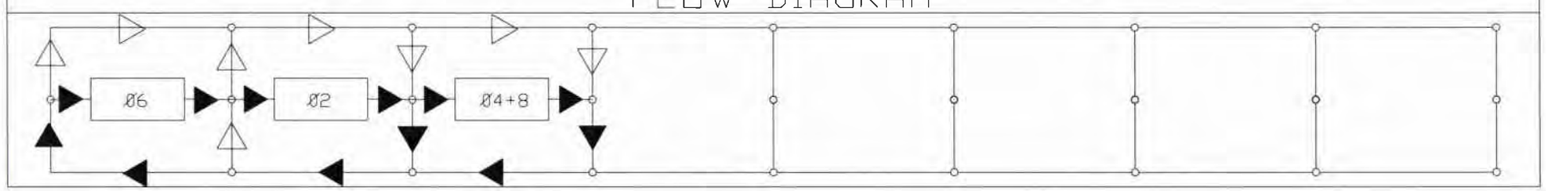
LEGEND

——▶	ACTUATED VEHICULAR MOVEMENT
——▷	NON-ACTUATED VEHICULAR MOVEMENT
- - ▶	PARTIALLY RESTRICTED VEHICULAR MOVEMENT
——▶	ACTUATED PEDESTRIAN MOVEMENT
- - ▷	NON-ACTUATED PEDESTRIAN MOVEMENT
R/W	RIGHT OF WAY INTERVAL
Ø	TRAFFIC PHASE
R	CIRCULAR RED
Y	CIRCULAR YELLOW
G	CIRCULAR GREEN
S	GREEN STRAIGHT AHEAD ARROW
<Y	YELLOW LEFT ARROW
<G	GREEN LEFT ARROW
Y>	YELLOW RIGHT ARROW
G>	GREEN RIGHT ARROW
W	WALK
DW	DON'T WALK
FDW	FLASHING DON'T WALK
AO	ALL OTHER PHASES
PR1	PREEMPT #1

INITIAL RECOMMENDED TIMING (SECONDS)

PHASE	1	2	3	4	5	6	7	8
MINIMUM GREEN		10		10		10		10
PASSAGE		3.0		3.0		3.0		3.0
MAXIMUM I		40		30		40		30
MAXIMUM II								
YELLOW CHANGE		4.0		4.0		4.0		4.0
RED CLEARANCE		1.6		1.6		1.6		1.6
WALK		7		7		7		7
PEDESTRIAN CLEARANCE		16		22		22		16
ADDED INITIAL								
TIME TO REDUCE								
TIME BEFORE REDUCTION								
MINIMUM GAP								

FLOW DIAGRAM



——▶ INDICATES FLOW PATH WITH ALL PHASES DEMANDED.

- - ▷ INDICATES OPTIONAL FLOW PATHS WHEN SOME PHASES ARE NOT DEMANDED AT THE SAME TIME OF RIGHT-OF-WAY TRANSFER.

THE RED CLEARANCE INTERVAL SHALL BE INCLUDED IN THE COLOR SEQUENCE WHEN CALLED FOR BY CONTROLLER TIMING.

FLASHING OPERATIONS	
GRAND AVENUE	RED
13TH STREET	RED
PEDESTRIAN	DARK

CONTROLLER AND CABINET HARDWARE	
PHASES USED	4
EXPANSIBLE TO:	8
MINIMUM NUMBER OF BACKPANEL POSITIONS	12

PHASE SEQUENCE NOT ALLOWED	
FROM	TO
DUAL ENTRY PHASES	
4+8	

Signal Phasing
Grand Avenue/13th Street
Traffic Signal Improvements
Ames, Iowa

Attachment L

County:	Story	Prepared By:	D.Pregitzer
Location:	US 69 (Grand Ave) & 13th Street	Date Prepared:	8/2/2024
Proposed Improvements:	Intersection turn lane, pavement marking, and traffic signal improvements.		
Estimated Improvement Cost:	$ 525,198	Number Calculated from Attachment C	
Inflation on Crash Costs:	4%	Annual Maintenance: (% of Improvement Cost)	2%
Discount Rate:	4%		
Estimated Service Life:	15	Annual Maintenance Cost:	$ 10,504
Method Choice:	Predictive Method	The Predictive Method uses the outputs from the Highway Safety Manual's Predicted or Expected crash tool. That tool accounts for changing risk due to increased traffic volumes, so a growth factor is not used in these calculations. For additional information, click the "Learn More" button.	

Predictive Method

Existing Condition (All Crashes):	41.00	Location Characteristics:	Urban
Alternative (All Crashes):	24.00		Intersections Only
Percent Change in Crashes	**41.46% reduction in crashes**		Iowa Crash Distribution 2017-2021

Crash Severity	Crash Distribution Based on Location Characteristics	Existing Condition Expected Crashes - Service Life	Alternative Expected Crashes - Service Life	Crashes Saved Over Service Life	Crashes Saved Annually
Fatal (K)	0.26%	0.11	0.06	**0.04**	**0.00**
Serious Injury (A)	1.42%	0.58	0.34	**0.24**	**0.02**
Minor Injury (B)	9.50%	3.90	2.28	**1.62**	**0.11**
Possible/Unknown Injury (C)	21.24%	8.71	5.10	**3.61**	**0.24**
Property Damage Only (O)	67.57%	27.70	16.22	**11.49**	**0.77**

Crash Severity	Rounded Societal Costs	Annual Societal Benefit
Fatal (K)	$ 4,200,000	**$ 12,510**
Serious Injury (A)	$ 4,200,000	**$ 67,642**
Minor Injury (B)	$ 280,000	**$ 30,152**
Possible/Unknown Injury (C)	$ 130,000	**$ 31,297**
Property Damage Only (O)	$ 20,000	**$ 15,316**

Total Benefits and Costs

		Implementation Cost	$ 525,198
		Present Value of Maint.	$ 116,787
Present Value Benefits (Societal Benefits)	$ 1,744,659	Present Value Costs (Impl. and Maint. Costs)	$ 641,985
Present Value Net Return	$ 1,102,674		
Benefit Cost Ratio	**2.72**		

Form continues on next page

County: Story
Location: US 69 (Grand Ave) & 13th Street
Prepared By: D.Pregitzer
Date Prepared: 8/2/2024

No Input Necessary - No Custom Values In Use

General Customizations

No change to Crash Costs

No change to Discount Rate

No change to Maintenance Costs

Method-Specific Customizations

Predictive Method in this tool
does not use or customize Crash
History or Traffic Growth Factor.

Rev. 07/23

Application for SITE-SPECIFIC TSIP FUNDS

GENERAL INFORMATION **DATE:** August 14, 2024

Location / Title of Project West 1st Street Widening & Improvements – Phase 2

Applicant City of Ankeny, Iowa

Contact Person Mark Mueller Title Director of Public Works

Complete Mailing Address 1210 NW Prairie Ridge Drive
Ankeny, IA 50023

Phone (515) 963-3522 (Area Code) E-Mail mmueller@ankenyiowa.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	$	919,900
Total Project Cost	$	9,464,000
Safety Funds Requested	**$**	**500,000**

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
2017066053	West 1st Street & NW/ SW Linden Street	☒	☐		0.33
		☐	☐		

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 Ankeny, Iowa

Signed: Mark Mueller 8/14/24

Signature Date Signed

Mark Mueller

Printed Name

Attest: 8/14/24

Signature Date Signed

Jim Haberichter

Printed Name

Docusign Envelope ID: 9638D010-39CE-4FB8-B106-AB3CAB63C3C2

A

RESOLUTION 2024-297

A RESOLUTION AUTHORIZING THE CITY OF ANKENY, IOWA, TO MAKE AN APPLICATION TO THE IOWA DEPARTMENT OF TRANSPORTATION'S (IOWA DOT) TRAFFIC SAFETY IMPROVEMENT PROGRAM (TSIP) FOR THE PARTIAL FUNDING OF WEST 1ST STREET WIDENING & IMPROVEMENTS – PHASE 2 WITHIN THE CITY LIMITS OF ANKENY.

WHEREAS, the Traffic Safety Improvement Program is established by the Iowa Department of Transportation; and

WHEREAS, said program allows for funding to be provided to cities, counties and the Iowa DOT for eligible projects or programs that will contribute to improving traffic safety and operations; and

WHEREAS, The City of Ankeny has determined that improvements along West 1st Street, between the State Street and NW Greenwood Street intersections, will improve traffic safety and operations. Proposed improvements include replacing the four-lane undivided roadway with a five-lane roadway with center left-turn lane, replacement or relocation of impacted City infrastructure, providing ADA-compliant pedestrian ramps and sidewalk, and other associated work.

NOW, THEREFORE, BE IT RESOLVED, by the Council of the City of Ankeny, Iowa, that:

1. The City Council supports and approves the application for Traffic Safety Improvement Program funding.

2. The City Council hereby commits the additional funds necessary for construction of the project beyond any Traffic Safety Improvement Program funding.

3. The City Council hereby commits to accepting and maintaining these improvements in accordance with Iowa DOT's Transportation Safety Improvement Program.

4. The Mayor, or Mayor's designee, is hereby authorized to sign and execute the application on behalf of the City.

DATED at Ankeny, Iowa, this 15th day of July, 2024.

DocuSigned by:
Mark E. Holm
4C9F47CBF956471...

Mark E. Holm, Mayor

ATTEST:

DocuSigned by:
Michelle Yuska
7E497EC63C464A9...

Michelle Yuska, City Clerk

NARRATIVE

Existing Conditions

1st Street is an east/ west arterial corridor through the heart of the City of Ankeny. At the west corporate limits, 1st Street connects to Iowa Highway 415, and at the east limits, it continues into eastern Polk County as NE 94th Avenue. Interstate 35 (I-35) has a diverging diamond interchange (DDI) with East 1st Street at mile marker 92.

This funding application focuses on a segment of West 1st Street between NW Greenwood Street and NW/ SW State Street that is a narrow four-lane undivided urban street.

Due to corridor safety and traffic operational concerns, deteriorating pavement conditions, and projected traffic growth, the City of Ankeny plans to reconstruct West 1st Street as an undivided five-lane urban cross section, with center two-way left-turn lane, from east of NW Greenwood Street to 260 feet west of NW/ SW State Street.

The speed limit for West 1st Street is 35 mph. Within the project segment, West 1st Street provides access for single-family and multi-family residential developments, commercial and service businesses, two churches, a private elementary/ secondary school, and several small office buildings.

A recent TSIP project, No. CS-TSF-0187(645)—85-77, completed in 2022, reconstructed a segment of West 1st Street between Ankeny Boulevard/ US Highway 69 and NW/ SW Scott Street as an undivided five-lane urban roadway with center two-way left-turn lane.

Traffic Data

Iowa Department of Transportation (DOT) and City of Ankeny 2008 - 2021 annual average daily traffic (AADT) on West 1st Street is shown below. Detailed count data from 2021 is provided in Section J of this application.

Average Annual Daily Traffic (vpd = vehicles per day)

Count date	Count by:	West of NW/ SW State St	East of NW Greenwood St
2008	Iowa DOT	NA	7,200 vpd
2012	Iowa DOT	12,700 vpd	NA
2021	City	12,770 vpd	10,790 vpd
2024	City	14,270 vpd	12,350 vpd

Traffic Projections

Based on a 2018 study of population trends and projections for the City of Ankeny[1], the population of the City is projected to increase to approximately 130,000 residents in 2040. If traffic volumes on the City's arterial streets grow at a similar rate, the 2040 projected volumes on West 1st Street in the project section are in the range of 19,800 to 22,900 vehicles per day.[2]

Crash Experience

The most recent five years' crash data, from January 2019 through December 2023, as available using the Iowa DOT Iowa Crash Analysis Tool (ICAT), was reviewed and is summarized below. The ICAT "Quick Report" is in Section I of this application.

---

[1] The Ankeny Plan 2040

[2] A revised future volume forecast model developed by Des Moines Area MPO for the City's Transportation Master Plan in 2024 estimated average daily traffic to be 18,000 vpd. Previous MPO models did not include West 1st Street.

During this period, 31 reported crashes occurred along the proposed West 1st Street project segment, resulting in three (3) serious injuries, three (3) minor injuries and six (6) possible/ unknown injuries. No fatalities were reported in the studied period.

Ten (10) crashes were right-angle crashes associated with vehicles entering or crossing West 1st Street at various driveways or intersections. Six (6) of these crashes occurred at the intersection with NW/ SW Linden Street.

Rear-end, left-turn, and sideswipe crashes are typical of undivided four-lane streets, due to drivers slowing to turn, drivers stopped to wait for a gap, drivers swerving to avoid stopped or slowing vehicles, and poor sightlines for left-turning drivers. Half of all crashes (16 of 31) in the studied period were these typical crash types on undivided four-lane streets:

- 6 rear-end crashes
- 7 sideswipe, same direction, crashes
- 3 left-turn (vs oncoming) crashes

West 1st Street is not evaluated as a segment with Iowa DOT's Potential for Crash Reduction (PCR) database, however, the intersection with NW/ SW Linden Street is listed with "High PCR" for severe crashes (KAB) in the category of 'Undivided Low Speed Partial Stop Control'. The intersection ranks #9 of 21,195 similar intersection in terms of fatal and injury crashes (2016-2020).

Proposed Improvement

The proposed corridor safety improvement is widening to add a center left-turn lane as part of the planned street reconstruction. The center two-way left-turn lane will transition to dedicated left-turn lanes at the intersection with NW/ SW Linden Street. Proposed improvements are shown in Section G of this application. Right-of-way acquisition for the project is expected to be minimal and include mostly permanent sidewalk easements and temporary construction easements.

Expected safety benefits of the proposed improvement include the following:

- Reduction in left turn crashes due to improved sight distance for opposing left turning vehicles.
- Reduction in rear-end crashes due to removing left-turning traffic from the through-lanes
- Reduction in sideswipe crashes due to reduction in lane-changing maneuvers to avoid slowing or stopped vehicles in the through-lanes

The Iowa DOT 2017 *Statewide Screening for Potential Lane Reconfiguration* identified the West 1st Street corridor (NW Greenwood Street to N Ankeny Boulevard) as a potential location for a four-lane to three-lane road diet. Similar to the previous safety improvement project on West 1st Street between Ankeny Boulevard and NW/ SW Scott Street, it is expected that additional capacity will be needed to accommodate future traffic growth in this section of West 1st Street. It is also expected that the intersection with NW/ SW Linden Street will need signalization in the near-to-mid-term future, and the signalized intersection will not operate acceptably in a three-lane configuration. Therefore, a five-lane section was determined to be the preferred cross-section.

Engineer's Opinion of Probable Project Costs
West 1st Street Widening & Improvements - Phase 2
Between NW Greenwood Street & NW/ SW State Street
City of Ankeny, Iowa
September 2023

SUDAS	DESCRIPTION	Estimated Cost	Safety Portion	Est. Safety Cost	Non-Safety Cost
Division 2	Earthwork	$ 822,245	20%	$ 164,400	$ 657,845
Division 3	Trench Excavation & Backfill	$ 10,000	20%	$ 2,000	$ 8,000
Division 4	Sewers & Drains	$ 669,400			$ 669,400
Division 5	Water Mains & Appurtances	$ 818,775			$ 818,775
Division 6	Structures for Sanitary & Storm Sewers	$ 264,000			$ 264,000
Division 7	Streets & Related Work	$ 2,534,515	20%	$ 506,900	$ 2,027,615
Division 6	Traffic Control	$ 199,775	20%	$ 40,000	$ 159,775
Division 7	Site Work & Landscaping	$ 82,500			$ 82,500
Division 8	Miscellaneous	$ 532,500	10%	$ 53,300	$ 479,200
	Construction Subtotal (rounded)	**$ 5,934,000**		**$ 766,600**	**$ 5,167,400**
	Other Special & Contingency (20% +/-)	**$ 1,437,000**		**$ 153,300**	**$ 1,283,700**
	Construction Total	**$ 7,371,000**		**$ 919,900**	**$ 6,451,100**
	Design Services (15% +/-)	**$ 1,106,000**			**$ 1,106,000**
	Construction Services (10% +/-)	**$ 737,000**			**$ 737,000**
	Streetlights	**$ 150,000**			**$ 150,000**
	Property Acquisitions	**$ 100,000**			**$ 100,000**
	Estimated Total Project Costs	**$ 9,464,000**		**$ 919,900**	**$ 8,544,100**

Notes:
1. Items related to center two-way left-turn lane at 20% safety cost (1 of 5 lanes).
2. Division 8 (Mobilization) estimated at 10% for safety cost.

Proposed Funding Sources	**Amount**
Traffic Safety Improvement Program	**$ 500,000**
MPO/ STBG Grants	**$ 2,846,500**
Local Funds	**$ 6,117,500**

PROPOSED PROJECT SCHEDULE
West 1st Street Widening & Improvements – Phase 2
Ankeny, Iowa

August 2024	TSIP Application
January 2025	Iowa DOT Approval
March 2025	TSIP Agreement
February 2024 – November 2025	Project Engineering
December 2025	Project Letting
April 2026 – November 2027	Project Construction

LOCATION MAP

West 1st Street Widening & Improvements – Phase 2

Ankeny, Iowa

PHOTOS

F

West 1st Street Widening & Improvements – Phase 2

Ankeny, Iowa

Looking to the east, near east end of project corridor near NW/ SW State Street

Looking to the east, near east end of project corridor near NW/ SW State Street

PHOTOS

West 1st Street Widening & Improvements – Phase 2

Ankeny, Iowa

Looking to the west, near east end of project corridor near NW/ SW Sharmin Drive

Looking to the west, near east end of project corridor near NW/ SW Sharmin Drive

PHOTOS

F

West 1st Street Widening & Improvements – Phase 2

Ankeny, Iowa

Looking to the west, viewing west half of project corridor

Looking to the west, viewing west half of project corridor

PHOTOS

F

West 1st Street Widening & Improvements – Phase 2

Ankeny, Iowa

Looking to the west, near west end of project corridor near NW Greenwood Street

Looking to the east, near west end of project corridor near NW Greenwood Street

PUBLIC WORKS DEPARTMENT
ENGINEERING DIVISION

city of Ankeny
bringing it all together

WEST 1ST STREET WIDENING AND IMPROVEMENTS - PHASE 2

2023 CIP Exhibit - W 1st St Widen and Improve - Phase 2

SHEET L.1

S:\PUBWORKS\ENGINEERINGDIVISION\PUBLIC WORKS PROJECTS\2023 PUBLIC WORKS_2023 CIP REQUESTS\STR - STREETS & ALLEYS\2024-2027 - W 1ST ST WIDENING AND IMPROVEMENTS - PHASE 2\2023 CIP EXHIBIT - W 1ST ST WIDEN AND IMPROVE -

PUBLIC WORKS DEPARTMENT

ENGINEERING DIVISION

city of Ankeny

bringing it all together

WEST 1ST STREET WIDENING AND IMPROVEMENTS - PHASE 2

2023 CIP Exhibit - W 1st St Widen and Improve - Phase 2

SHEET L.2

S:\PUBWORKS\ENGINEERINGDIVISION\PUBLIC WORKS PROJECTS\2023 PUBLIC WORKS_2023 CIP REQUESTS\STR - STREETS & ALLEYS\2024-2027 - W 1ST ST WIDENING AND IMPROVEMENTS - PHASE 2\2023 CIP EXHIBIT - W 1ST ST WIDEN AND IMPROVE -

AERIAL PHOTO

West 1st Street Widening & Improvements – Phase 2

Ankeny, Iowa

Iowa Crash Analysis Tool
Quick Report
2019-2023

Crash Severity	31
Fatal Crash	0
Suspected Serious Injury Crash	2
Suspected Minor Injury Crash	3
Possible/Unknown Injury Crash	5
Property Damage Only	21

Injury Status Summary	14
Fatalities	0
Suspected serious/incapacitating	3
Suspected minor/non-incapacitating	3
Possible (complaint of pain/injury)	6
Uninjured	0
Unknown	2
Not Reported	0

Property/Vehicles/Occupants	
Property Damage Total (dollars):	202,150.00
Average (per crash dollars):	6,520.97
Total Vehicles:	59.00
Average (per crash):	1.90
Total Occupants:	99.00
Average (per crash):	3.19

Average Severity	
Fatalities/Fatal Crash:	0.00
Fatalities/Crash:	0.00
Injuries/Crash:	0.39
Major Injuries/Crash:	0.10
Minor Injuries/Crash:	0.10
Possible/Unknown Injuries/Crash:	0.19

Iowa Crash Analysis Tool
Quick Report
2019-2023

Major Cause			**31**
Animal	0	Ran traffic signal	0
Ran stop sign	6	Failed to yield to emergency vehicle	0
FTYROW: At uncontrolled intersection	0	FTYROW: Making right turn on red signal	0
FTYROW: From stop sign	3	FTYROW: From yield sign	0
FTYROW: Making left turn	2	FTYROW: From driveway	1
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	5
Exceeded authorized speed	0	Improper or erratic lane changing	2
Operating vehicle in an reckless/erratic/care...	0	Followed too close	3
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	2
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...	2
Driver Distraction: Exterior distraction	0	Ran off road - right	0
Ran off road - straight	0	Ran off road - left	0
Lost control	2	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	2
Unknown	1	Not reported	0
Other: No improper action	0		

Iowa Crash Analysis Tool
Quick Report
2019-2023

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	2	0	0	0	0	2	0	0	0	1	1	0	0	6
Monday	0	0	0	1	1	2	1	2	0	0	0	0	0	7
Tuesday	0	0	0	0	0	0	0	0	1	0	0	0	0	1
Wednesday	0	0	0	0	1	0	0	0	1	0	0	0	0	2
Thursday	0	0	0	3	1	1	0	0	0	1	1	0	0	7
Friday	0	0	0	0	2	0	2	0	2	0	1	0	0	7
Saturday	0	0	0	1	0	0	0	0	0	0	0	0	0	1
Total	2	0	0	5	5	5	3	2	4	2	3	0	0	31

Manner of Crash Collision	**31**
Non-collision (single vehicle)	4
Head-on (front to front)	1
Rear-end (front to rear)	6
Angle (oncoming left turn)	3
Broadside (front to side)	8
Sideswipe (same direction)	7
Sideswipe (opposite direction)	0
Rear to rear	0
Rear to side	0
Not reported	0
Other	1
Unknown	1

Surface Conditions	**31**
Dry	21
Wet	1
Ice/frost	1
Snow	7
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			**59**
Bridge overhead structure	0	Bridge pier or support	0
Bridge/bridge rail parapet	0	Curb/island/raised median	3
Ditch	0	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	1	Traffic sign support	0
Traffic signal support	0	Other post/pole/support	1
Fire hydrant	0	Mailbox	0
Tree	0	Landscape/shrubbery	0
Snow bank	1	Fence	0
Wall	0	Building	0
Other fixed object	0	None (no fixed object struck)	53

Iowa Crash Analysis Tool
Quick Report
2019-2023

Driver Age/Driver Gender					
Driver Age - 5 year Bins	Female	Male	Not reported	Unknown	**Total**
< 14	0	0	0	0	0
= 14	0	1	0	0	1
= 15	1	0	0	0	1
= 16	2	0	0	0	2
= 17	0	2	0	0	2
= 18	1	1	0	0	2
= 19	0	1	0	0	1
= 20	0	2	0	0	2
>= 21 and <= 24	2	4	0	0	6
>= 25 and <= 29	2	5	0	0	7
>= 30 and <= 34	1	2	0	0	3
>= 35 and <= 39	3	2	0	0	5
>= 40 and <= 44	4	4	0	0	8
>= 45 and <= 49	2	1	0	0	3
>= 50 and <= 54	1	0	0	0	1
>= 55 and <= 59	0	5	0	0	5
>= 60 and <= 64	0	1	0	0	1
>= 65 and <= 69	3	0	0	0	3
>= 70 and <= 74	0	0	0	0	0
>= 75 and <= 79	1	2	0	0	3
>= 80 and <= 84	1	0	0	0	1
>= 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	2	0	2
Total	24	33	2	0	59

Drug/Alcohol Related	31
Drug	0
Alcohol (< Statutory)	0
Alcohol (Statutory)	1
Drug and Alcohol (< Statutory)	0
Drug and Alcohol (Statutory)	0
Refused	0
Under Influence of Alcohol/Drugs/Medications	0
None Indicated	30

Alcohol Test Given	59
None	56
Blood	1
Urine	0
Breath	0
Vitreous	0
Refused	0
Not reported	2

Drug Test Given	59
None	57
Blood	0
Urine	0
Breath	0
Vitreous	0
Refused	0
Not reported	2

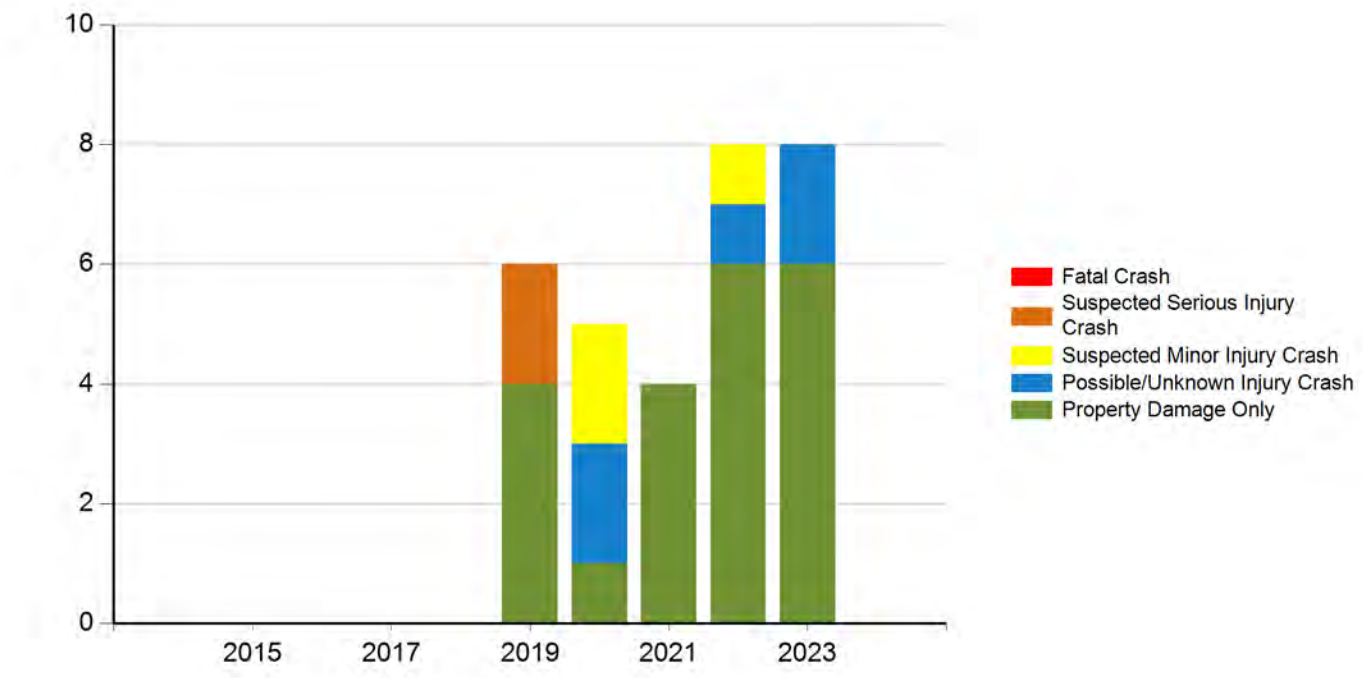
Drug Test Result	59
Negative	0
Cannabis	0
Central Nervous System depressants	0
Central Nervous System stimulants	0
Hallucinogens	0
Inhalants	0
Narcotic Analgesics	0
Dissociative Anesthetic (PCP)	0
Prescription Drug	0
Not reported	59
Other	0

Iowa Crash Analysis Tool
Quick Report
2019-2023

Crash Severity - Annual

Crash Year	Fatal Crash	Suspected Serious Injury Crash	Suspected Minor Injury Crash	Possible/Unknown Injury Crash	Property Damage Only	**Total**
2014	0	0	0	0	0	0
2015	0	0	0	0	0	0
2016	0	0	0	0	0	0
2017	0	0	0	0	0	0
2018	0	0	0	0	0	0
2019	0	2	0	0	4	6
2020	0	0	2	2	1	5
2021	0	0	0	0	4	4
2022	0	0	1	1	6	8
2023	0	0	0	2	6	8
2024	0	0	0	0	0	0
Total	0	2	3	5	21	31

Severity/Year

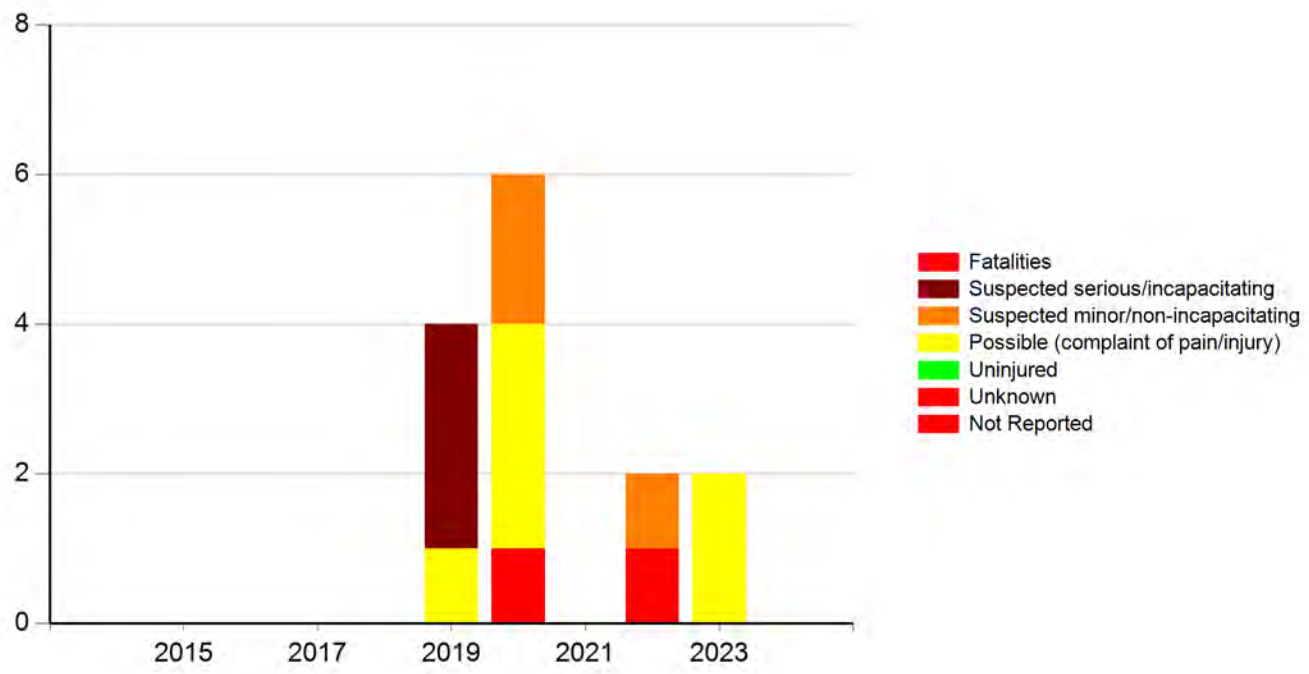


Iowa Crash Analysis Tool
Quick Report
2019-2023

Injury Status - Annual

Crash Year	Fatalities	Suspected serious/incapacitating	Suspected minor/non-incapacitating	Possible (complaint of pain/injury)	Uninjured	Unknown	Not Reported	**Total**
2014	0	0	0	0	0	0	0	0
2015	0	0	0	0	0	0	0	0
2016	0	0	0	0	0	0	0	0
2017	0	0	0	0	0	0	0	0
2018	0	0	0	0	0	0	0	0
2019	0	3	0	1	0	0	0	4
2020	0	0	2	3	0	1	0	6
2021	0	0	0	0	0	0	0	0
2022	0	0	1	0	0	1	0	2
2023	0	0	0	2	0	0	0	2
2024	0	0	0	0	0	0	0	0
Total	0	3	3	6	0	2	0	14

Injury Status/Year



Iowa Crash Analysis Tool
Quick Report
2019-2023

Meeting the following criteria

Jurisdiction: Cities (Ankeny)
Year: 2019, 2020, 2021, 2022, 2023
Map Selection: Yes
Filter: None

Analyst Information

West 1st Stret project area

J

Intersection Name	West 1st Street & Linden Street
City	Ankeny
State	Iowa
Northbound Street	Linden Street
Southbound Street	Linden Street
Eastbound Street	West 1st Street
Westbound Street	West 1st Street
Date	4/18/2024

J

15 Minute (Cars + Trucks)	Southbound				Westbound				Northbound				Eastbound				Intersection
Time	Left	Through	Right	Total	Left	Through	Right	Total	Left	Through	Right	Total	Left	Through	Right	Total	Total 15 Min.
0:00	0	0	0	0	0	4	0	4	0	0	0	0	0	3	1	4	8
0:15	0	0	0	0	0	5	0	5	0	0	1	1	0	2	1	3	9
0:30	0	1	0	1	0	5	1	6	0	0	0	0	0	4	0	4	11
0:45	0	0	0	0	0	2	0	2	0	0	1	1	0	3	0	3	6
1:00	0	1	0	1	0	2	1	3	0	0	0	0	0	3	0	3	7
1:15	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	1
1:30	0	0	0	0	0	2	0	2	0	1	0	1	0	1	0	1	4
1:45	0	0	0	0	0	2	0	2	0	0	0	0	0	2	0	2	4
2:00	0	1	0	1	0	2	0	2	0	0	0	0	0	0	0	0	3
2:15	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	1
2:30	0	0	0	0	0	4	1	5	0	0	0	0	0	3	0	3	8
2:45	0	0	0	0	0	4	0	4	0	0	1	1	0	2	0	2	7
3:00	0	0	0	0	0	1	0	1	0	0	1	1	0	3	1	4	6
3:15	0	0	0	0	0	0	0	0	1	0	0	1	0	4	0	4	5
3:30	1	0	0	1	0	0	0	0	0	0	0	0	0	3	0	3	4
3:45	1	0	0	1	0	2	0	2	0	0	0	0	0	3	0	3	6
4:00	1	0	0	1	0	2	0	2	0	0	0	0	0	4	0	4	7
4:15	0	0	0	0	0	5	0	5	0	0	0	0	0	9	0	9	14
4:30	0	1	0	1	1	5	0	6	0	0	0	0	1	15	0	16	23
4:45	3	0	0	3	1	8	0	9	1	0	0	1	0	22	1	23	36
5:00	1	1	0	2	0	5	0	5	0	1	1	2	0	14	1	15	24
5:15	0	1	0	1	5	9	0	14	0	0	0	0	0	24	1	25	40
5:30	3	4	0	7	0	21	1	22	0	0	1	1	0	29	0	29	59
5:45	1	3	0	4	5	51	4	60	1	0	2	3	0	36	3	39	106
6:00	3	5	1	9	4	29	1	34	1	2	3	6	0	42	2	44	93
6:15	5	3	1	9	4	34	1	39	1	0	0	1	0	51	2	53	102
6:30	6	10	5	21	5	48	2	55	1	1	3	5	0	45	4	49	130
6:45	7	4	2	13	2	55	4	61	2	0	2	4	0	85	4	89	167
7:00	7	6	6	19	4	74	7	85	1	2	4	7	2	91	4	97	208
7:15	11	17	4	32	3	70	4	77	5	0	1	6	1	132	5	138	253
7:30	4	5	6	15	5	94	5	104	0	0	2	2	0	159	4	163	284
7:45	5	5	3	13	1	118	5	124	2	0	5	7	2	216	4	222	366
8:00	7	3	4	14	3	124	10	137	1	0	2	3	1	138	3	142	296
8:15	4	2	1	7	4	98	5	107	0	0	2	2	2	122	5	129	245
8:30	6	2	1	9	3	86	8	97	1	0	7	8	0	81	2	83	197
8:45	3	4	3	10	3	48	7	58	0	2	0	2	3	75	3	81	151
9:00	1	5	1	7	1	46	7	54	3	0	1	4	3	64	5	72	137
9:15	5	3	1	9	1	46	9	56	0	0	3	3	1	67	2	70	138
9:30	1	3	1	5	5	54	5	64	0	0	2	2	1	61	3	65	136
9:45	10	4	2	16	1	57	7	65	1	2	2	5	0	53	3	56	142
10:00	7	2	2	11	4	44	3	51	0	0	2	2	3	55	1	59	123
10:15	5	2	0	7	1	59	6	66	3	1	5	9	3	62	3	68	150
10:30	2	5	3	10	3	55	3	61	1	1	3	5	0	72	3	75	151
10:45	6	7	3	16	3	81	6	90	3	1	0	4	0	75	3	78	188
11:00	5	1	1	7	4	73	5	82	1	1	2	4	1	68	0	69	162
11:15	4	4	1	9	0	76	4	80	2	1	4	7	1	73	2	76	172
11:30	5	2	1	8	2	78	3	83	4	0	6	10	0	61	1	62	163
11:45	3	1	0	4	3	89	5	97	2	2	0	4	1	77	5	83	188
12:00	5	3	0	8	5	93	2	100	3	1	6	10	1	75	5	81	199
12:15	6	0	1	7	3	85	4	92	4	1	5	10	2	58	2	62	171
12:30	4	2	1	7	3	75	6	84	0	3	2	5	1	84	2	87	183
12:45	8	5	1	14	3	67	9	79	4	2	5	11	0	74	1	75	179
13:00	3	3	3	9	2	70	9	81	3	0	3	6	4	73	1	78	174
13:15	1	3	2	6	2	66	6	74	1	3	3	7	3	41	1	45	132
13:30	2	0	2	4	3	76	2	81	0	1	3	4	2	68	4	74	163
13:45	4	7	2	13	2	71	5	78	0	3	2	5	0	69	1	70	166
14:00	4	1	2	7	4	79	4	87	3	1	4	8	0	71	1	72	174
14:15	5	2	0	7	4	100	5	109	3	2	3	8	1	60	2	63	187
14:30	4	3	1	8	0	88	7	95	5	3	18	26	1	75	2	78	207
14:45	8	5	3	16	3	92	3	98	1	2	5	8	1	66	2	69	191
15:00	6	2	2	10	3	120	7	130	3	6	6	15	3	86	1	90	245
15:15	11	3	0	14	0	84	10	94	7	2	13	22	6	95	3	104	234
15:30	4	1	1	6	4	138	11	153	1	2	25	28	1	135	2	138	325
15:45	7	2	2	11	3	178	10	191	3	2	8	13	2	125	1	128	343
16:00	11	3	1	15	0	157	9	166	5	4	8	17	7	132	5	144	342
16:15	8	3	4	15	2	129	17	148	2	3	6	11	3	124	2	129	303
16:30	10	4	7	21	3	133	14	150	4	2	16	22	2	130	4	136	329
16:45	5	2	3	10	1	129	10	140	3	2	7	12	5	113	4	122	284
17:00	10	5	1	16	2	159	18	179	3	4	4	11	0	134	3	137	343
17:15	13	6	4	23	1	140	15	156	4	6	7	17	4	113	2	119	315
17:30	7	4	1	12	1	128	13	142	4	4	7	15	1	131	7	139	308
17:45	8	1	0	9	0	129	12	141	5	6	7	18	2	93	3	98	266
18:00	3	2	1	6	0	111	12	123	2	1	3	6	2	92	1	95	230
18:15	8	6	5	19	1	106	15	122	1	5	2	8	5	77	3	85	234
18:30	4	4	0	8	1	91	6	98	3	1	1	5	4	80	0	84	195
18:45	10	1	0	11	0	83	8	91	6	2	2	10	0	88	2	90	202
19:00	7	2	2	11	0	101	12	113	1	3	2	6	5	50	1	56	186
19:15	4	1	1	6	0	107	12	119	1	0	0	1	2	54	2	58	184
19:30	3	0	1	4	0	99	9	108	1	2	0	3	0	56	0	56	171
19:45	7	0	5	12	1	85	7	93	2	2	0	4	1	55	0	56	165
20:00	5	1	1	7	0	75	5	80	1	0	0	1	1	52	0	53	141
20:15	1	0	1	2	0	67	4	71	3	2	1	6	1	50	1	52	131
20:30	2	1	0	3	2	82	4	88	2	0	1	3	1	43	2	46	140
20:45	3	0	2	5	1	82	8	91	2	2	0	4	1	37	1	39	139
21:00	8	0	1	9	1	52	5	58	1	1	0	2	3	29	0	32	101
21:15	2	1	1	4	2	58	0	60	1	3	1	5	1	31	2	34	103
21:30	6	1	2	9	1	42	2	45	9	1	11	21	1	12	0	13	88
21:45	2	1	0	3	0	29	2	31	2	1	1	4	1	30	1	32	70
22:00	1	0	0	1	1	22	4	27	1	1	0	2	0	12	0	12	42
22:15	2	0	0	2	2	24	0	26	1	0	0	1	0	14	0	14	43
22:30	1	0	1	2	1	8	1	10	0	1	0	1	1	8	1	10	23
22:45	0	0	0	0	0	9	1	10	0	1	1	2	0	12	0	12	24
23:00	0	0	0	0	0	11	0	11	1	1	2	4	0	10	0	10	25
23:15	0	0	0	0	0	9	0	9	1	1	0	2	0	5	0	5	16
23:30	2	0	0	2	0	7	3	10	0	0	1	1	1	6	0	7	20
23:45	0	0	1	1	0	5	0	5	1	0	0	1	0	5	0	5	12

Pedestrians Time	Xing SB Approach	Xing WB Approach	Xing NB Approach	Xing EB Approach
0:00	0	0	0	0
0:15	1	0	0	0
0:30	0	0	0	0
0:45	0	0	0	0
1:00	0	0	0	0
1:15	0	0	0	0
1:30	0	0	0	0
1:45	0	0	0	0
2:00	0	0	0	0
2:15	1	0	0	0
2:30	0	0	0	0
2:45	0	0	0	0
3:00	0	0	0	0
3:15	0	0	0	0
3:30	0	0	0	0
3:45	0	0	0	0
4:00	0	0	0	0
4:15	0	0	0	0
4:30	0	0	0	0
4:45	0	0	0	0
5:00	0	0	0	0
5:15	0	0	0	0
5:30	0	0	0	0
5:45	2	0	0	0
6:00	0	0	0	0
6:15	0	0	0	0
6:30	0	0	0	0
6:45	0	0	0	0
7:00	0	0	0	0
7:15	1	0	0	0
7:30	0	0	0	0
7:45	0	0	1	0
8:00	0	0	0	0
8:15	0	0	0	0
8:30	0	0	0	0
8:45	0	0	0	0
9:00	0	0	1	0
9:15	0	0	0	0
9:30	0	0	0	0
9:45	1	0	1	0
10:00	0	0	0	0
10:15	0	0	0	0
10:30	0	0	0	0
10:45	0	1	0	0
11:00	1	0	0	0
11:15	0	0	0	0
11:30	2	0	0	0
11:45	1	0	0	0
12:00	0	1	0	0
12:15	0	0	0	0
12:30	0	0	0	0
12:45	0	0	0	0
13:00	0	0	0	0
13:15	0	0	0	0
13:30	1	1	1	0
13:45	0	0	0	0
14:00	0	0	0	0
14:15	0	0	0	0
14:30	0	0	1	0
14:45	0	0	0	0
15:00	0	0	0	0
15:15	1	0	0	0
15:30	0	0	0	0
15:45	1	0	1	0
16:00	0	0	0	0
16:15	0	0	1	0
16:30	1	0	0	0
16:45	1	0	0	0
17:00	0	0	1	0
17:15	0	0	2	0
17:30	0	0	0	0
17:45	2	0	1	1
18:00	3	0	2	0
18:15	0	0	0	0
18:30	0	0	0	0
18:45	0	0	1	0
19:00	0	0	0	0
19:15	0	0	0	0
19:30	0	0	0	0
19:45	0	0	0	0
20:00	0	0	0	0
20:15	1	0	0	0
20:30	0	0	0	0
20:45	0	0	0	0
21:00	0	0	0	0
21:15	0	0	0	0
21:30	0	0	0	0
21:45	0	0	0	0
22:00	1	0	0	1
22:15	0	0	0	0
22:30	0	0	0	0
22:45	0	0	0	0
23:00	0	0	0	0
23:15	0	0	0	0
23:30	0	0	0	0
23:45	0	0	0	0

Bicycles Time	Xing SB Approach	Xing WB Approach	Xing NB Approach	Xing EB Approach
0:00	0	0	0	0
0:15	0	0	0	0
0:30	0	0	0	0
0:45	0	0	0	0
1:00	0	0	0	0
1:15	0	0	0	0
1:30	0	0	0	0
1:45	0	0	0	0
2:00	0	0	0	0
2:15	0	0	0	0
2:30	0	0	0	0
2:45	0	0	0	0
3:00	0	0	0	0
3:15	0	0	0	0
3:30	0	0	0	0
3:45	0	0	0	0
4:00	0	0	0	0
4:15	0	0	0	0
4:30	0	0	0	0
4:45	0	0	0	0
5:00	0	0	0	0
5:15	0	0	0	0
5:30	0	0	0	0
5:45	0	0	0	0
6:00	0	0	0	0
6:15	0	0	0	0
6:30	0	0	0	0
6:45	0	0	0	0
7:00	2	0	0	0
7:15	0	0	0	0
7:30	0	0	0	0
7:45	0	0	0	0
8:00	0	0	0	0
8:15	0	0	0	0
8:30	0	0	0	0
8:45	0	0	0	0
9:00	0	0	0	0
9:15	0	0	0	0
9:30	0	0	0	0
9:45	0	0	0	0
10:00	0	0	0	0
10:15	0	0	0	0
10:30	0	0	0	0
10:45	0	0	0	0
11:00	0	0	0	0
11:15	0	0	0	0
11:30	0	0	0	0
11:45	0	0	0	0
12:00	0	0	0	0
12:15	0	0	0	0
12:30	0	0	0	0
12:45	0	0	0	0
13:00	1	0	0	0
13:15	0	0	0	0
13:30	0	0	0	0
13:45	0	0	0	0
14:00	0	0	0	0
14:15	0	0	0	0
14:30	0	0	0	0
14:45	0	0	1	0
15:00	0	0	0	0
15:15	0	0	0	0
15:30	0	0	0	0
15:45	0	0	0	0
16:00	0	0	0	0
16:15	0	1	0	0
16:30	0	0	0	0
16:45	0	0	0	0
17:00	1	0	0	0
17:15	0	0	0	0
17:30	0	0	0	0
17:45	0	0	0	0
18:00	0	0	0	0
18:15	0	0	0	0
18:30	0	2	0	0
18:45	0	0	0	0
19:00	0	0	0	0
19:15	0	0	0	0
19:30	0	0	0	0
19:45	0	0	0	0
20:00	0	0	0	0
20:15	0	0	0	0
20:30	0	0	0	0
20:45	0	0	0	0
21:00	0	0	0	0
21:15	0	0	0	0
21:30	1	0	0	0
21:45	1	0	0	0
22:00	1	0	0	0
22:15	0	0	0	0
22:30	0	0	0	0
22:45	2	0	0	0
23:00	1	0	0	0
23:15	0	0	0	0
23:30	0	0	0	0
23:45	0	0	0	0

IOWA DOT

County:	Polk	Prepared By:	LH
Location:	West 1st Street	Date Prepared:	8/2/2024
Proposed Improvements:	widen to provide center two-way left-turn lane on West 1st Street between NW Greenwood Street and NW/ SW State Street		
Estimated Improvement Cost:	$ 919,900		
Inflation on Crash Costs:	4%	Annual Maintenance: (% of Improvement Cost)	2%
Discount Rate:	4%		
Estimated Service Life:	20	Annual Maintenance Cost:	$ 18,398

Method Choice: CRF Method

The Crash Reduction Factor (CRF) Method applies one to three CRFs to historical crashes to estimate reductions in future crashes. Crash Modification Factors (CMFs) can be converted to CRFs. For additional information, click the "Learn More" button.

Crash Reduction Factor (CRF) Method

Traffic Growth Factor:	3%
Number of CRFs:	1
Years of Crash History:	5

Combined CRF (Dominant Common Residuals Method)

Iowa DOT's preferred methodology for combining CRFs is Dominant Common Residuals, since it is more conservative than the other options.

	CRF 1:	Combined CRF
CRF Value (%)	35	**35.0**

Crash Severity	Rounded Societal Costs	Crash History (Total):	CRF (from above)	Crash History - Annual Avg	Crashes Saved Annually
Fatal (K)	$ 4,200,000		35.0	**0.00**	**0.00**
Serious Injury (A)	$ 4,200,000	2	35.0	**0.40**	**0.14**
Minor Injury (B)	$ 280,000	3	35.0	**0.60**	**0.21**
Possible/Unknown Injury (C)	$ 130,000	5	35.0	**1.00**	**0.35**
Property Damage Only (O)	$ 20,000	21	35.0	**4.20**	**1.47**

Crash Severity	Annual Societal Benefit
Fatal (K)	**$ -**
Serious Injury (A)	**$ 588,000**
Minor Injury (B)	**$ 58,800**
Possible/Unknown Injury (C)	**$ 45,500**
Property Damage Only (O)	**$ 29,400**

Total Benefits and Costs

		Implementation Cost	$ 919,900
		Present Value of Maint.	$ 250,035
Present Value Benefits (Societal Benefits)	$ 12,132,106	Present Value Costs (Impl. and Maint. Costs)	$ 1,169,935
Present Value Net Return	$ 10,962,172		
Benefit Cost Ratio	**10.37**		

Form continues on next page

County:	Polk	Prepared By:	LH
Location:	West 1st Street	Date Prepared:	8/2/2024

User Input Required - Custom Values Used

General Customizations

No change to Crash Costs

No change to Discount Rate

No change to Maintenance Costs

Method-Specific Customizations

Justification for deviation from default Traffic Growth Rate	Traffic growth rate estimated based on study of expected population growth in the City through year 2040.

No change to Crash History

Traffic Safety Improvement Program Application

Grant Street Realignment at US Highway 65

Bondurant, Iowa
August 15, 2024

SHIVEHATTERY
ARCHITECTURE + ENGINEERING

Application for SITE-SPECIFIC TSIP FUNDS

GENERAL INFORMATION **DATE:** August 15, 2024

Location / Title of Project Grant Street Realignment at US Highway 65

Applicant City of Bondurant

Contact Person Marketa Oliver Title City Administrator

Complete Mailing Address 200 2nd Street NE Box 37

Bondurant, IA 50035

Phone (515) 967-2418 E-Mail moliver@cityofbondurant.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	$	2,528,000
Total Project Cost	$	3,682,970
Safety Funds Requested	**$**	**500,000**

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
2017065268	US 65 and Grant St S	☒	☐	**1.69**	**0.31**
		☐	☐		

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CITY OF BONDURANT
RESOLUTION NO. 240729-167

RESOLUTION OF ENDORSEMENT FOR THE CITY OF BONDURANT'S GRANT APPLICATION REQUEST TO THE IOWA DOT'S TRAFFIC SAFETY IMPROVEMENT PROGRAM FOR FUNDING TO ASSIST WITH THE GRANT STREET SOUTH REALIGNMENT AND INTERSECTION ENHANCEMENT PROJECT IDENTIFIED IN THE CENTRAL DISTRICT STORMWATER IMPROVEMENTS MASTER PLAN

WHEREAS the Building Bondurant Comprehensive Plan identifies the need to realign Grant Street South as it approaches the Highway 65 intersection area; AND

WHEREAS to help provide general guidance on the design of the Grant Street South realignment project, the Bondurant City Council adopted its Central District Stormwater Improvements Master Plan in November 2022; AND

WHEREAS the Central District Stormwater Improvements Master Plan calls for the need to realign Grant Street South and enhance the intersection of Grant Street South and Highway 65 while at the same time establishing a 116-acre regional park system with a 36-acre regional stormwater detention lake; AND

WHEREAS the City is appreciative of the opportunity to apply for funds through the Iowa Department of Transportation's Traffic Safety Improvement Program; AND

WHEREAS the City acknowledges that if awarded, the City will be responsible for obtaining the matching funds necessary to complete the project within the required timeframe; AND

WHEREAS the City acknowledges it will adequately maintain the completed project for its intended public use following project completion for a period more than twenty years; AND

NOW, THEREFORE, BE IT RESOLVED that the Bondurant City Council endorses the Grant Street South realignment and intersection enhancement project within the Central District Stormwater Improvements Master Plan area.

BE IT FURTHER RESOLVED that the Bondurant City Council authorizes submittal of the City's Traffic Safety Improvement Program grant application to the Iowa DOT in the amount of $500,000.

Passed and approved by the City Council of the City of Bondurant, Iowa, this 29th day of July 2024.

Signed by:

By: _____
182C84659A50485...

Doug Elrod, Mayor

Docusign Envelope ID: 73E0757C-3F4C-404E-B2A7-5305F484D1CA

ATTEST: I, Shelby Hagan, City Clerk of Bondurant, hereby certify that at a meeting of the City Council held on the above date, among other proceedings the above was adopted.

IN WITNESS WHEREOF, I have hereunto set my hand the day and year above written.

DocuSigned by:
Shelby Hagan
2609A3F42EF546A...

Shelby Hagan, City Clerk

Name	Yay	Nay	Abstain	Absent
Cox	X			
Driscoll	X			
McKenzie				X
Peffer	X			
Sillanpaa	X			

Background

The City of Bondurant is planning to make significant improvements to the Grant Street Corridor between 32nd Street SW and US Highway 65. Originally a Farm-to-Market road, Grant St has evolved to be a vital component in the region. The road has experienced a substantial increase in vehicle traffic over recent years due to several factors:

- Bondurant's population nearly doubling in the past decade. (91% increase between 2010 and 2020 Censuses)
- Recent development in the area and construction of an Amazon distribution center south of town with 30% of its 3,100 employees commuting via Grant St.
- Grant St is the primary North-South route through Bondurant. Designated as a minor arterial, it provides direct access to US Highway 65, and I-80 between Bondurant and the surrounding communities.
    - Based on available AADT data through the Iowa DOT and recent traffic count collected by Shive-Hattery in 2023, traffic volumes have increased from 3080 VPD in 2016 to roughly 3,900 VPD in 2023. This represents an annual growth rate of roughly 3.4% in traffic volumes year over year.

The current intersection layout includes a dedicated right-turn lane and a combined lane for through traffic and left turns. The proposed redesign of this intersection will introduce a dedicated left-turn lane, which will help reduce congestion and minimize confusion for drivers turning onto US HWY 65. Additionally, the intersection's geometry will be reconfigured after eliminating the existing quasi-frontage road created by 15th St SE alongside US HWY 65.

The existing speed limit along US Highway 65 is 55 mph. Grant Street has a posed speed limit of 45 mph south of US Hwy 65 and 35 mph north of US Hwy 65.

Crash History

The increased traffic volumes combined with non-traditional intersection geometry and higher vehicle speeds along US Highway 65 have resulted in multiple serious crashes. Crash data compiled from Iowa DOT ICAT website have been evaluated over a 5-year period. Between 2019 and 2023, 30 total crashes have been identified. These included 3 serious injury crashes, 5 suspected minor injury crashes, 8 possible/unknown injury crash, and 14 property damage-only incidents. Causes of crashes included running the traffic signal, driving too fast for conditions, and following too closely. Crash types involved 10 rear-end, 1 head-on, 2 (same direction) sideswipe, 7 broadside, 5 non-collision, and 12 other type. (Refer to Section I for a Crash History Summary.)

It should also be noted that the intersection at US Highway 65 and Grant St. is categorized as high risk with a **PCR rating of 1.69** with a statewide priority ranking of 362 out of 115,309 intersections.

Proposed Improvements

The proposed improvements include realigning the existing section of Grant Street south of US Highway 65 to eliminate the current non-traditional intersection geometry and quasi-frontage road. The realignment will simplify the intersection layout, thereby reducing the potential for driver confusion and enhancing safety.

Additionally, Grant Street will be upgraded from a 2-lane rural section to a 3-lane urban section with curb and gutter, overhead lighting, and pedestrian accommodations. These enhancements will improve overall safety by providing better visibility, reducing crash frequency, and offering adequate stacking distance for vehicles. This provides drivers better sight lines and more time to make safe decisions prior entering the intersection, significantly lowering the risk of accidents.

Intersection improvements at Grant Street and US Highway 65 will include the addition of dedicated left turn lanes constructed with a zero offset on both minor approaches, enhancing traffic flow and reducing congestion. To accommodate these changes, the existing traffic signals will be replaced, including the mast arm mounted signals currently positioned in the median. The current signal configuration creates confusion for drivers, who must navigate two sets of signals as they pass through the intersection.

The replacement signals (specifically within the median) will match the pole-mounted configuration used at adjacent intersections to the south along US Highway 65, providing a consistent and clearer signalization layout. Together, these changes will significantly enhance safety by reducing driver confusion, improving traffic flow, and lowering the risk of accidents as vehicles turn onto US Highway 65 and pass through the intersection.

Proposed Improvements are included in **Sections G and K** of this application.

Conclusion

The proposed improvements to the Grant Street Corridor and its intersection with US Highway 65 are designed to address critical safety issues and accommodate the growing traffic demand in Bondurant. The introduction of a dedicated left-turn lane and the realignment of the intersection will significantly reduce driver confusion and enhance traffic flow, particularly by eliminating the problematic quasi-frontage road. Upgrading Grant Street to a 3-lane urban section, along with improved signalization, will provide clearer guidance for drivers, reduce the likelihood of rear-end and broadside collisions, and improve visibility and decision-making for all road users.

Simplifying the intersection geometry, improving the signal configuration, and accommodating the increased traffic volumes will directly target and reduce the specific crash types that have historically occurred the area, such as rear-end and broadside collisions. These changes are targeted at reducing both the frequency of crashes but also decreasing their severity, ultimately leading to a safer and more reliable route for both local commuters and through traffic.

Specific crash reduction calculations are included in **Section L**.

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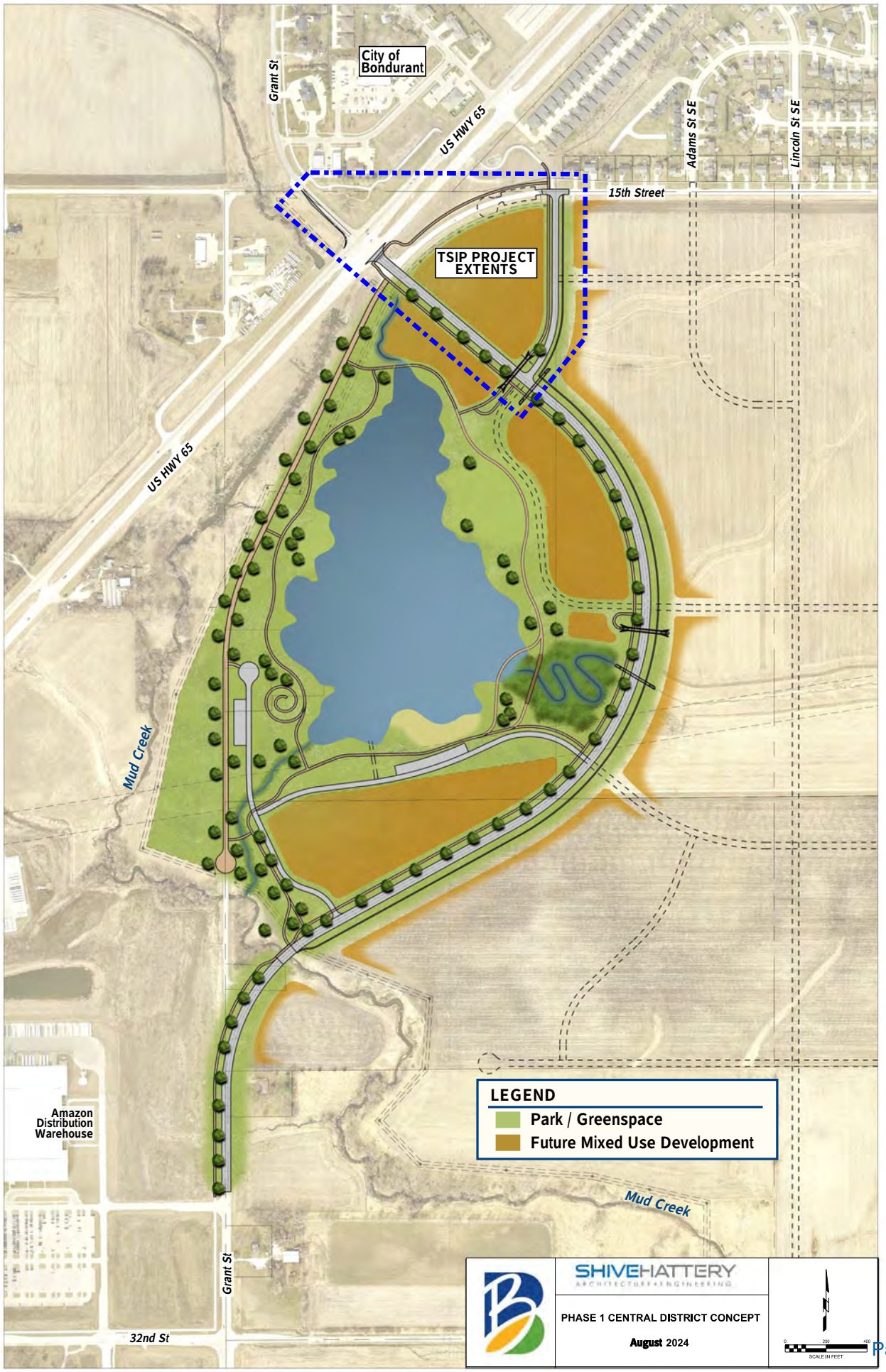
City of Bondurant
Grant Street Realignment at US Highway 65
TSIP Grant Application
Opinion of Probable Project Costs

ITEM NO.	ITEM	UNIT	QUANTITY	UNIT PRICE	NON-SAFETY ITEMS	SAFETY ITEMS
1	CONSTRUCTION STAKING	LS	1.0	$ 40,000.00	$ 40,000.00	
2	TRAFFIC CONTROL	LS	1.0	$ 30,000.00		$ 30,000.00
3	MOBILIZATION	LS	1.0	$ 200,000.00		$ 200,000.00
4	TOPSOIL STRIP, SALVAGE, & RE-SPREAD	CY	22400.0	$ 7.00		$ 156,800.00
5	EXCAVATION, CLASS 10	CY	2500.0	$ 5.50		$ 13,750.00
6	EMBANKMENT IN PLACE	CY	50000.0	$ 15.00		$ 750,000.00
7	CLEARING AND GRUBBING	LS	1.0	$ 10,000.00		$ 10,000.00
8	SUBGRADE PREPARATION	SY	9654.0	$ 10.00		$ 96,540.00
9	MODIFIED SUBBASE	SY	9654.0	$ 12.00		$ 115,848.00
10	EROSION CONTROL	LS	1.0	$ 20,000.00		$ 20,000.00
11	MANHOLE, SW-301	EA	4.0	$ 8,000.00	$ 32,000.00	
12	MANHOLE, SW-401	EA	2.0	$ 7,000.00	$ 14,000.00	
13	MANHOLE/INTAKE, ADJUSTMENT, MINOR	EA	1.0	$ 1,800.00	$ 1,800.00	
14	MANHOLE/INTAKE, ADJUSTMENT, MAJOR	EA	2.0	$ 3,000.00	$ 6,000.00	
15	CONNECTION TO EXISTING MANHOLE	EA	1.0	$ 2,500.00	$ 2,500.00	
16	SUBDRAIN	LF	3913.0	$ 14.00	$ 54,782.00	
17	SUNDRAIN, CONNECTION TO INTAKES OR STORM SEWER	EA	30.0	$ 550.00	$ 16,500.00	
18	SUBDRAIN, RISER & CLEANOUT ASSEMBLY	EA	8.0	$ 1,000.00	$ 8,000.00	
19	PAVEMENT REMOVALS	SY	3030.0	$ 15.00	$ 45,450.00	
20	PCC PAVEMENT, 8 IN	SY	9654.0	$ 75.00		$ 724,050.00
21	INTAKE, SW-505	EA	14.0	$ 6,000.00	$ 84,000.00	
22	INTAKE, SW-506	EA	14.0	$ 9,000.00	$ 126,000.00	
23	STORM BOX CULVERT	EA	1.0	$ 80,000.00	$ 80,000.00	
24	STORM SEWER, RCP, 15 IN	LF	825.0	$ 85.00	$ 70,125.00	
25	STORM SEWER, RCP, 18 IN	LF	150.0	$ 90.00	$ 13,500.00	
26	STORM SEWER, RCP, 24 IN	LF	675.0	$ 100.00	$ 67,500.00	
27	STORM SEWER, RCP, 30 IN	LF	1000.0	$ 110.00	$ 110,000.00	
28	REMOVAL OF STORM SEWER PIPE	LF	75.0	$ 35.00	$ 2,625.00	
29	WATERMAIN, 12 IN.	LF	1250.0	$ 95.00	$ 118,750.00	
30	GATE VALVE, 12 IN	EA	4.0	$ 5,000.00	$ 20,000.00	
31	FIRE HYDRANT ASSEMBLY	EA	3.0	$ 8,000.00	$ 24,000.00	
32	FITTING, DIP	EA	10.0	$ 1,750.00	$ 17,500.00	
33	PERMANENT SEEDING	AC	5.0	$ 3,500.00	$ 17,500.00	
34	TEMPORARY SEEDING	AC	10.0	$ 6,000.00	$ 60,000.00	
35	REMOVAL OF TRAFFIC SIGN	EA	4.0	$ 50.00		$ 200.00
36	PERMANENT PAVEMENT MARKINGS, PAINT	STA	50.0	$ 270.00		$ 13,500.00
37	PERMANENT PAVEMENT MARKINGS, SYMBOLS	EA	10.0	$ 425.00		$ 4,250.00
38	GROOVES CUT FOR PAVEMENT MARKINGS	STA	50.0	$ 150.00		$ 7,500.00
39	GROOVES CUT FOR SYMBOLS AND LEGENDS	EA	10.0	$ 250.00		$ 2,500.00
40	STREET LIGHTING	EA	13.0	$ 6,000.00		$ 78,000.00
41	PERMANENT SIGNING	LS	1.0	$ 5,000.00		$ 5,000.00
42	SANITARY SEWER	LF	1225.0	$ 100.00	$ 122,500.00	
43	SIGNAL MODIFICATIONS	LS	1.0	$ 300,000.00		$ 300,000.00
				CONSTRUCTION SUB-TOTAL	**$ 1,155,032.00**	**$ 2,527,938.00**
				CONSTRUCTION TOTAL	**$**	**3,682,970.00**

The schedule proposed for the safety improvements through the Grant Street Realignment at US Highway 65 is as follows:

- **August 2024** – Submit for 2025 TSIP Funds.
- **November 2024** – Project is awarded TSIP funds.
- **January 2024 – November 2025** – Proceed with design of improvements.
- **July 2025** –TSIP funds are available.
- **February 2026** –Let Road project.
- **Spring 2026** – Construction begins.
- **Spring 2027** – Construction complete.


City of Bondurant
Grant St
US HWY 65
Adams St SE
Lincoln St SE
15th Street
TSIP PROJECT EXTENTS
US HWY 65
Mud Creek
Amazon Distribution Warehouse
LEGEND
Park / Greenspace
Future Mixed Use Development
Mud Creek
Grant St
32nd St
SHIVEHATTERY
ARCHITECTURE + ENGINEERING
PHASE 1 CENTRAL DISTRICT CONCEPT
August 2024
SCALE IN FEET

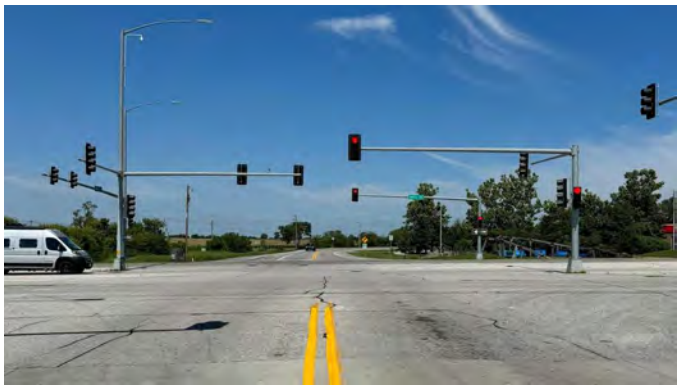
Proximity of the intersections of Grant Street & Hwy 65 and Grant Street & 15th Street SE Looking Southwest

Example center signal pole style at US 65 & Ziegler Drive. Similar style installed at intersections located at 32nd St SW and Shiloh Rose Pkwy

Proposed improvement for center poles and mast arms

Double mast arms add confusion and create visual clutter

West approach of Hwy 65 & Grant Street intersection. Looking East

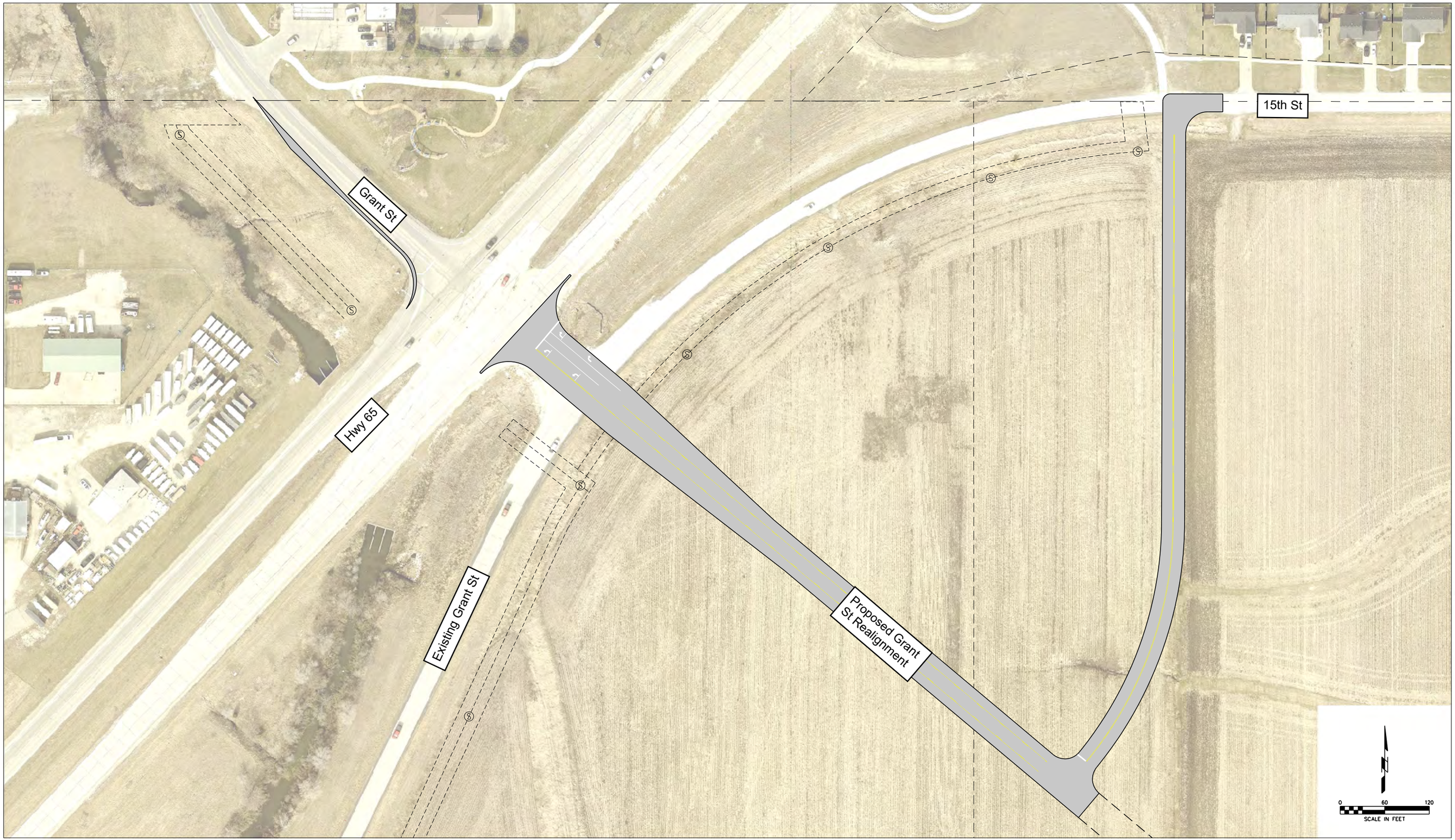


East approach of Hwy 65 & Grant Street intersection. Looking West

Proximity of the intersections of Grant Street & Hwy 65 and Grant Street & 15th Street SE Looking Northwest

Grant Street & 15th Street SE Intersection. Looking South

Grant Street & 15th Street SE Intersection. Looking North



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PLAN VIEW

GRANT STREET REALIGNMENT AT US HIGHWAY 65

BONDURANT, IA | 8/15/2024

City of Bondurant
Grant St
15th St
Proposed Project
Proposed Grant St Realignment
Hwy 65
Existing Grant St

Crash Severity	30
Fatal Crash	0
Suspected Serious Injury Crash	3
Suspected Minor Injury Crash	5
Possible/Unknown Injury Crash	8
Property Damage Only	14

Injury Status Summary	27
Fatalities	0
Suspected serious/incapacitating	5
Suspected minor/non-incapacitating	7
Possible (complaint of pain/injury)	14
Uninjured	0
Unknown	0
Not Reported	1

Property/Vehicles/Occupants	
Property Damage Total (dollars):	295,436.00
Average (per crash dollars):	9,847.87
Total Vehicles:	56.00
Average (per crash):	1.87
Total Occupants:	102.00
Average (per crash):	3.40

Average Severity	
Fatalities/Fatal Crash:	0.00
Fatalities/Crash:	0.00
Injuries/Crash:	0.87
Major Injuries/Crash:	0.17
Minor Injuries/Crash:	0.23
Possible/Unknown Injuries/Crash:	0.47

Major Cause			30
Animal	0	Ran traffic signal	5
Ran stop sign	1	Failed to yield to emergency vehicle	0
FTYROW: At uncontrolled intersection	0	FTYROW: Making right turn on red signal	0
FTYROW: From stop sign	0	FTYROW: From yield sign	0
FTYROW: Making left turn	2	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	4
Exceeded authorized speed	0	Improper or erratic lane changing	0
Operating vehicle in an reckless/erratic/care...	1	Followed too close	3
Passing: On wrong side	1	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	2
Driver Distraction: Manual operation of an e...	1	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	1	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	3
Unknown	5	Not reported	0
Other: No improper action	1		

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	3	1	0	1	0	0	0	0	0	5
Monday	0	0	1	0	0	0	1	0	2	1	0	0	0	5
Tuesday	0	0	0	0	0	0	0	1	1	0	0	0	0	2
Wednesday	0	0	0	1	0	0	2	1	2	0	0	0	0	6
Thursday	0	0	0	0	0	0	1	0	0	0	0	0	0	1
Friday	0	0	0	1	1	0	0	0	2	2	1	0	0	7
Saturday	0	0	0	0	0	2	0	2	0	0	0	0	0	4
Total	0	0	1	2	4	3	4	5	7	3	1	0	0	30

Manner of Crash Collision	**30**
Non-collision (single vehicle)	5
Head-on (front to front)	1
Rear-end (front to rear)	10
Angle (oncoming left turn)	2
Broadside (front to side)	7
Sideswipe (same direction)	2
Sideswipe (opposite direction)	0
Rear to rear	0
Rear to side	0
Not reported	0
Other	3
Unknown	0

Surface Conditions	**30**
Dry	21
Wet	6
Ice/frost	0
Snow	2
Slush	0
Mud/dirt	0
Water (standing or moving)	0
Sand	0
Oil	0
Gravel	1
Not reported	0
Other	0
Unknown	0

Fixed Object Struck			**56**
Bridge overhead structure	0	Bridge pier or support	0
Bridge/bridge rail parapet	0	Curb/island/raised median	0
Ditch	2	Embankment	0
Ground	1	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	1
Traffic signal support	1	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)	51

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	1	0	0	1
= 20	1	0	0	0	1
>= 21 and <= 24	1	1	0	0	2
>= 25 and <= 29	5	2	0	0	7
>= 30 and <= 34	2	2	0	0	4
>= 35 and <= 39	4	4	0	0	8
>= 40 and <= 44	1	1	0	0	2
>= 45 and <= 49	4	1	0	0	5
>= 50 and <= 54	1	1	0	0	2
>= 55 and <= 59	4	4	0	0	8
>= 60 and <= 64	2	3	0	0	5
>= 65 and <= 69	0	2	0	0	2
>= 70 and <= 74	1	4	0	0	5
>= 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	2	0	2
Total	27	27	2	0	56

Drug/Alcohol Related	30
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	30

Alcohol Test Given	56
None	54
Blood	0
Urine	0
Breath	0
Vitreous	0
Refused	0
Not reported	2

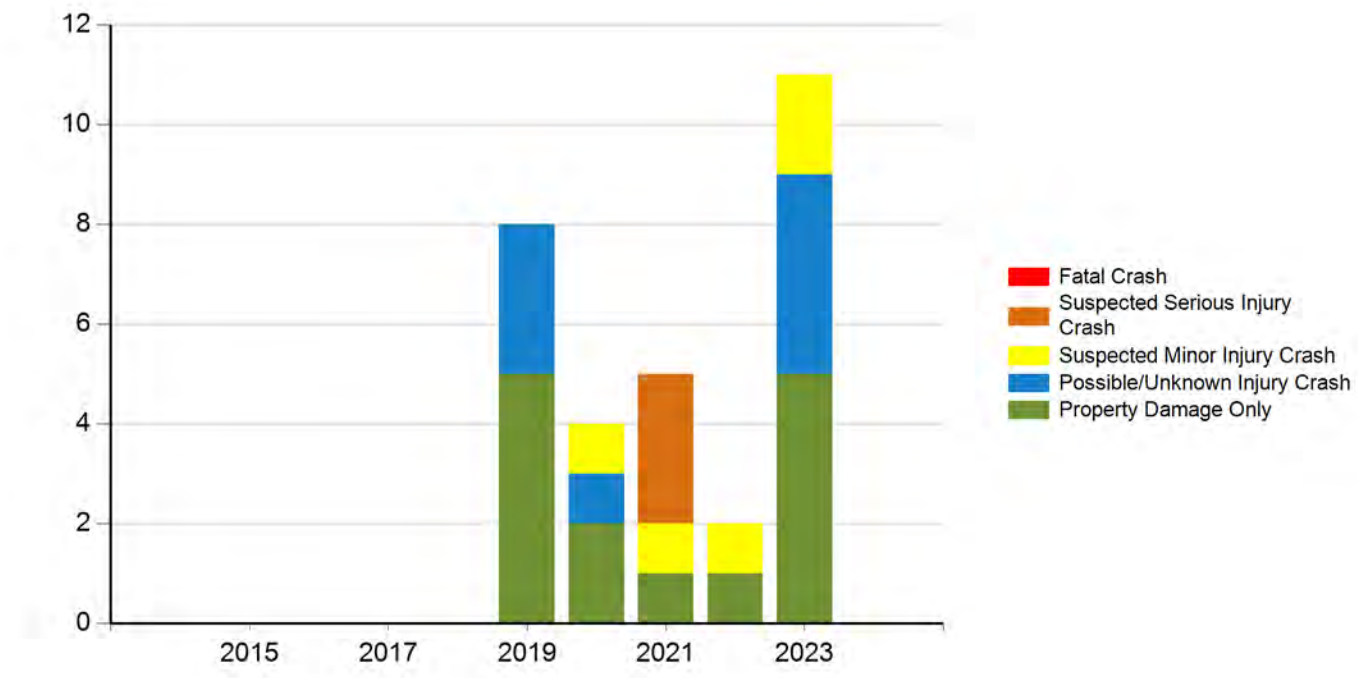
Drug Test Given	56
None	54
Blood	0
Urine	0
Breath	0
Vitreous	0
Refused	0
Not reported	2

Drug Test Result	56
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	56
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**
2014	0	0	0	0	0	0
2015	0	0	0	0	0	0
2016	0	0	0	0	0	0
2017	0	0	0	0	0	0
2018	0	0	0	0	0	0
2019	0	0	0	3	5	8
2020	0	0	1	1	2	4
2021	0	3	1	0	1	5
2022	0	0	1	0	1	2
2023	0	0	2	4	5	11
2024	0	0	0	0	0	0
Total	0	3	5	8	14	30

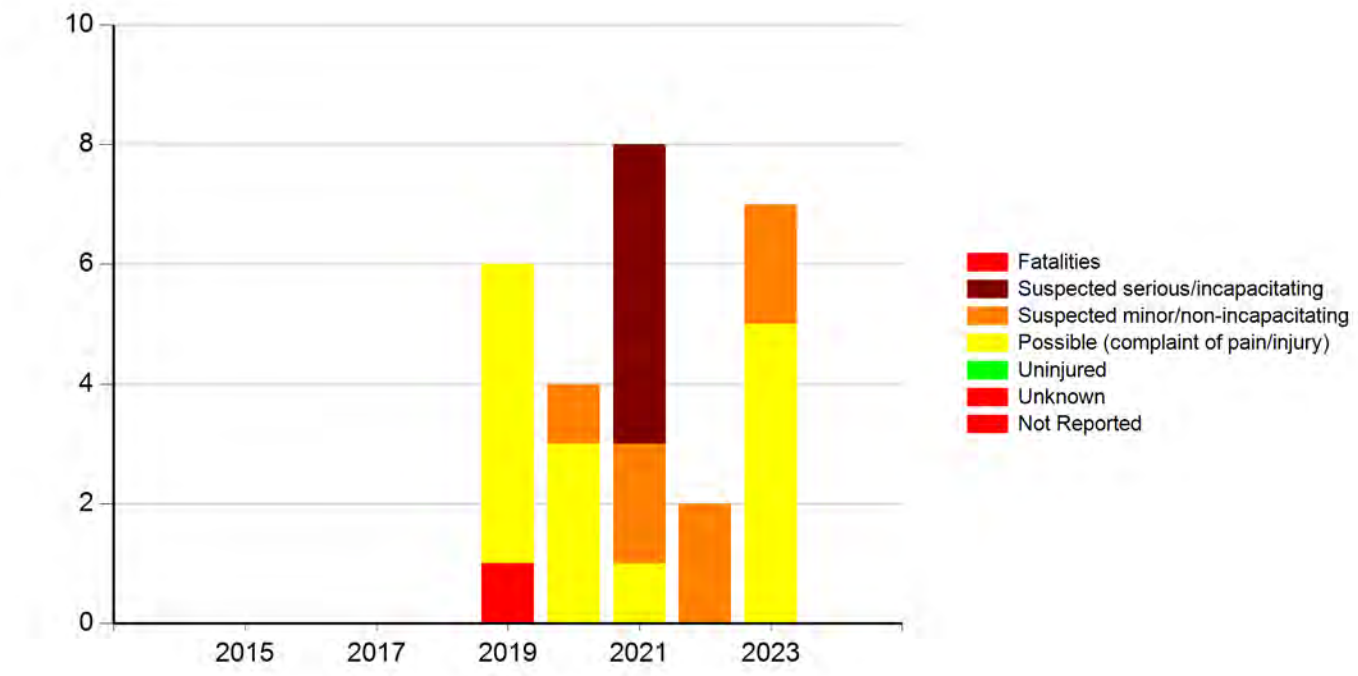
Severity/Year



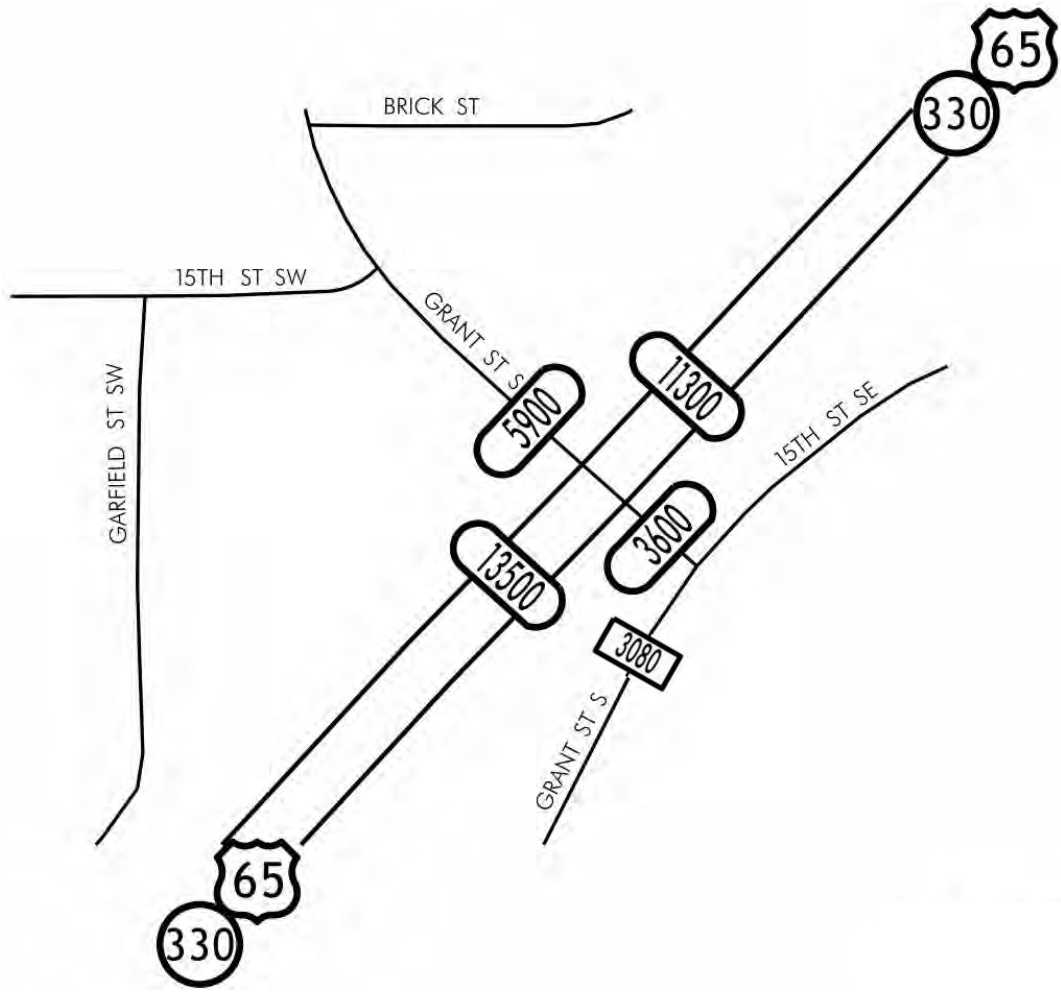
Injury Status - Annual

Crash Year	Fatalities	Suspected serious/incapacitating	Suspected minor/non-incapacitating	Possible (complaint of pain/injury)	Uninjured	Unknown	Not Reported	**Total**
2014	0	0	0	0	0	0	0	0
2015	0	0	0	0	0	0	0	0
2016	0	0	0	0	0	0	0	0
2017	0	0	0	0	0	0	0	0
2018	0	0	0	0	0	0	0	0
2019	0	0	0	5	0	0	1	6
2020	0	0	1	3	0	0	0	4
2021	0	5	2	1	0	0	0	8
2022	0	0	2	0	0	0	0	2
2023	0	0	2	5	0	0	0	7
2024	0	0	0	0	0	0	0	0
Total	0	5	7	14	0	0	1	27

Injury Status/Year



2016 Iowa DOT Traffic Counts



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PROPOSED TRAFFIC SIGNAL LAYOUT

GRANT STREET REALIGNMENT AT US HIGHWAY 65

BONDURANT, IA | 8/15/2024

Benefit Cost Analysis

The following benefit cost analysis was performed using the Crash Reduction Factor (CRF) Method with no customizations to the DOT default values. Upon review of the Iowa DOT planning-level CRF list, it was determined that the Crash Modification Factors (CMF) Clearinghouse would need to be utilized to find a CMF for the installation of turn lanes on the minor approach. The CMF "Install left-turn lane at signalized intersection" with the CMF ID of 8000 was selected. The CMF has a CRF of 20.1 and has a four-star rating. It was developed in scenarios similar to the intersection of US Highway 65 & Grant Street. It was determined using this CMF that the benefit cost ratio for this project is 2.83.

The following link contains the full detail sheet for CMF 8000:
https://www.cmfclearinghouse.org/detail.php?facid=8000

Star Quality Rating	
Star Quality Rating:	4 Stars

Crash Modification Factor (CMF)	
Value:	0.799
Adjusted Standard Error:	
Unadjusted Standard Error:	0.089

Crash Reduction Factor	
Value:	20.1
Adjusted Standard Error:	
Unadjusted Standard Error:	8.9

Information from CMF 8000 Detail Sheet

County:	Polk	Prepared By:	Shive-Hattery
Location:	Intersection of Hwy 65 & Grant Stree	Date Prepared:	8/15/2024
Proposed Improvements:	Installation of dedicated right and left turn lanes on EB and WB approaches of Hwy 65 & Grant Street Intersection. Signal improvements.		
Estimated Improvement Cost:	$ 2,528,000		
Inflation on Crash Costs:	4%	Annual Maintenance: (% of Improvement Cost)	2%
Discount Rate:	4%		
Estimated Service Life:	20	Annual Maintenance Cost:	$ 50,560

Method Choice: CRF Method

The Crash Reduction Factor (CRF) Method applies one to three CRFs to historical crashes to estimate reductions in future crashes. Crash Modification Factors (CMFs) can be converted to CRFs. For additional information, click the "Learn More" button.

Crash Reduction Factor (CRF) Method

Traffic Growth Factor:	1%
Number of CRFs:	1
Years of Crash History:	5

Combined CRF (Dominant Common Residuals Method)

Iowa DOT's preferred methodology for combining CRFs is Dominant Common Residuals, since it is more conservative than the other options.

	CRF 1:	Combined CRF	
CRF Value (%)	20.1	**20.1**	
Equivalent CMF	0.80		Is Dom. Com. Resd. Valid?
Combined CMF, if # used (DR)	0.80	0.80	TRUE
Combined CMF, if # used (Mult)	0.80		Is data entered before # CRF picked?
Pick Dom Com. Resd. Or Mult. Fo	0.80	0.80	FALSE

Crash Severity	Societal Costs	(Total):	above)	Annual Avg	Annually
Fatal (K)	$ 4,200,000	0	20.1	**0.00**	**0.00**
Serious Injury (A)	$ 4,200,000	3	20.1	**0.60**	**0.12**
Minor Injury (B)	$ 280,000	5	20.1	**1.00**	**0.20**
Possible/Unknown Injury (C)	$ 130,000	8	20.1	**1.60**	**0.32**
Property Damage Only (O)	$ 20,000	14	20.1	**2.80**	**0.56**

County:	Polk	Prepared By:	Shive-Hattery
Location:	Intersection of Hwy 65 & Grant Stree	Date Prepared:	8/15/2024

Crash Severity	Annual Societal Benefit
Fatal (K)	$ -
Serious Injury (A)	$ **506,520**
Minor Injury (B)	$ **56,280**
Possible/Unknown Injury (C)	$ **41,808**
Property Damage Only (O)	$ **11,256**

Predictive Method

Existing Condition (All Crashes):		Location Characteristics:	Please Select
Alternative (All Crashes):			Please Select
Percent Change in Crashes	**n/a**		Iowa Crash Distribution 2017-2021

Crash Severity	Distribution	Condition	Expected	Over Service	Annually
Fatal (K)	0.00%	0.00	0.00	**0.00**	**0.00**
Serious Injury (A)	0.00%	0.00	0.00	**0.00**	**0.00**
Minor Injury (B)	0.00%	0.00	0.00	**0.00**	**0.00**
Possible/Unknown Injury (C)	0.00%	0.00	0.00	**0.00**	**0.00**
Property Damage Only (O)	0.00%	0.00	0.00	**0.00**	**0.00**

Crash Severity	Societal Costs	Benefit
Fatal (K)	$ 4,200,000	$ -
Serious Injury (A)	$ 4,200,000	$ -
Minor Injury (B)	$ 280,000	$ -
Possible/Unknown Injury (C)	$ 130,000	$ -
Property Damage Only (O)	$ 20,000	$ -

Total Benefits and Costs

		Implementation Cost	$ 2,528,000
		Present Value of Maint.	$ 687,127
(Societal Benefits)	$ 9,096,746	(Impl. and Maint. Costs)	$ 3,215,127
Present Value Net Return	$ 5,881,619		
Benefit Cost Ratio	**2.83**		

Form continues on next page

County:	Polk	Prepared By:	Shive-Hattery
Location:	Intersection of Hwy 65 & Grant Stree	Date Prepared:	8/15/2024

No Input Necessary - No Custom Values In Use

General Customizations

No change to Crash Costs

No change to Discount Rate

No change to Maintenance Costs

Method-Specific Customizations

Application for SITE-SPECIFIC TSIP FUNDS

GENERAL INFORMATION **DATE:** August 9, 2024

Location / Title of Project IA 57 and Union Road Roundabout

Applicant City of Cedar Falls

Contact Person Chase Schrage Title Director of Public Works

Complete Mailing Address 2200 Technology Parkway
Cedar Falls, IA 50613

Phone 319-268-5170 (Area Code) E-Mail chase.schrage@cedarfalls.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) Iowa Department of Transportation – District 2

Contact Person Nick Humpal Title District Engineer

Complete Mailing Address 428 43rd Street SW
Mason City, IA 50401

Phone 641-422-9446 (Area Code) E-Mail nickolas.humpal@iowadot.us

PLEASE COMPLETE THE FOLLOWING PROJECT INFORMATION:

Funding Amount

Total Safety Cost	$	1,517,000
Total Project Cost	$	1,796,900
Safety Funds Requested	**$**	**500,000**

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
2017005473	IA 57/WEST 1ST ST and UNION RD	☐	☒	0.31	0.04
		☐	☐		

A

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 Cedar Falls

Signed: _____ 8/6/24
Signature — Date Signed

Danny Laudick, Mayor
Printed Name

Attest: _____ 8/6/24
Signature — Date Signed

Kim Kerr, City Clerk
Printed Name

A

RESOLUTION NO. 23,741

RESOLUTION AUTHORIZING THE CITY OF CEDAR FALLS, IOWA, TO MAKE AN APPLICATION TO THE IOWA DEPARTMENT OF TRANSPORTATION TRAFFIC SAFETY IMPROVEMENT PROGRAM (TSIP) FOR THE PARTIAL FUNDING OF THE HIGHWAY 57 AND UNION ROAD INTERSECTION IMPROVEMENTS, WHICH INCLUDES RECONSTRUCTING THE INTERSECTION AS A ROUNDABOUT.

WHEREAS, the Iowa Department of Transportation has established the TSIP and provides funding for locations where vehicular safety is a concern and documented; and

WHEREAS, said program allows for funding to be provided to local jurisdictions for eligible transportation projects or programs that will improve traffic safety at a specific site or corridor with a crash history; and

WHEREAS, the City of Cedar Falls has determined that by reconstructing the intersection of Highway 57 and Union Road as a roundabout will help reduce crashes, thus improving safety:

NOW THEREFORE, BE IT RESOLVED BY THE CITY COUNCIL OF THE CITY OF CEDAR FALLS, IOWA, THAT:

1. The City Council supports and approves the attached application for TSIP funding.
2. The City Council hereby commits the additional City funds necessary for construction of the project beyond any TSIP funding.
3. The City Council hereby commits to accepting and maintaining these improvements.
4. The Mayor is hereby authorized to execute the application on behalf of the City.

PASSED AND APPROVED this 5th day of August, 2024.

Daniel Laudick, Mayor

ATTEST:

Kim Kerr, CMC, City Clerk

Iowa State Highway 57 at Union Road Intersection Improvement Project

Existing Conditions

Iowa State Highway 57 (IA 57) runs east/west through the City of Cedar Falls and within the city limits it is classified as a principal arterial. West of Union Road, IA 57 is a two-lane rural highway that extends west for approximately 40 miles where it terminates at US Highway 65. East of Union Road, IA 57 has a three-lane urban cross section with one lane in each direction and a center two-way left-turn lane. It terminates at US Highway 218, approximately 3.5 miles east of Union Road. The posted speed limit is 50 MPH through the intersection with Union Road.

Union Road is a two-lane roadway with a rural cross-section to the north of IA 57 and is classified as a major collector with a posted speed limit of 50 MPH. To the south of IA 57 it is a two-lane roadway with an urban cross-section and is classified as a minor arterial with a posted speed limit of 45 MPH.

Traffic data collected in July 2024 found the following average daily traffic volumes:

- Iowa State Highway 57 – west of Union Road: 3,400 vehicles per day
- Iowa State Highway 57 – east of Union Road: 7,500 vehicles per day
- Union Road – north of Iowa State Highway 57: 3,200 vehicles per day
- Union Road – south of Iowa State Highway 57: 4,000 vehicles per day

IA 57 and Union Road is a rural four-leg intersection in the northwest part of Cedar Falls near the city limits. IA 57 and Union Road transition from rural to urban through the intersection, with the speed limit on IA 57 transitioning from 55 MPH to 50 MPH just west of the intersection. IA 57 and Union Road has two-way stop control with north/south traffic on Union Road stopping for east/west traffic on IA 57. IA 57 has dedicated left and right turn lanes at the intersection, while Union Road has no turn lanes on either approach.

Starting in 2014, the following traffic safety improvements have been implemented at the intersection:

- Advance Warning signs and amber flashing beacons on IA 57 eastbound and westbound.
- Pedestrian/Bicycle and Crossing Ahead supplemental signs on IA 57 in advance of the intersection; and crossing diagonal left down arrows at the crosswalk.
- “Cross Traffic Does Not Stop” signs below the Union Road stop signs.
- Repainted the crosswalk pavement markings.
- Relocated stop bars on Union Road closer to the travel lane of Hwy 57.
- Clearing and grubbing of trees/shrubs/foliage multiple times in the southeast and northwest quadrants to help improve sight distance.
- The addition of conspicuity tape to stop signs and advanced warning signs in all directions.
- Updated existing red flags to current design standards on speed limit signs.

Additional background information and a statement of support from the Iowa DOT District 2 can be found at this link.

Crash History

There were nine reported crashes from January 2019 through December 2023 that included one serious injury crash, one minor injury crash, and seven property damage only crashes. The identified crash types were five broadside, two single vehicle, one angle (oncoming left-turn), and

one other/unknown. The broadside and angle (oncoming left-turn) crashes are correctable crashes with changes to the intersection traffic control.

Proposed Improvements

With all the traffic safety improvements listed above, severe crashes continue to happen at the intersection of IA 57 and Union Road. The proposed improvement for the intersection is to construct a single lane roundabout, which will require a small amount of right-of-way in the northwest quadrant of the intersection. The roundabout will be designed to national standards and best practices as identified in NCHRP Report 1043: Guide for Roundabouts. A pedestrian crossing on the east leg of the intersection will be included, as well as street lighting meeting best practices and recommendations from the Illuminating Engineering Society Recommended Practice: Lighting Roadway and Parking Facilities (RP-8-22).

The project is expected to significantly improve safety at the intersection. With a roundabout, speeds will be significantly reduced, and crash types that lead to injury crashes will be significantly reduced or eliminated. When crashes do occur at a roundabout, they are normally less severe sideswipe crashes resulting in only property damage. Two-thirds of the crashes that have occurred at the intersection over the last five years are correctable with the installation of a roundabout. Crash reduction factor number US-60 with a value of 65 was used for the benefit-cost analysis, which results in a benefit-cost ratio of 5.74.

Foth

Conceptual Cost Estimate
IA 57 and Union Rd Roundabout
Cedar Falls, Iowa
TSIP Application

C·E·D·A·R F·A·L·L·S Iowa

ITEM NO.		ITEM DESCRIPTION	UNIT	QUANTITY	UNIT PRICE	TOTAL
		MOBILIZATION	LS	1	$50,000.00	$ 50,000.00
		TOPSOIL	CY	1,000	$12.00	$ 12,000.00
		EXCAVATION	CY	2,500	$6.00	$ 15,000.00
		MODIFIED SUBBASE	CY	3,645	$45.00	$ 164,025.00
		REMOVALS	LS	1	$5,000.00	$ 5,000.00
		STORM SEWER	LS	1	$150,000.00	$ 150,000.00
		PAVEMENT, PCC	SY	10,900	$60.00	$ 654,000.00
		MEDIAN, PCC	SY	2,800	$55.00	$ 154,000.00
		SHARED USE PATH, PCC, 6 IN.	SY	1,000	$55.00	$ 55,000.00
		TRAFFIC CONTROL	LS	1	$25,000.00	$ 25,000.00
		LIGHTING	LS	1	$35,000.00	$ 35,000.00
SUBTOTAL CONSTRUCTION COSTS (SAFETY RELATED)						**$1,319,025.00**
		LANDSCAPING	LS	1	$200,000.00	$ 200,000.00
SUBTOTAL CONSTRUCTION COSTS (NON-SAFETY RELATED)						**$200,000.00**
SUBTOTAL CONSTRUCTION COSTS						**$1,519,025.00**
		CONTINGENCY - SAFETY RELATED (15%)				$197,854.00
		CONTINGENCY - NON-SAFETY RELATED (15%)				$30,000.00
TOTAL ROAD CONSTRUCTION COSTS						**$1,746,900.00**
RIGHT-OF-WAY ACQUISITION COSTS						$50,000.00
TOTAL PROJECT COSTS						**$1,796,900.00**

Unit prices based on average Iowa DOT bid prices

Remainder of project costs after the TSIP funding will be split 50% each between the City of Cedar Falls and the Iowa Department of Transportation District 2

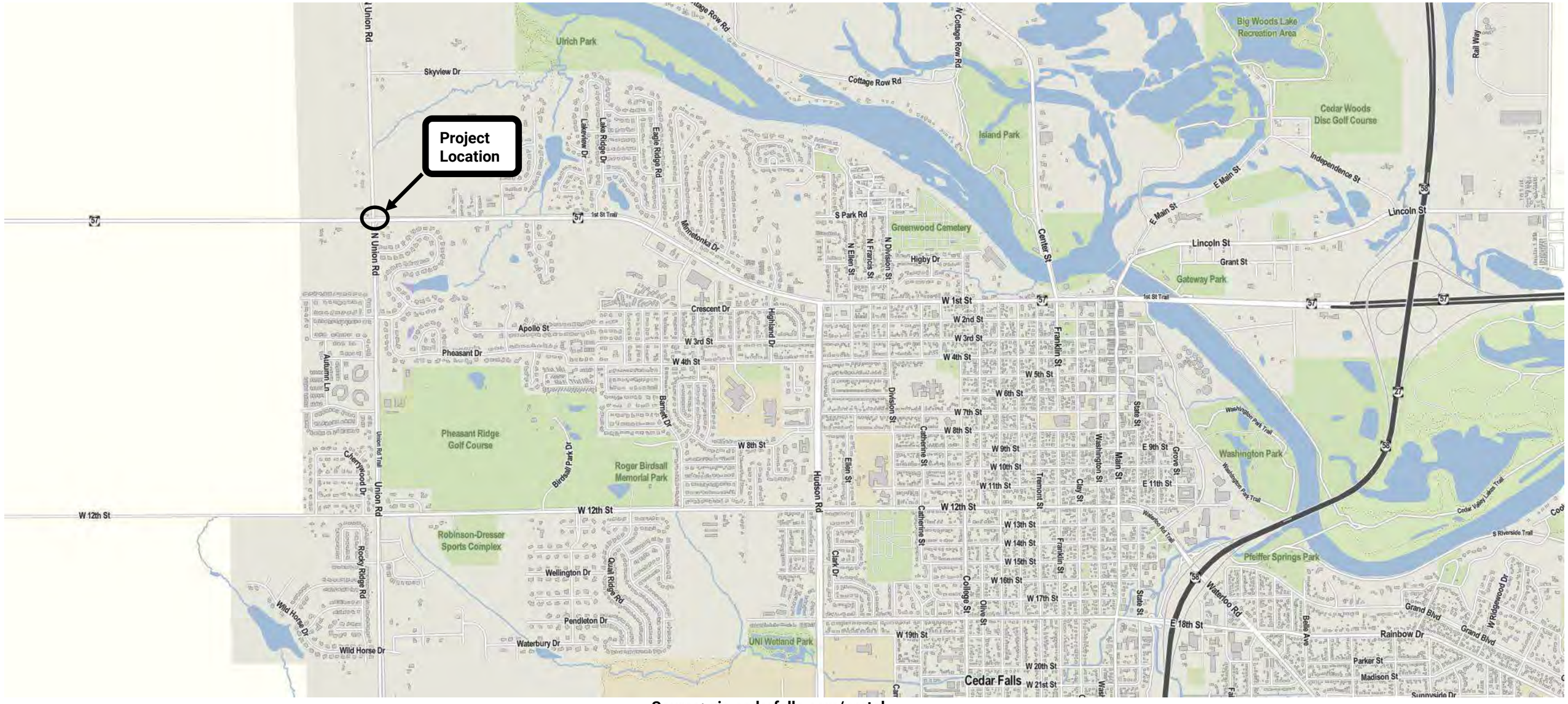
D

Time Schedule for Proposed Project

IA 57 and Union Road Intersection Improvements

August 15, 2024	TSIP Application Submittal Deadline
August 26, 2024	Proceed with Desing Improvements
January 17, 2025	TSIP Approval
November 18, 2025	Project Letting
April 6, 2026	Project Construction Start
December 31, 2026	Project Construction Completion

Project Location Map



Source: gis.cedarfalls.com/portal

Project Site Pictures

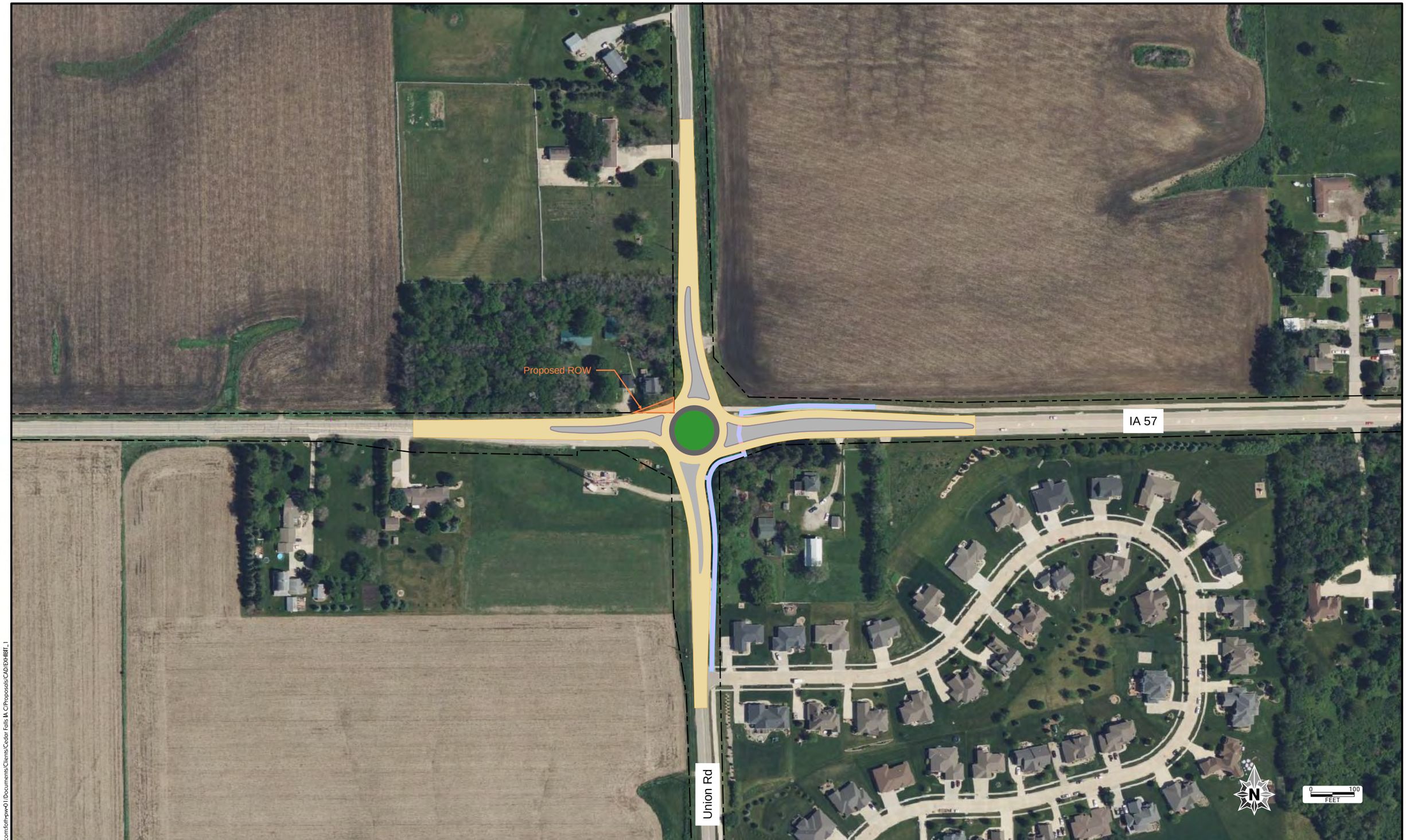
View of the Intersection from the south

View of the Intersection from the north

View of the Intersection from the east

View of the Intersection from the west

G



CLIENT PROJECT NO: CLIENT PROJECT NUMBER	FOTH PROJECT NO: 0020F000.00		
DESIGNED BY:	CHECKED BY:	DRAWN BY:	
LETTING DATE: MONTH YEAR	CAD DATE: 7/23/2024	2:52:02 PM	
CAD FILE: c:\pw_workdir\pw_ie\fvd_nckid07506641\EXHIBIT_1.dgn			

NO	DATE	BY	REVISION DESCRIPTION

Foth

W. First St (IA 57) and Union Rd Roundabout Concept 2023

SUBJECT TO CHANGE

SHEET NO.

pw://foth-pw.bentley.com:foth-pw-01\Documents\Clients\Cedar Falls IA C\Proposals\CAD\EXHIBIT_1

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H

City of Cedar Falls
Iowa DOT

NO	DATE	BY	REVISION DESCRIPTION

Foth

Aerial Photograph

SUBJECT TO CHANGE

SHEET NO.

pw://foth-pw.bentley.com:foth-pw-01/Documents/Clients/Cedar Falls IA C/Proposals/CAD/EXHIBIT_2.dgn

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Iowa Crash Analysis Tool
Quick Report
2019-2023

Crash Severity	9
Fatal Crash	0
Suspected Serious Injury Crash	1
Suspected Minor Injury Crash	1
Possible/Unknown Injury Crash	0
Property Damage Only	7

Injury Status Summary	11
Fatalities	0
Suspected serious/incapacitating	5
Suspected minor/non-incapacitating	3
Possible (complaint of pain/injury)	2
Uninjured	0
Unknown	0
Not Reported	1

Property/Vehicles/Occupants	
Property Damage Total (dollars):	104,300.00
Average (per crash dollars):	11,588.89
Total Vehicles:	17.00
Average (per crash):	1.89
Total Occupants:	28.00
Average (per crash):	3.11

Average Severity	
Fatalities/Fatal Crash:	0.00
Fatalities/Crash:	0.00
Injuries/Crash:	1.11
Major Injuries/Crash:	0.56
Minor Injuries/Crash:	0.33
Possible/Unknown Injuries/Crash:	0.22

Major Cause			9
Animal	1	Ran traffic signal	0
Ran stop sign	4	Failed to yield to emergency vehicle	0
FTYROW: At uncontrolled intersection	0	FTYROW: Making right turn on red signal	0
FTYROW: From stop sign	1	FTYROW: From yield sign	0
FTYROW: Making left turn	1	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	0
Exceeded authorized speed	0	Improper or erratic lane changing	0
Operating vehicle in an reckless/erratic/care...	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	2
Unknown	0	Not reported	0
Other: No improper action	0		

Iowa Crash Analysis Tool
Quick Report
2019-2023

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	0	0	0	0	0	0	0	0	0	0	0
Tuesday	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Wednesday	0	0	0	0	0	0	3	0	0	0	0	0	0	3
Thursday	0	0	0	0	0	0	0	0	1	0	0	0	0	1
Friday	1	0	0	0	0	0	0	0	0	0	1	0	0	2
Saturday	0	0	0	0	0	2	0	1	0	0	0	0	0	3
Total	1	0	0	0	0	2	3	1	1	0	1	0	0	9

Manner of Crash Collision	**9**
Non-collision (single vehicle)	2
Head-on (front to front)	0
Rear-end (front to rear)	0
Angle (oncoming left turn)	1
Broadside (front to side)	5
Sideswipe (same direction)	0
Sideswipe (opposite direction)	0
Rear to rear	0
Rear to side	0
Not reported	0
Other	1
Unknown	0

Surface Conditions	**9**
Dry	8
Wet	0
Ice/frost	0
Snow	0
Slush	0
Mud/dirt	0
Water (standing or moving)	0
Sand	0
Oil	0
Gravel	0
Not reported	1
Other	0
Unknown	0

Fixed Object Struck			**17**
Bridge overhead structure	0	Bridge pier or support	0
Bridge/bridge rail parapet	0	Curb/island/raised median	0
Ditch	0	Embankment	2
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	1
Wall	0	Building	0
Other fixed object	0	None (no fixed object struck)	14

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	0	2	0	0	2
= 18	0	0	0	0	0
= 19	0	0	0	0	0
= 20	0	0	0	0	0
>= 21 and <= 24	1	1	0	0	2
>= 25 and <= 29	1	0	0	0	1
>= 30 and <= 34	0	1	0	0	1
>= 35 and <= 39	0	1	0	0	1
>= 40 and <= 44	2	0	0	0	2
>= 45 and <= 49	0	1	0	0	1
>= 50 and <= 54	0	0	0	0	0
>= 55 and <= 59	1	2	0	0	3
>= 60 and <= 64	0	1	0	0	1
>= 65 and <= 69	1	0	0	0	1
>= 70 and <= 74	1	1	0	0	2
>= 75 and <= 79	0	0	0	0	0
>= 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	0	0	0
Total	7	10	0	0	17

Drug/Alcohol Related	9
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	9

Alcohol Test Given	17
None	17
Blood	0
Urine	0
Breath	0
Vitreous	0
Refused	0
Not reported	0

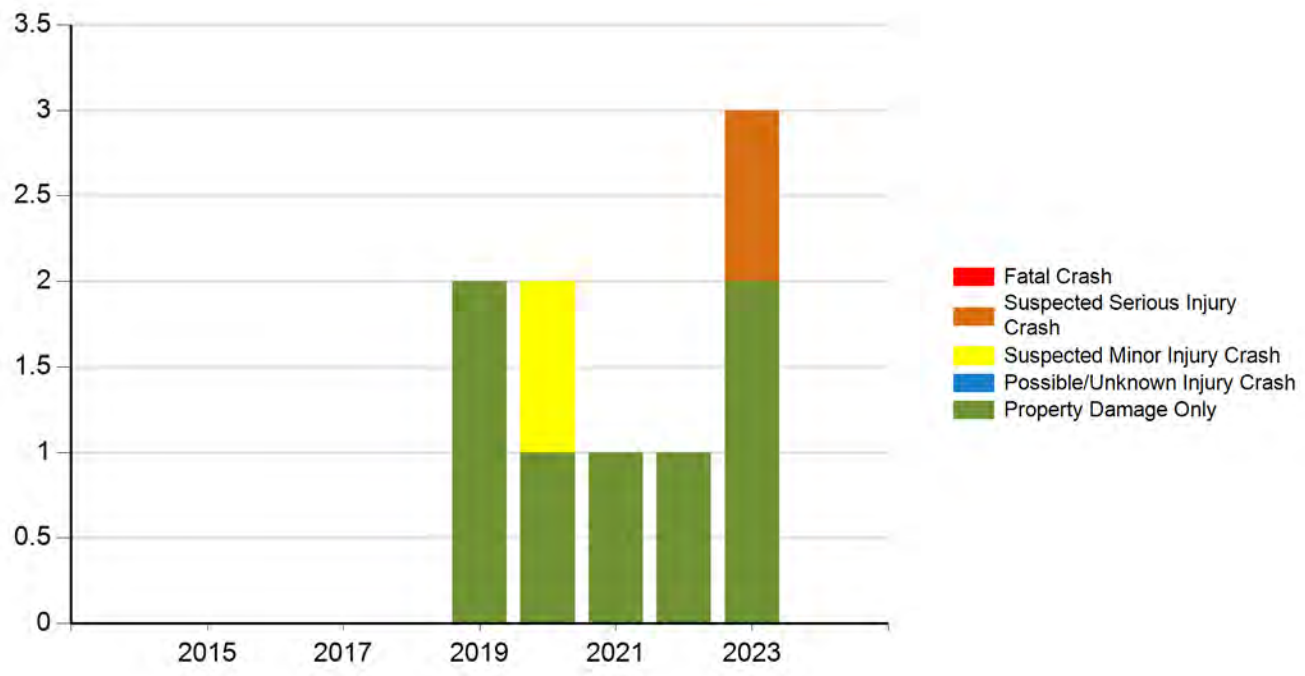
Drug Test Given	17
None	17
Blood	0
Urine	0
Breath	0
Vitreous	0
Refused	0
Not reported	0

Drug Test Result	17
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	17
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**
2014	0	0	0	0	0	0
2015	0	0	0	0	0	0
2016	0	0	0	0	0	0
2017	0	0	0	0	0	0
2018	0	0	0	0	0	0
2019	0	0	0	0	2	2
2020	0	0	1	0	1	2
2021	0	0	0	0	1	1
2022	0	0	0	0	1	1
2023	0	1	0	0	2	3
2024	0	0	0	0	0	0
Total	0	1	1	0	7	9

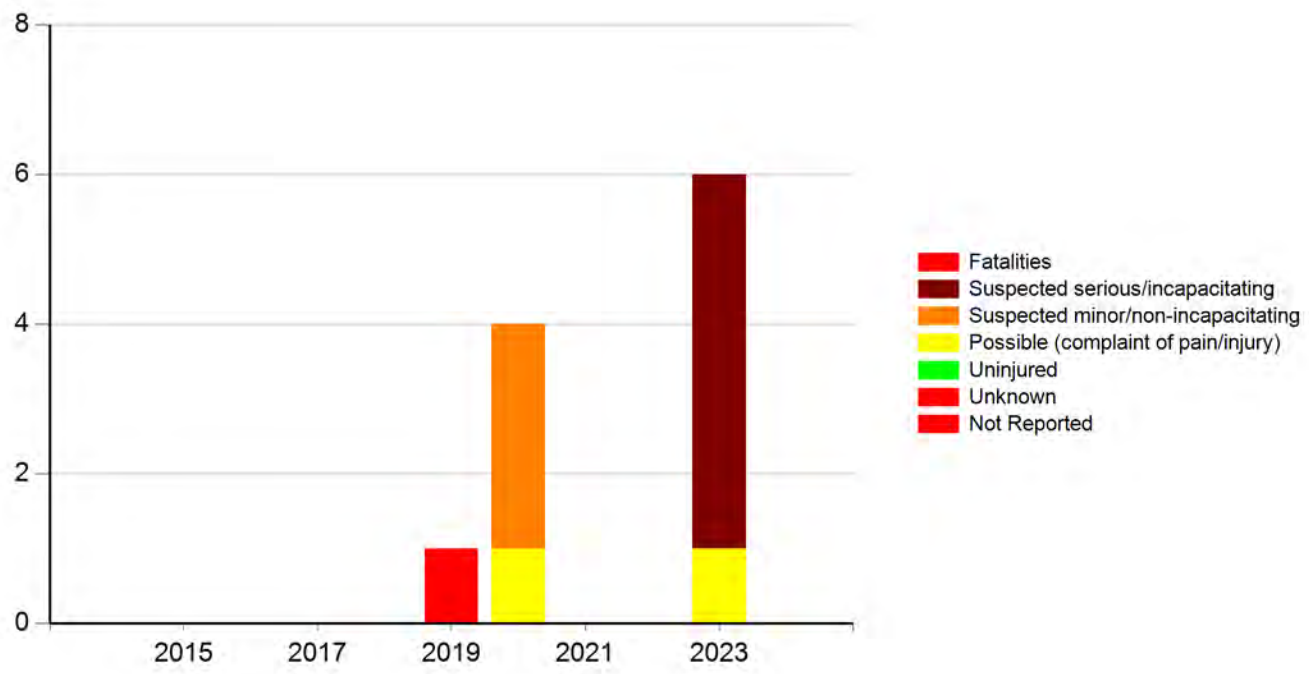
Severity/Year



Injury Status - Annual

Crash Year	Fatalities	Suspected serious/incapacitating	Suspected minor/non-incapacitating	Possible (complaint of pain/injury)	Uninjured	Unknown	Not Reported	**Total**
2014	0	0	0	0	0	0	0	0
2015	0	0	0	0	0	0	0	0
2016	0	0	0	0	0	0	0	0
2017	0	0	0	0	0	0	0	0
2018	0	0	0	0	0	0	0	0
2019	0	0	0	0	0	0	1	1
2020	0	0	3	1	0	0	0	4
2021	0	0	0	0	0	0	0	0
2022	0	0	0	0	0	0	0	0
2023	0	5	0	1	0	0	0	6
2024	0	0	0	0	0	0	0	0
Total	0	5	3	2	0	0	1	11

Injury Status/Year



Foth Infrastructure & Environment, LLC

411 6th Avenue SE, Suite 400
Cedar Rapids, IA 52401

J

File Name : Iowa State Highway 57 at Union Road_07-11-2024
Site Code :
Start Date : 7/11/2024
Page No : 1

IA 57 at Union Road
Cedar Falls, IA

Groups Printed- Lights - Mediums - Articulated Trucks - Pedestrians

	Union Road Southbound					IA 57 Westbound					Union Road Northbound					IA 57 Eastbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
12:00 AM	0	0	0	0	0	0	2	1	0	3	0	0	0	0	0	0	0	0	0	0	3
12:15 AM	2	0	0	0	2	0	1	1	0	2	0	0	1	0	1	0	1	0	0	1	6
12:30 AM	2	0	0	0	2	1	1	0	0	2	0	0	1	0	1	0	1	0	0	1	6
12:45 AM	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0	0	0	2	0	2	3
Total	4	0	0	0	4	2	4	2	0	8	0	0	2	0	2	0	2	2	0	4	18
01:00 AM	2	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2
01:15 AM	2	1	0	0	3	0	0	0	0	0	0	0	0	0	0	0	1	1	0	2	5
01:30 AM	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	1	0	0	1	2
01:45 AM	1	0	0	0	1	0	2	0	0	2	0	0	0	0	0	0	0	0	0	0	3
Total	5	1	0	0	6	0	3	0	0	3	0	0	0	0	0	0	2	1	0	3	12
02:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	0	2	0	0	2	3
02:15 AM	0	1	1	0	2	0	1	0	0	1	0	0	0	0	0	0	1	0	0	1	4
02:30 AM	1	1	0	0	2	0	4	0	0	4	0	1	1	0	2	0	1	0	0	1	9
02:45 AM	0	1	0	0	1	0	0	0	0	0	1	1	0	0	2	0	3	0	0	3	6
Total	1	3	1	0	5	0	5	0	0	5	1	2	2	0	5	0	7	0	0	7	22
03:00 AM	0	0	1	0	1	0	0	2	0	2	0	0	1	0	1	0	0	0	0	0	4
03:15 AM	2	3	0	0	5	0	7	2	0	9	0	0	1	0	1	0	1	0	0	1	16
03:30 AM	1	3	0	0	4	1	2	7	0	10	0	0	3	0	3	1	6	0	0	7	24
03:45 AM	2	1	0	0	3	1	4	1	0	6	0	1	2	0	3	1	8	1	0	10	22
Total	5	7	1	0	13	2	13	12	0	27	0	1	7	0	8	2	15	1	0	18	66
04:00 AM	2	1	0	0	3	1	1	4	1	7	0	0	2	0	2	0	13	0	0	13	25
04:15 AM	0	1	1	0	2	1	2	1	0	4	0	0	4	0	4	0	15	2	0	17	27
04:30 AM	10	4	0	1	15	4	4	7	0	15	0	3	9	0	12	1	35	1	0	37	79
04:45 AM	3	3	0	0	6	3	4	6	0	13	1	0	4	0	5	0	27	1	0	28	52
Total	15	9	1	1	26	9	11	18	1	39	1	3	19	0	23	1	90	4	0	95	183
05:00 AM	7	7	0	1	15	5	6	1	0	12	1	0	13	0	14	0	21	2	0	23	64
05:15 AM	10	6	0	0	16	3	9	7	0	19	3	3	12	0	18	0	38	2	0	40	93
05:30 AM	14	4	0	0	18	7	10	2	2	21	1	5	15	0	21	0	30	5	0	35	95
05:45 AM	13	6	2	0	21	14	9	7	1	31	2	6	18	0	26	2	39	7	0	48	126
Total	44	23	2	1	70	29	34	17	3	83	7	14	58	0	79	2	128	16	0	146	378
06:00 AM	14	9	0	0	23	6	13	12	2	33	2	1	23	0	26	0	34	2	0	36	118
06:15 AM	21	7	1	0	29	11	19	1	1	32	1	11	18	0	30	0	33	8	0	41	132
06:30 AM	24	9	0	0	33	10	19	4	2	35	1	11	16	0	28	1	53	1	0	55	151

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Groups Printed- Lights - Mediums - Articulated Trucks - Pedestrians

	Union Road Southbound					IA 57 Westbound					Union Road Northbound					IA 57 Eastbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
06:45 AM	21	12	1	0	34	6	16	14	1	37	1	4	28	0	33	1	35	5	0	41	145
Total	80	37	2	0	119	33	67	31	6	137	5	27	85	0	117	2	155	16	0	173	546
07:00 AM	14	6	0	0	20	10	22	8	0	40	1	7	23	0	31	2	28	3	0	33	124
07:15 AM	20	11	1	0	32	13	13	11	0	37	1	4	19	0	24	0	21	4	0	25	118
07:30 AM	16	7	0	0	23	12	13	7	3	35	0	5	21	0	26	0	21	1	0	22	106
07:45 AM	13	6	1	0	20	18	11	9	1	39	2	6	14	0	22	0	24	2	0	26	107
Total	63	30	2	0	95	53	59	35	4	151	4	22	77	0	103	2	94	10	0	106	455
08:00 AM	7	11	0	0	18	18	15	10	1	44	4	5	21	0	30	2	21	3	0	26	118
08:15 AM	13	5	0	0	18	8	11	9	0	28	1	8	18	0	27	1	15	2	0	18	91
08:30 AM	17	13	0	0	30	10	13	8	1	32	2	11	19	0	32	0	29	2	0	31	125
08:45 AM	15	10	0	0	25	13	17	17	0	47	5	5	20	0	30	2	19	5	0	26	128
Total	52	39	0	0	91	49	56	44	2	151	12	29	78	0	119	5	84	12	0	101	462
09:00 AM	6	6	0	0	12	12	22	10	1	45	3	10	18	0	31	0	18	1	0	19	107
09:15 AM	16	10	0	0	26	18	23	20	3	64	1	7	20	0	28	0	27	0	0	27	145
09:30 AM	15	6	1	0	22	14	13	16	0	43	0	10	18	0	28	0	19	7	0	26	119
09:45 AM	11	9	1	0	21	16	18	13	0	47	3	6	13	0	22	1	36	2	0	39	129
Total	48	31	2	0	81	60	76	59	4	199	7	33	69	0	109	1	100	10	0	111	500
10:00 AM	12	8	1	0	21	19	25	14	0	58	2	10	19	0	31	1	15	3	0	19	129
10:15 AM	10	4	0	0	14	16	14	11	0	41	2	11	26	0	39	0	19	0	0	19	113
10:30 AM	9	3	0	0	12	28	18	17	0	63	1	4	27	0	32	0	22	4	0	26	133
10:45 AM	13	12	0	0	25	14	14	23	0	51	1	13	17	0	31	2	20	2	0	24	131
Total	44	27	1	0	72	77	71	65	0	213	6	38	89	0	133	3	76	9	0	88	506
11:00 AM	20	11	0	0	31	30	29	21	1	81	7	11	24	0	42	0	21	1	0	22	176
11:15 AM	16	5	1	0	22	27	24	20	1	72	1	13	16	0	30	1	15	3	0	19	143
11:30 AM	13	11	0	0	24	23	26	25	0	74	3	20	29	0	52	0	31	3	0	34	184
11:45 AM	20	5	0	0	25	29	23	21	0	73	1	15	25	0	41	1	20	1	0	22	161
Total	69	32	1	0	102	109	102	87	2	300	12	59	94	0	165	2	87	8	0	97	664
12:00 PM	15	9	0	0	24	19	13	22	0	54	3	12	18	0	33	0	23	4	0	27	138
12:15 PM	15	9	1	0	25	30	26	27	0	83	5	13	19	0	37	2	20	1	0	23	168
12:30 PM	13	6	0	0	19	19	17	20	1	57	1	9	28	0	38	0	23	4	0	27	141
12:45 PM	17	7	2	0	26	26	24	16	0	66	4	14	20	0	38	0	20	2	0	22	152
Total	60	31	3	0	94	94	80	85	1	260	13	48	85	0	146	2	86	11	0	99	599
01:00 PM	13	10	0	0	23	20	30	22	0	72	2	12	10	0	24	0	28	0	0	28	147
01:15 PM	14	15	0	0	29	25	20	14	0	59	3	8	23	0	34	0	18	3	0	21	143
01:30 PM	13	14	1	0	28	25	31	19	2	77	3	10	15	0	28	1	14	3	0	18	151
01:45 PM	21	10	2	0	33	17	27	27	0	71	4	12	13	0	29	0	24	3	0	27	160
Total	61	49	3	0	113	87	108	82	2	279	12	42	61	0	115	1	84	9	0	94	601

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Groups Printed- Lights - Mediums - Articulated Trucks - Pedestrians

	Union Road Southbound					IA 57 Westbound					Union Road Northbound					IA 57 Eastbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
02:00 PM	14	11	3	0	28	15	36	23	0	74	5	18	21	0	44	0	21	1	0	22	168
02:15 PM	17	12	1	0	30	21	28	23	1	73	6	7	23	0	36	0	31	3	0	34	173
02:30 PM	18	18	1	0	37	26	32	16	3	77	2	9	29	0	40	2	25	4	0	31	185
02:45 PM	16	11	1	0	28	36	45	15	0	96	6	9	24	0	39	2	29	2	0	33	196
Total	65	52	6	0	123	98	141	77	4	320	19	43	97	0	159	4	106	10	0	120	722
03:00 PM	15	11	1	0	27	29	47	26	1	103	6	19	22	0	47	0	17	2	0	19	196
03:15 PM	9	15	3	0	27	32	45	20	2	99	0	15	22	0	37	0	27	5	0	32	195
03:30 PM	12	15	2	0	29	29	49	24	3	105	4	12	27	0	43	1	22	2	0	25	202
03:45 PM	16	13	0	0	29	31	52	21	3	107	5	8	29	0	42	0	27	5	0	32	210
Total	52	54	6	0	112	121	193	91	9	414	15	54	100	0	169	1	93	14	0	108	803
04:00 PM	16	5	0	0	21	24	40	35	1	100	2	9	23	0	34	2	22	5	0	29	184
04:15 PM	26	20	0	0	46	33	42	16	0	91	6	14	25	0	45	2	23	1	0	26	208
04:30 PM	16	9	1	0	26	33	29	16	0	78	3	8	19	0	30	0	29	3	0	32	166
04:45 PM	10	4	0	0	14	27	21	23	0	71	7	10	22	0	39	1	16	1	0	18	142
Total	68	38	1	0	107	117	132	90	1	340	18	41	89	0	148	5	90	10	0	105	700
05:00 PM	15	8	1	0	24	14	20	17	0	51	1	8	17	0	26	0	20	0	0	20	121
05:15 PM	7	10	1	0	18	18	25	20	0	63	2	4	15	0	21	1	16	2	0	19	121
05:30 PM	17	12	2	0	31	14	27	17	0	58	3	8	20	0	31	1	19	4	0	24	144
05:45 PM	9	4	2	0	15	17	19	12	0	48	3	2	16	0	21	1	26	1	0	28	112
Total	48	34	6	0	88	63	91	66	0	220	9	22	68	0	99	3	81	7	0	91	498
06:00 PM	11	8	1	0	20	18	14	12	0	44	4	6	9	0	19	0	13	2	0	15	98
06:15 PM	10	8	0	0	18	18	22	18	0	58	1	5	19	0	25	0	7	4	0	11	112
06:30 PM	12	8	1	0	21	19	20	9	1	49	3	4	15	0	22	0	10	2	0	12	104
06:45 PM	12	4	1	0	17	15	24	17	1	57	4	8	9	0	21	0	10	3	0	13	108
Total	45	28	3	0	76	70	80	56	2	208	12	23	52	0	87	0	40	11	0	51	422
07:00 PM	11	5	1	0	17	12	26	10	0	48	3	8	5	0	16	0	6	2	0	8	89
07:15 PM	12	5	0	0	17	17	11	8	0	36	2	6	9	0	17	0	10	1	0	11	81
07:30 PM	9	9	0	0	18	11	14	20	0	45	2	2	9	0	13	0	11	0	0	11	87
07:45 PM	6	11	1	0	18	12	10	5	0	27	2	5	5	0	12	1	6	1	0	8	65
Total	38	30	2	0	70	52	61	43	0	156	9	21	28	0	58	1	33	4	0	38	322
08:00 PM	8	4	0	0	12	10	21	6	0	37	3	4	12	0	19	1	11	3	0	15	83
08:15 PM	9	3	0	0	12	15	19	11	0	45	6	5	9	0	20	0	9	0	0	9	86
08:30 PM	14	11	0	0	25	9	19	8	0	36	0	5	5	0	10	0	5	3	0	8	79
08:45 PM	7	4	0	0	11	15	7	3	0	25	0	1	4	0	5	0	11	0	0	11	52
Total	38	22	0	0	60	49	66	28	0	143	9	15	30	0	54	1	36	6	0	43	300
09:00 PM	4	4	0	0	8	14	10	5	0	29	3	3	3	0	9	0	7	3	0	10	56

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Groups Printed- Lights - Mediums - Articulated Trucks - Pedestrians

	Union Road Southbound					IA 57 Westbound					Union Road Northbound					IA 57 Eastbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
09:15 PM	2	0	0	0	2	8	8	3	0	19	2	3	4	0	9	0	2	0	0	2	32
09:30 PM	3	2	0	0	5	10	2	2	0	14	0	2	3	0	5	0	2	0	0	2	26
09:45 PM	2	2	0	0	4	2	1	2	0	5	0	1	1	0	2	0	1	0	0	1	12
Total	11	8	0	0	19	34	21	12	0	67	5	9	11	0	25	0	12	3	0	15	126
10:00 PM	1	3	0	0	4	1	4	1	0	6	0	0	2	0	2	0	3	0	0	3	15
10:15 PM	4	2	0	0	6	1	2	2	0	5	1	2	1	0	4	1	4	0	0	5	20
10:30 PM	1	1	0	0	2	3	5	1	0	9	0	1	0	0	1	0	0	0	0	0	12
10:45 PM	0	4	0	0	4	3	4	0	0	7	0	0	1	0	1	0	1	1	0	2	14
Total	6	10	0	0	16	8	15	4	0	27	1	3	4	0	8	1	8	1	0	10	61
11:00 PM	1	0	0	0	1	2	1	2	0	5	0	1	2	0	3	0	0	0	0	0	9
11:15 PM	3	1	0	0	4	0	4	0	0	4	0	0	0	0	0	0	1	0	0	1	9
11:30 PM	1	0	0	0	1	1	4	0	0	5	0	0	0	0	0	0	0	0	0	0	6
11:45 PM	4	0	0	0	4	1	1	2	0	4	0	0	2	0	2	0	2	0	0	2	12
Total	9	1	0	0	10	4	10	4	0	18	0	1	4	0	5	0	3	0	0	3	36
Grand Total	931	596	43	2	1572	1220	1499	1008	41	3768	177	550	1209	0	1936	39	1512	175	0	1726	9002
Apprch %	59.2	37.9	2.7	0.1		32.4	39.8	26.8	1.1		9.1	28.4	62.4	0		2.3	87.6	10.1	0		
Total %	10.3	6.6	0.5	0	17.5	13.6	16.7	11.2	0.5	41.9	2	6.1	13.4	0	21.5	0.4	16.8	1.9	0	19.2	
Lights	916	587	38	0	1541	1180	1451	982	0	3613	176	543	1179	0	1898	37	1481	174	0	1692	8744
% Lights	98.4	98.5	88.4	0	98	96.7	96.8	97.4	0	95.9	99.4	98.7	97.5	0	98	94.9	97.9	99.4	0	98	97.1
Mediums	14	6	3	0	23	33	28	21	0	82	1	6	27	0	34	2	19	0	0	21	160
% Mediums	1.5	1	7	0	1.5	2.7	1.9	2.1	0	2.2	0.6	1.1	2.2	0	1.8	5.1	1.3	0	0	1.2	1.8
Articulated Trucks	1	3	2	0	6	7	20	5	0	32	0	1	3	0	4	0	12	1	0	13	55
% Articulated Trucks	0.1	0.5	4.7	0	0.4	0.6	1.3	0.5	0	0.8	0	0.2	0.2	0	0.2	0	0.8	0.6	0	0.8	0.6
Pedestrians	0	0	0	2	2	0	0	0	41	41	0	0	0	0	0	0	0	0	0	0	43
% Pedestrians	0	0	0	100	0.1	0	0	0	100	1.1	0	0	0	0	0	0	0	0	0	0	0.5

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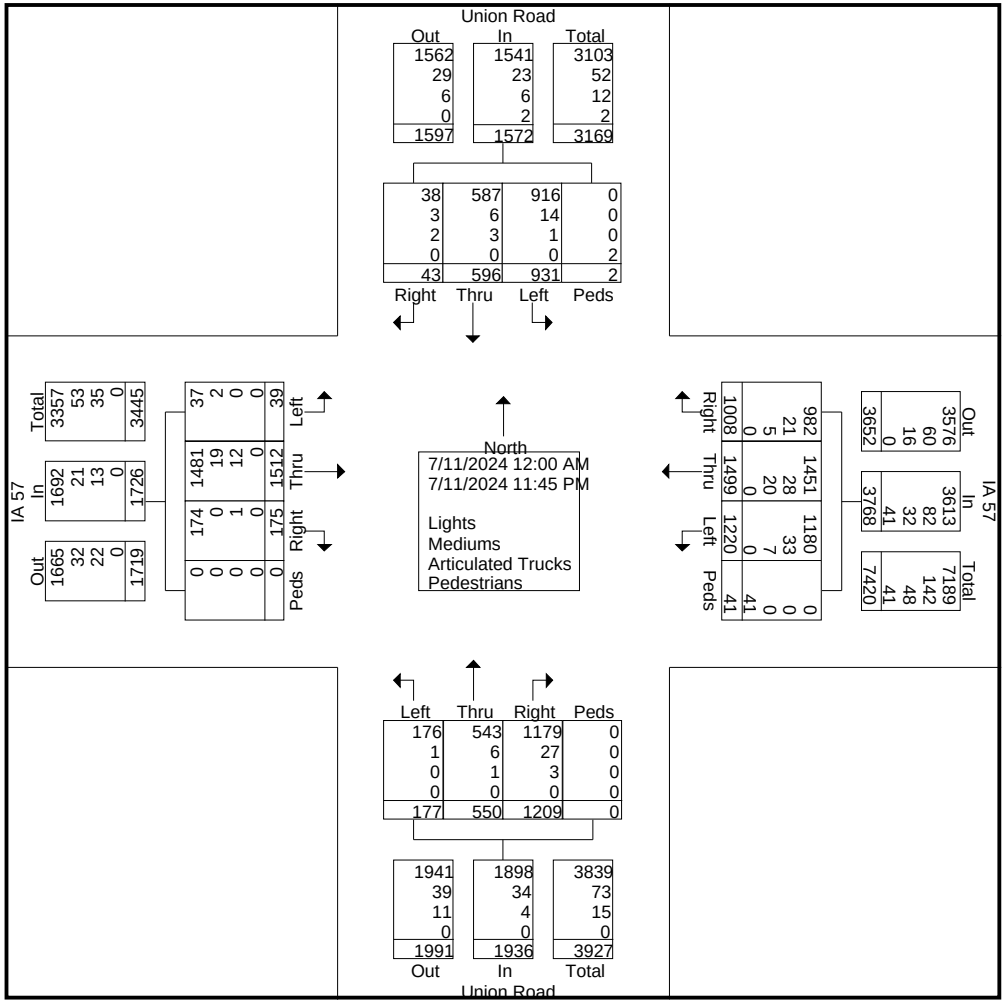

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	Union Road Southbound					IA 57 Westbound					Union Road Northbound					IA 57 Eastbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
Peak Hour Analysis From 12:00 AM to 09:45 AM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 06:15 AM																					
06:15 AM	21	7	**1**	0	29	**11**	19	1	1	32	**1**	**11**	18	0	30	0	33	**8**	0	41	132
06:30 AM	**24**	9	0	0	33	10	19	4	**2**	35	1	11	16	0	28	1	**53**	1	0	**55**	**151**
06:45 AM	21	**12**	1	0	**34**	6	16	**14**	1	37	1	4	**28**	0	**33**	1	35	5	0	41	145
07:00 AM	14	6	0	0	20	10	**22**	8	0	**40**	1	7	23	0	31	**2**	28	3	0	33	124
Total Volume	80	34	2	0	116	37	76	27	4	144	4	33	85	0	122	4	149	17	0	170	552
% App. Total	69	29.3	1.7	0		25.7	52.8	18.8	2.8		3.3	27	69.7	0		2.4	87.6	10	0		
PHF	.833	.708	.500	.000	.853	.841	.864	.482	.500	.900	1.00	.750	.759	.000	.924	.500	.703	.531	.000	.773	.914
Peak Hour Analysis From 10:00 AM to 01:45 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 11:00 AM																					
11:00 AM	**20**	**11**	0	0	**31**	**30**	**29**	21	**1**	**81**	**7**	11	24	0	42	0	21	1	0	22	176
11:15 AM	16	5	**1**	0	22	27	24	20	1	72	1	13	16	0	30	**1**	15	**3**	0	19	143
11:30 AM	13	11	0	0	24	23	26	**25**	0	74	3	**20**	**29**	0	**52**	0	**31**	3	0	**34**	**184**
11:45 AM	20	5	0	0	25	29	23	21	0	73	1	15	25	0	41	1	20	1	0	22	161
Total Volume	69	32	1	0	102	109	102	87	2	300	12	59	94	0	165	2	87	8	0	97	664
% App. Total	67.6	31.4	1	0		36.3	34	29	0.7		7.3	35.8	57	0		2.1	89.7	8.2	0		
PHF	.863	.727	.250	.000	.823	.908	.879	.870	.500	.926	.429	.738	.810	.000	.793	.500	.702	.667	.000	.713	.902
Peak Hour Analysis From 02:00 PM to 11:45 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 03:30 PM																					
03:30 PM	12	15	**2**	0	29	29	49	24	**3**	105	4	12	27	0	43	1	22	2	0	25	202
03:45 PM	16	13	0	0	29	31	**52**	21	3	**107**	5	8	**29**	0	42	0	**27**	**5**	0	**32**	**210**
04:00 PM	16	5	0	0	21	24	40	**35**	1	100	2	9	23	0	34	**2**	22	5	0	29	184
04:15 PM	**26**	**20**	0	0	**46**	**33**	42	16	0	91	**6**	**14**	25	0	**45**	2	23	1	0	26	208
Total Volume	70	53	2	0	125	117	183	96	7	403	17	43	104	0	164	5	94	13	0	112	804
% App. Total	56	42.4	1.6	0		29	45.4	23.8	1.7		10.4	26.2	63.4	0		4.5	83.9	11.6	0		
PHF	.673	.663	.250	.000	.679	.886	.880	.686	.583	.942	.708	.768	.897	.000	.911	.625	.870	.650	.000	.875	.957

County:	Black Hawk	Prepared By:	Foth
Location:	IA 57 (W 1st Street) at Union Road	Date Prepared:	7/25/2024
Proposed Improvements:	Construct single lane Roundabout		
Estimated Improvement Cost:	$ 1,517,000		
Inflation on Crash Costs:	4%	Annual Maintenance: (% of Improvement Cost)	0%
Discount Rate:	4%		
Estimated Service Life:	20	Annual Maintenance Cost:	$ 2,000
Method Choice:	CRF Method		

The Crash Reduction Factor (CRF) Method applies one to three CRFs to historical crashes to estimate reductions in future crashes. Crash Modification Factors (CMFs) can be converted to CRFs. For additional information, click the "Learn More" button.

Crash Reduction Factor (CRF) Method

Traffic Growth Factor:	1%
Number of CRFs:	1
Years of Crash History:	5

Combined CRF (Dominant Common Residuals Method)

Iowa DOT's preferred methodology for combining CRFs is Dominant Common Residuals, since it is more conservative than the other options.

	CRF 1:	Combined CRF
CRF Value (%)	65	**65.0**

Crash Severity	Rounded Societal Costs	Crash History (Total):	CRF (from above)	Crash History - Annual Avg	Crashes Saved Annually
Fatal (K)	$ 4,200,000		65.0	**0.00**	**0.00**
Serious Injury (A)	$ 4,200,000	1	65.0	**0.20**	**0.13**
Minor Injury (B)	$ 280,000	1	65.0	**0.20**	**0.13**
Possible/Unknown Injury (C)	$ 130,000	0	65.0	**0.00**	**0.00**
Property Damage Only (O)	$ 20,000	7	65.0	**1.40**	**0.91**

Crash Severity	Annual Societal Benefit
Fatal (K)	**$ -**
Serious Injury (A)	**$ 546,000**
Minor Injury (B)	**$ 36,400**
Possible/Unknown Injury (C)	**$ -**
Property Damage Only (O)	**$ 18,200**

Total Benefits and Costs

		Implementation Cost	$ 1,517,000
		Present Value of Maint.	$ 27,181
Present Value Benefits (Societal Benefits)	$ 8,871,286	Present Value Costs (Impl. and Maint. Costs)	$ 1,544,181
Present Value Net Return	$ 7,327,106		
Benefit Cost Ratio	**5.74**		

Form continues on next page

County:	Black Hawk	Prepared By:	Foth
Location:	IA 57 (W 1st Street) at Union Road	Date Prepared:	7/25/2024

User Input Required - Custom Values Used

General Customizations

No change to Crash Costs

No change to Discount Rate

Justification for deviation from default Maintenance Costs	The annual maintenance costs for the roundabout are estimated to be $2,000 per year based on NCHRP Project 17-98 Life-Cycle Cost Estimating Tool.

Method-Specific Customizations

No change to Traffic Growth Rate

No change to Crash History

Rev. 5/18

IOWA DOT

Application for SITE-SPECIFIC TSIP FUNDS

GENERAL INFORMATION **DATE:** 7-01-2024

Location / Title of Project 1ST AVENUE E BETWEEN 15TH STREET E AND 16TH STREET NE

Applicant City of Cedar Rapids

Contact Person Marcus Januario, PE Title Traffic Engineer II

Complete Mailing Address 500 15th Avenue SW

Cedar Rapids, IA 52404

Phone (319) 286-5729 (Area Code) E-Mail m.januario@cedar-rapids.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) _____

Contact Person _____ Title _____

Complete Mailing Address _____

_____

Phone _____ (Area Code) E-Mail _____

PLEASE COMPLETE THE FOLLOWING PROJECT INFORMATION:

Funding Amount

Total Safety Cost	$ 821,180
Total Project Cost	$ 841,180
Safety Funds Requested	$ 500,000

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

☒Yes – Explain Study prepared by Intram in 2020 recommended proposed improvement.

☐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 City of Cedar Rapids

Signed: Brenna Fall — 08/14/2024

Signature — Date Signed

Brenna Fall, PE

Printed Name

Attest: Kathy Jo Holmes — 8/14/24

Signature — Date Signed

Kathy Jo Holmes

Printed Name

NOTARIAL SEAL IOWA

KATHY JO HOLMES
Commission Number 750734
My Commission Expires
01-15-2026

Council Agenda Item Cover Sheet

Submitting Department: Public Works
Director Contact: Brenna Fall – b.fall@cedar-rapids.org – (319) 270-7661

Presenter at Meeting: Cari Pauli, PE – c.pauli@cedar-rapids.org

Description of Agenda Item: Purchases, contracts and agreements
Resolution authorizing the application for a Transportation Safety Improvement Program grant from the Iowa Department of Transportation for safety improvements on 1st Avenue E from 15th Street E to 16th Street NE.
CIP/DID # 3018000-02

Council Priority: Clean and Safe City
EnvisionCR Goal: StrengthenCR Goal 4: Create a city that is affordable and accessible to all members of the community.

Background: The Iowa Department of Transportation (Iowa DOT) has established the Transportation Safety Program (TSIP), which provides funding for locations where vehicular safety is a concern and documented. The city block of 1st Avenue E between 15th Street E and 16th Street NE has significant crash history, which can be reduced with the proposed improvements.

Recommended Action: The Public Works Department recommends approving the application for TSIP grant funding from the Iowa DOT, which will be used to install a raised median, a fence, a pedestrian hybrid beacon (PHB), and a mid-block crosswalk to Improve pedestrian crossing safety and overall safety of the two intersections at the limits of the corridor.

Alternative: Should Council determine not to approve this resolution, the application for TSIP grant funding will not be submitted to the Iowa DOT and the city block of 1st Avenue E intersection will not be changed.

Time Sensitivity: Normal

Resolution Date: July 23, 2024

Budget Information: NA

Local Preference Policy: Not applicable
Explanation: NA

Recommended by Council Committee: Not applicable
Explanation: NA

Background:

First Avenue is the main East-West thoroughfare in the City of Cedar Rapids, serving as one of the boundaries for today's quadrant-based address system. 1st Avenue E divides the neighborhoods of Mound View and Wellington Heights between Coe Road NE and 20th Street NE. The latter has a high crime and poverty rate, with a concentration of homelessness and vulnerable populations such as the elderly and children. Within the corridor study area, there is one Hy-Vee grocery store and several small businesses on either side of 1st Avenue E. These businesses along 1st Avenue serve the residents of both Mound View and Wellington Heights, plus Coe College students, which is located a few blocks west.

Due to resident's economic profile, there are more pedestrian activities along this corridor than usual, looking for services, either transportation, grocery stores, banks, and some small or family businesses.

Within the study limits, 1st Avenue E is a major arterial with five lanes (two lanes in each direction, plus a middle Two-Way Left-Turn Lane – TWLTL), and a 35-mph posted speed limit. The Annual Average Daily Traffic (AADT) is about 19,000 vehicles per day (vpd) from 2021, according to the Iowa DOT AADT Maps. The intersections at 15th Street and 16th Street are currently signalized and have pedestrian provisions. Despite that, pedestrians crossing 1st Avenue at mid-block locations are common.

A previous study prepared by Iowa Local Traffic Assistance Program in 2019 found a total of 747 pedestrians crossing 1st Avenue E in a single day in July 2017, including crossings at 15th Street, 16th Street, and mid-block between the two intersections. The main purpose of these crossings is to access businesses and bus shelters on both sides of 1st Avenue.

Crash History:

A total of 48 crashes occurred on the 1st Avenue E corridor between 15th St E to 16th St NE, from 01/01/2019 to 12/31/2023. These crashes recorded at the intersections of 15th Street, 16th Street, and the corridor in between are 19, 17, and 11, respectively.

At the intersection with 15th Street, most of the crashes were Failure to Yield Right of Way (FTYROW): making left turn (4), ran traffic signal (2), driver distraction (2), and other (4). Therefore, no trends were identified. According to manner of collision, the most common were rear-end (7), broadside (4), and angle (3). A rear-end crash trend was identified, which can be caused by driver distraction, poor signal clearance times, and pedestrian conflicts, among others. Fifteen out of the 19 crashes were Property Damage Only (PDO), with suspected minor injury and possible injury with 2 occurrences each.

At the intersection with 16th Street, most of the crashes were FTYROW: making left turn, ran traffic signal (2), followed too close (2), and other (2). Therefore, no trends were identified. According to manner of collision, the most common were rear-end (4), and angle (4). No crash trends were identified. 8 of the 12 crashes were PDO, with and possible injury with 4 occurrences.

In the past 5 years, the corridor between 15th St and 16th St had 7 suspected minor injury crashes, 10 possible/unknown injury crashes, and 31 property damage only crashes. Most of these crashes were FTYROW: making left turn (4), ran traffic signal (2), operating vehicle in a reckless manner (3), and other (2). Therefore, no trends were identified.

According to manner of collision, the most common were rear-end (5), broadside (3), and angle (4). No trends were identified. 8 of the 17 crashes were PDO, with suspected minor injury with 5, and possible injury with 4 occurrences.

Proposed Improvements:

The proposed concept is to build a mid-block pedestrian crossing with a Pedestrian Hybrid Beacon (PHB) and install a fence within a proposed median between 15th Street and 16th Street. Combined, these measures will significantly reduce the number of mid-block crashes, and improve pedestrian safety. The mid-block crossing will improve safety of pedestrians crossing 1st Avenue by directing pedestrians to an enhanced crossing, subsequently improving the aesthetics of the corridor.

PHB signals have a history of success all over the country, including at a few locations within the City of Cedar Rapids. The most recent PHB installed on 1st Avenue W between 1st and 3rd Streets, associated with the 1st Avenue reconstruction project. PHBs are recommended for crossing roads with high volumes of traffic, regardless of the volume of crossing pedestrians. At this location, a PBH will provide more visible and impacting signal heads, significantly enhancing pedestrian crossing safety.

Fences are provided to prevent or reduce unsafe pedestrian crossings at a given corridor. The City has successfully installed fences on 1st Avenue E, downtown, between 3rd Street and 4th Street. At the proposed location, the fence will block the pedestrian crossings along the corridor and will channelize them either to the mid-block crossing or to the intersections with 15th Street or 16th Street, while also enhancing the aesthetics of the corridor.

Following this improvement, other blocks of 1st Avenue E, from Coe Road NE to 17th Street NE, will also be subject to improvements, such as lane reconfigurations and addition or removal of traffic signals. The intersections show a high percent of crashes with left-turn vehicles. The addition of dedicated left-turn lanes and signal heads are likely to improve the signals safety and operations. However, those improvements are not part of the current project, for which the City is requesting TSIP funds.

To Perform the Benefit-Cost Analysis, appropriate CMFs were chosen, utilizing the DOT-provided planning-level list and the CRF Clearinghouse. The CMF Clearinghouse lists few studies that address installation of mid-block crossings. The best fit for this study is the following:

CMF ID: 3097 – Absence of Access Points

Using the DOT-provided Benefit-Cost worksheet, with associated project cost and crash history, it was found that the proposed improvements would have a Benefit-Cost Ratio of 3.93**.**

1st Ave E, 15th St E - 16th St NE							
Item no.	**Item**	**Unit**	**Unit Price**	**Quantity**	Safety Cost	Non Participating Cost	Total Cost
1	CLEARING AND GRUBBING	LS	$21,500.00	1.0	$21,500.00	$0.00	$21,500.00
2	TOPSOIL, OFF-SITE	CY	$38.00	18.1	$689.21	$0.00	$689.21
3	EXCAVATION, CLASS 10	CY	$9.00	1622.0	$14,597.59	$0.00	$14,597.59
4	SUBGRADE PREPARATION	LS	$41,000.00	1.0	$41,000.00	$0.00	$41,000.00
5	SUBBASE, MODIFIED, 12-INCH	SY	$7.00	4811.5	$33,680.17	$0.00	$33,680.17
6	SANITARY SEWER IMPROVEMENTS	LS	$25,500.00	0.0	$0.00	$0.00	$0.00
7	STORM SEWER IMPROVEMENTS	LS	$131,250.00	0.0	$0.00	$0.00	$0.00
8	WATER MAIN IMPROVEMENTS	LS	$90,500.00	0.0	$0.00	$0.00	$0.00
9	REMOVAL OF PAVEMENT	SY	$11.00	4811.5	$52,925.97	$0.00	$52,925.97
10	PAVEMENT, PCC, 9-INCH, CLASS C	SY	$77.00	4253.2	$327,493.66	$0.00	$327,493.66
11	REMOVAL OF SIDEWALK	SY	$12.00	0.0	$0.00	$0.00	$0.00
12	SIDEWALK, PCC, 5-INCH	SY	$55.00	0.0	$0.00	$0.00	$0.00
13	SIDEWALK, PCC, 6-INCH	SY	$60.00	558.3	$33,497.27	$0.00	$33,497.27
14	DETECTABLE WARNING	SF	$25.00	80.0	$2,000.00	$0.00	$2,000.00
15	DECORATIVE PAVERS WITH PCC PAVER BASE	LS	$60,000.00	0.0	$0.00	$0.00	$0.00
16	REMOVAL OF DRIVEWAY	SY	$12.00	108.1	$1,296.73	$0.00	$1,296.73
17	DRIVEWAY, PAVED, PCC, 6-INCH	SY	$65.00	0.0	$0.00	$0.00	$0.00
18	TEMPORARY DRIVEWAY, GRANULAR	SY	$25.00	0.0	$0.00	$0.00	$0.00
19	PAVEMENT MARKINGS AND SIGNAGE	LS	$25,000.00	1.0	$25,000.00	$0.00	$25,000.00
20	TRAFFIC CONTROL	LS	$15,000.00	1.0	$15,000.00	$0.00	$15,000.00
21	PEDESTRIAN HYBRID BEACON	EA	$135,000.00	1.0	$135,000.00	$0.00	$135,000.00
22	SWPPP PREPARATION / COMPLIANCE	LS	$22,500.00	1.0	$22,500.00	$0.00	$22,500.00
23	CONSTRUCTION SURVEY	LS	$20,000.00	1.0	$0.00	$20,000.00	$20,000.00
24	MOBILIZATION	LS	$95,000.00	1.0	$95,000.00	$0.00	$95,000.00
					----------	----------	----------
			TOTAL:		$821,180.60	$20,000.00	$841,180.60
			CONTINGENCY (10%)		$82,118.06	$2,000.00	$84,118.06
			TOTAL COST OPINION		**$903,298.66**	**$22,000.00**	**$925,298.66**

Time Schedule for Proposed Project

1st Avenue E, between 15th Avenue E and 16th Avenue NE

August 15, 2024	--	**TSIP application deadline**
January 15, 2025	--	**TSIP approval**
July 1, 2025		**TSIP funds approved**
July 2, 2025		**Council approval of the plans**
January 14, 2026		**Project Bid Letting**
March 30, 2026		**Project Construction starts**
August 21, 2026		**Substantial completion of project**

Area Map

1st Avenue E between 15th Street NE and 16th Street NE

Exhibit E - Project Area Map

Figure 1 – Bus Shelter and pedestrian on the south side of 1st Avenue E

Figure 2 – Bus Shelter and pedestrians on the north side of 1st Avenue E

Figure 3 – Pedestrians crossing 1st Avenue E at the 16th Street NE intersection.

Figure 4 – Biker of the north side of 1st Avenue E

Figure 4 – Businesses of the north side of 1st Avenue E near 15th Street E

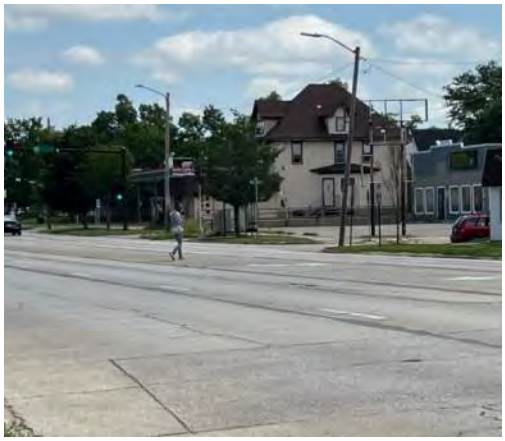


Figure 5 – Pedestrian crossing 1st Avenue E at midblock

PREPARED BY:
CITY OF CEDAR RAPIDS, PUBLIC WORKS
500 15TH AVENUE SW, CEDAR RAPIDS, IA 52404
PHONE: 319-286-5802

No.	REVISION DESCRIPTION	APPROVED	DATE
XX	DESCRIPTION	XXX	MM/DD/YYYY

CEDAR RAPIDS
City of Five Seasons

Date: 06/27/2024
Drawn By: MMBoyer
Approved By:
CIP No:

IMPROVEMENT PROJECT
1st Ave E - 15th St SE to 16th St SE

CONCEPT PLAN

SHEET No.
EX.1

Plot Date: ----
File Name: \\city\cr\local\sharedocs\pwtraffic\locations\1st ave e\1st ave e at 10th st to 17th st\cad\dgn\tsip files\1st ave e - 15th to 16th border.dgn

1st Avenue E & 15th Street E

Iowa Crash Analysis Tool
Quick Report
2019-2023

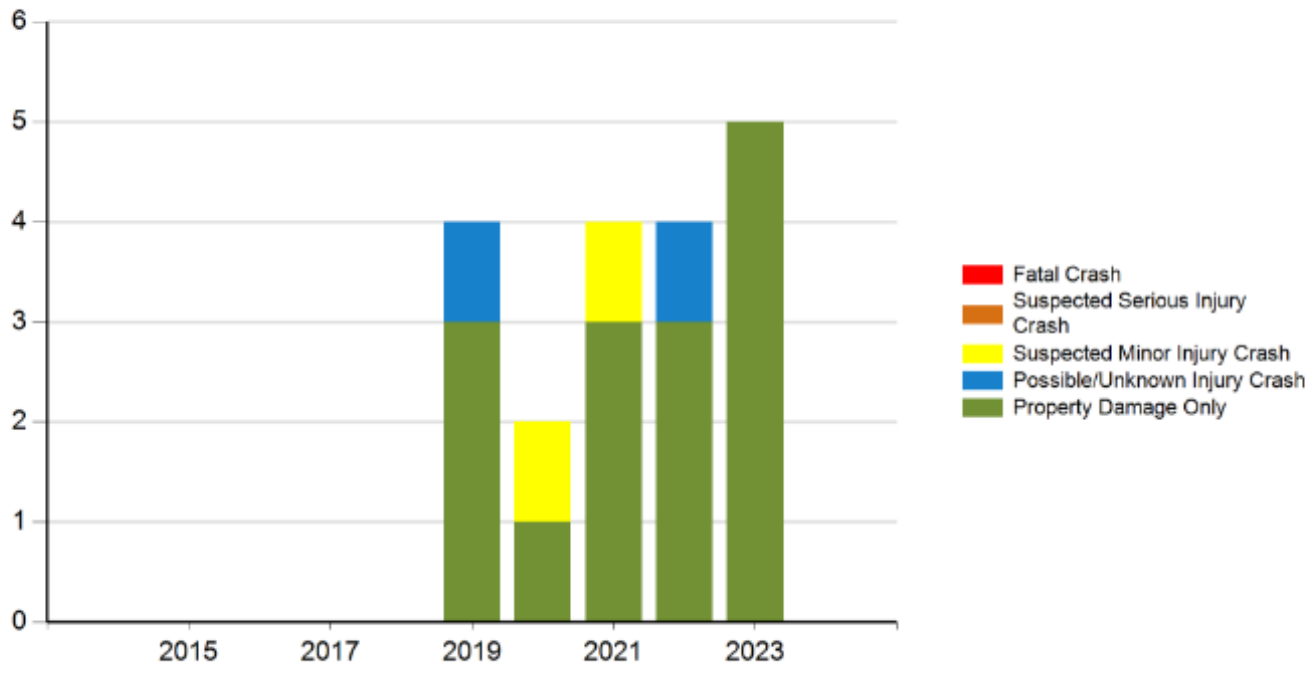
Crash Severity	19
Fatal Crash	0
Suspected Serious Injury Crash	0
Suspected Minor Injury Crash	2
Possible/Unknown Injury Crash	2
Property Damage Only	15

Injury Status Summary	6
Fatalities	0
Suspected serious/incapacitating	0
Suspected minor/non-incapacitating	2
Possible (complaint of pain/injury)	2
Uninjured	0
Unknown	0
Not Reported	2

Property/Vehicles/Occupants	
Property Damage Total (dollars):	146,900.00
Average (per crash dollars):	7,731.58
Total Vehicles:	37.00
Average (per crash):	1.95
Total Occupants:	55.00
Average (per crash):	2.89

Average Severity	
Fatalities/Fatal Crash:	0.00
Fatalities/Crash:	0.00
Injuries/Crash:	0.21
Major Injuries/Crash:	0.00
Minor Injuries/Crash:	0.11
Possible/Unknown Injuries/Crash:	0.11

Severity/Year



Iowa Crash Analysis Tool
Quick Report
2019-2023

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	1	0	0	0	0	0	0	0	0	1	0	0	0	2
Monday	0	0	0	0	0	1	0	0	0	0	0	0	0	1
Tuesday	0	0	0	1	0	1	0	0	0	0	0	1	0	3
Wednesday	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Thursday	0	0	0	0	0	1	0	1	1	0	0	0	0	3
Friday	0	0	0	2	0	2	0	0	1	1	1	0	0	7
Saturday	0	0	0	0	0	0	1	0	0	0	0	2	0	3
Total	1	0	0	3	0	5	1	1	2	2	1	3	0	19

Manner of Crash Collision	**19**
Non-collision (single vehicle)	2
Head-on (front to front)	0
Rear-end (front to rear)	7
Angle (oncoming left turn)	3
Broadside (front to side)	4
Sideswipe (same direction)	2
Sideswipe (opposite direction)	0
Rear to rear	0
Rear to side	0
Not reported	0
Other	1
Unknown	0

Surface Conditions	**19**
Dry	12
Wet	6
Ice/frost	0
Snow	1
Slush	0
Mud/dirt	0
Water (standing or moving)	0
Sand	0
Oil	0
Gravel	0
Not reported	0
Other	0
Unknown	0

Fixed Object Struck			**37**
Bridge overhead structure	0	Bridge pier or support	0
Bridge/bridge rail parapet	0	Curb/island/raised median	0
Ditch	0	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	1	Traffic sign support	0
Traffic signal support	0	Other post/pole/support	1
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)	35

Iowa Crash Analysis Tool
Quick Report
2019-2023

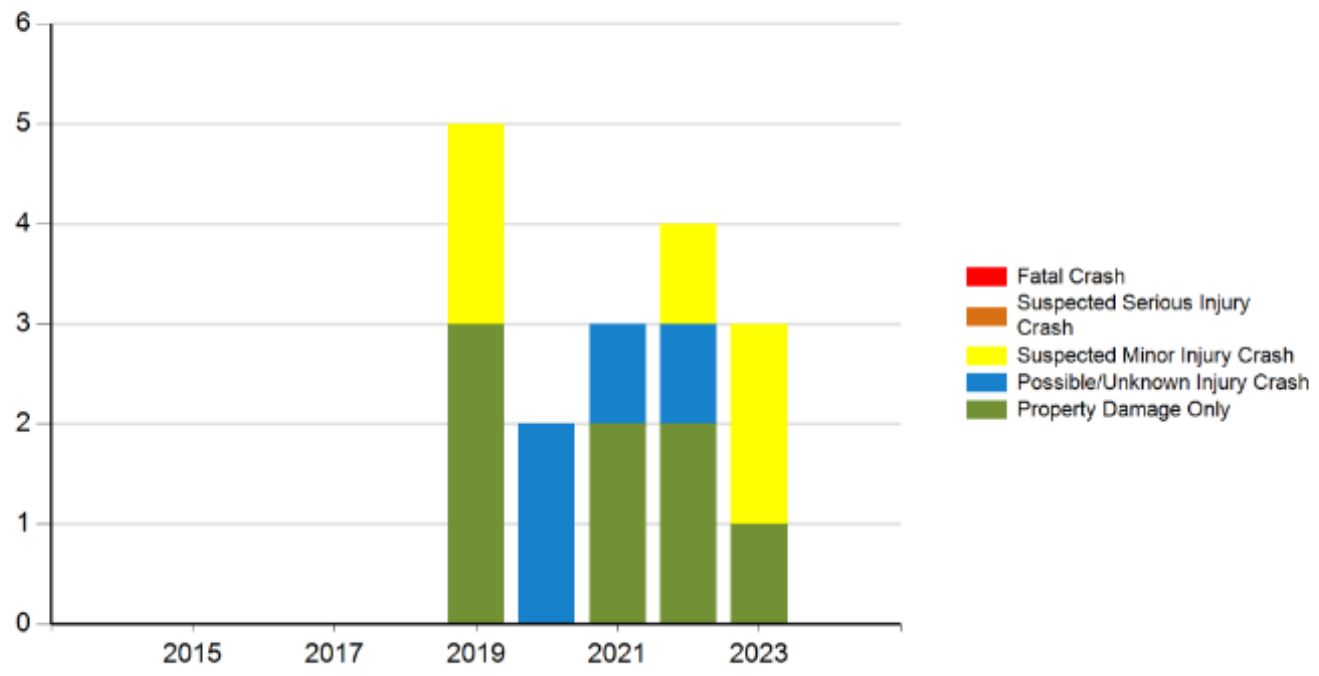
Crash Severity	17
Fatal Crash	0
Suspected Serious Injury Crash	0
Suspected Minor Injury Crash	5
Possible/Unknown Injury Crash	4
Property Damage Only	8

Injury Status Summary	14
Fatalities	0
Suspected serious/incapacitating	0
Suspected minor/non-incapacitating	5
Possible (complaint of pain/injury)	7
Uninjured	0
Unknown	0
Not Reported	2

Property/Vehicles/Occupants	
Property Damage Total (dollars):	102,905.00
Average (per crash dollars):	6,053.24
Total Vehicles:	32.00
Average (per crash):	1.88
Total Occupants:	45.00
Average (per crash):	2.65

Average Severity	
Fatalities/Fatal Crash:	0.00
Fatalities/Crash:	0.00
Injuries/Crash:	0.71
Major Injuries/Crash:	0.00
Minor Injuries/Crash:	0.29
Possible/Unknown Injuries/Crash:	0.41

Severity/Year



Iowa Crash Analysis Tool
Quick Report
2019-2023

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	1	0	0	1
Monday	0	0	0	0	1	2	0	0	0	0	1	0	0	4
Tuesday	0	0	0	0	0	0	0	1	1	0	1	0	0	3
Wednesday	0	0	0	0	0	0	0	1	1	0	0	0	0	2
Thursday	0	0	0	0	0	2	0	0	0	0	0	0	0	2
Friday	0	0	0	0	0	0	2	1	1	0	0	0	0	4
Saturday	0	0	0	0	0	1	0	0	0	0	0	0	0	1
Total	0	0	0	0	1	5	2	3	3	0	3	0	0	17

Manner of Crash Collision	**17**
Non-collision (single vehicle)	3
Head-on (front to front)	1
Rear-end (front to rear)	5
Angle (oncoming left turn)	4
Broadside (front to side)	3
Sideswipe (same direction)	0
Sideswipe (opposite direction)	1
Rear to rear	0
Rear to side	0
Not reported	0
Other	0
Unknown	0

Surface Conditions	**17**
Dry	13
Wet	4
Ice/frost	0
Snow	0
Slush	0
Mud/dirt	0
Water (standing or moving)	0
Sand	0
Oil	0
Gravel	0
Not reported	0
Other	0
Unknown	0

Fixed Object Struck			**32**
Bridge overhead structure	0	Bridge pier or support	0
Bridge/bridge rail parapet	0	Curb/island/raised median	0
Ditch	0	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	1	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	1
Other fixed object	0	None (no fixed object struck)	30

Iowa Crash Analysis Tool
Quick Report
2019-2023

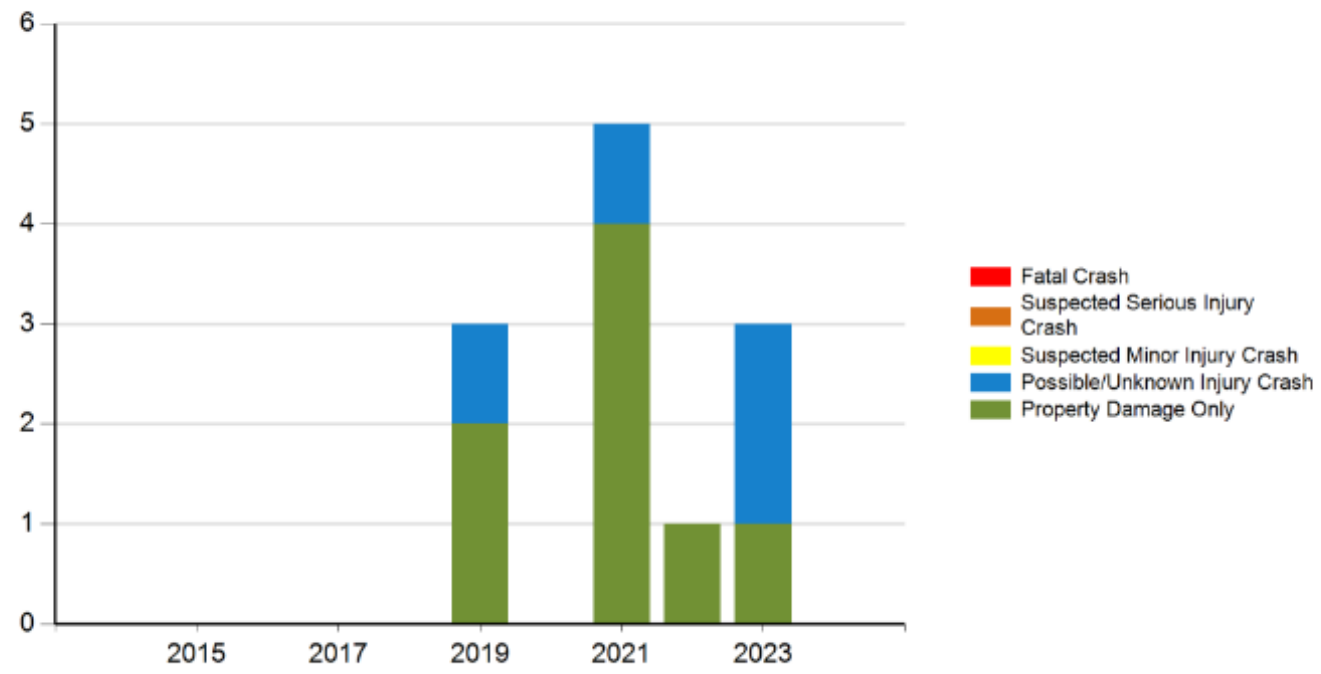
Crash Severity	12
Fatal Crash	0
Suspected Serious Injury Crash	0
Suspected Minor Injury Crash	0
Possible/Unknown Injury Crash	4
Property Damage Only	8

Injury Status Summary	4
Fatalities	0
Suspected serious/incapacitating	0
Suspected minor/non-incapacitating	0
Possible (complaint of pain/injury)	4
Uninjured	0
Unknown	0
Not Reported	0

Property/Vehicles/Occupants	
Property Damage Total (dollars):	93,273.00
Average (per crash dollars):	7,772.75
Total Vehicles:	25.00
Average (per crash):	2.08
Total Occupants:	29.00
Average (per crash):	2.42

Average Severity	
Fatalities/Fatal Crash:	0.00
Fatalities/Crash:	0.00
Injuries/Crash:	0.33
Major Injuries/Crash:	0.00
Minor Injuries/Crash:	0.00
Possible/Unknown Injuries/Crash:	0.33

Severity/Year



Iowa Crash Analysis Tool
Quick Report
2019-2023

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	0	0	1	0	0	1	0	0	0	0	2
Tuesday	0	0	0	0	0	1	1	0	1	1	0	0	0	4
Wednesday	0	0	0	0	0	0	0	0	1	0	0	0	0	1
Thursday	0	0	0	0	0	0	0	1	1	0	0	0	0	2
Friday	0	0	0	1	0	0	0	0	1	0	0	0	0	2
Saturday	0	0	0	0	0	0	0	0	0	1	0	0	0	1
Total	0	0	0	1	0	2	1	1	5	2	0	0	0	12

Manner of Crash Collision	**12**
Non-collision (single vehicle)	0
Head-on (front to front)	0
Rear-end (front to rear)	4
Angle (oncoming left turn)	4
Broadside (front to side)	2
Sideswipe (same direction)	1
Sideswipe (opposite direction)	0
Rear to rear	0
Rear to side	0
Not reported	0
Other	1
Unknown	0

Surface Conditions	**12**
Dry	7
Wet	2
Ice/frost	0
Snow	3
Slush	0
Mud/dirt	0
Water (standing or moving)	0
Sand	0
Oil	0
Gravel	0
Not reported	0
Other	0
Unknown	0

Fixed Object Struck			**25**
Bridge overhead structure	0	Bridge pier or support	0
Bridge/bridge rail parapet	0	Curb/island/raised median	0
Ditch	0	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)	25

Exhibit J - Turning Movement Counts

City of Cedar Rapids (IA)
101 First Street SE
PO Box 2148
Cedar Rapids, Iowa, United States 52406
319 286 5176 l.miller2@cedar-rapids.org

Count Name: 1st Avenue E at 15th Street
Site Code:
Start Date: 06/18/2024
Page No: 1

Turning Movement Data

Start Time	1st Avenue E Eastbound					1st Avenue E Westbound					15th Street SE Northbound					15th Street NE Southbound					
	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
12:00 AM	1	21	2	1	24	1	19	0	0	20	0	0	0	0	0	0	3	0	0	3	47
12:15 AM	0	22	1	2	23	3	19	0	0	22	0	2	0	0	2	0	0	2	0	2	49
12:30 AM	2	20	2	1	24	2	9	1	0	12	0	1	0	0	1	0	3	2	0	5	42
12:45 AM	0	19	0	0	19	1	9	1	0	11	3	0	0	0	3	1	0	0	0	1	34
Hourly Total	3	82	5	4	90	7	56	2	0	65	3	3	0	0	6	1	6	4	0	11	172
1:00 AM	0	10	3	0	13	0	9	0	0	9	0	2	1	0	3	0	0	0	0	0	25
1:15 AM	0	17	0	0	17	1	2	0	0	3	1	1	0	0	2	1	1	0	0	2	24
1:30 AM	2	11	0	1	13	0	6	0	0	6	0	0	1	0	1	0	1	0	3	1	21
1:45 AM	0	7	0	0	7	0	2	1	0	3	0	2	1	0	3	1	1	0	0	2	15
Hourly Total	2	45	3	1	50	1	19	1	0	21	1	5	3	0	9	2	3	0	3	5	85
2:00 AM	0	8	0	0	8	0	7	0	0	7	0	1	0	0	1	0	0	1	0	1	17
2:15 AM	1	7	1	0	9	1	7	0	0	8	0	0	0	0	0	0	0	0	0	0	17
2:30 AM	0	8	0	0	8	1	10	0	0	11	0	1	1	0	2	0	1	0	0	1	22
2:45 AM	0	6	0	0	6	1	7	0	0	8	0	1	0	0	1	0	0	0	0	0	15
Hourly Total	1	29	1	0	31	3	31	0	0	34	0	3	1	0	4	0	1	1	0	2	71
3:00 AM	1	7	0	0	8	0	7	0	0	7	0	0	1	0	1	0	0	0	0	0	16
3:15 AM	0	9	0	0	9	0	5	0	0	5	1	0	0	0	1	0	0	0	0	0	15
3:30 AM	1	6	0	0	7	1	4	0	0	5	1	1	0	1	2	0	0	0	0	0	14
3:45 AM	0	6	0	0	6	0	15	0	1	15	0	0	0	0	0	2	0	0	0	2	23
Hourly Total	2	28	0	0	30	1	31	0	1	32	2	1	1	1	4	2	0	0	0	2	68
4:00 AM	0	9	1	0	10	0	12	0	1	12	0	0	1	0	1	0	0	0	1	0	23
4:15 AM	0	9	0	0	9	1	15	0	0	16	0	0	1	0	1	0	0	0	0	0	26
4:30 AM	1	16	0	0	17	0	14	0	0	14	1	0	0	0	1	0	1	0	0	1	33
4:45 AM	0	8	1	1	9	0	26	1	0	27	0	1	0	0	1	0	0	0	0	0	37
Hourly Total	1	42	2	1	45	1	67	1	1	69	1	1	2	0	4	0	1	0	1	1	119
5:00 AM	0	6	0	1	6	0	39	0	0	39	0	1	0	0	1	0	1	0	0	1	47
5:15 AM	0	23	0	0	23	1	35	0	0	36	2	1	1	1	4	0	0	0	0	0	63
5:30 AM	0	15	1	1	16	3	81	0	0	84	1	1	1	0	3	0	0	1	1	1	104
5:45 AM	1	39	0	1	40	1	86	1	3	88	0	0	1	0	1	1	1	2	0	4	133
Hourly Total	1	83	1	3	85	5	241	1	3	247	3	3	3	1	9	1	2	3	1	6	347
6:00 AM	0	30	0	0	30	2	92	4	0	98	1	2	2	0	5	1	1	1	0	3	136
6:15 AM	1	50	1	3	52	6	130	2	5	138	0	4	0	0	4	1	1	5	2	7	201
6:30 AM	3	51	2	1	56	4	196	2	0	202	1	2	4	0	7	2	0	1	1	3	268
6:45 AM	0	85	1	1	86	2	176	2	0	180	2	5	6	1	13	2	0	2	3	4	283
Hourly Total	4	216	4	5	224	14	594	10	5	618	4	13	12	1	29	6	2	9	6	17	888
7:00 AM	0	91	1	0	92	3	179	3	0	185	2	1	6	0	9	2	2	3	0	7	293

7:15 AM	2	106	5	0	113	5	240	1	1	246	4	4	4	1	12	1	3	3	1	7	378
7:30 AM	2	122	2	1	126	7	293	1	0	301	2	3	6	1	11	3	1	6	1	10	448
7:45 AM	6	111	4	1	121	12	320	2	0	334	4	6	6	1	16	3	5	2	1	10	481
Hourly Total	10	430	12	2	452	27	1032	7	1	1066	12	14	22	3	48	9	11	14	3	34	1600
8:00 AM	2	126	3	3	131	2	253	5	1	260	4	8	9	1	21	6	1	2	1	9	421
8:15 AM	1	125	6	1	132	12	245	1	0	258	4	7	3	0	14	17	6	8	0	31	435
8:30 AM	2	144	5	2	151	5	226	2	1	233	4	6	12	0	22	2	4	5	0	11	417
8:45 AM	0	146	4	1	150	7	238	2	4	247	6	3	8	0	17	3	6	2	0	11	425
Hourly Total	5	541	18	7	564	26	962	10	6	998	18	24	32	1	74	28	17	17	1	62	1698
9:00 AM	4	126	5	0	135	9	143	1	3	153	7	6	5	3	18	3	1	3	0	7	313
9:15 AM	2	146	5	0	153	13	147	0	0	160	4	3	13	2	20	2	3	5	0	10	343
9:30 AM	2	154	4	0	160	5	139	2	1	146	1	3	8	3	12	5	3	2	0	10	328
9:45 AM	4	159	10	1	173	13	174	4	7	191	7	4	6	1	17	2	7	5	5	14	395
Hourly Total	12	585	24	1	621	40	603	7	11	650	19	16	32	9	67	12	14	15	5	41	1379
10:00 AM	4	158	2	0	164	12	184	1	4	197	2	7	7	2	16	6	2	5	2	13	390
10:15 AM	3	171	3	2	177	8	153	3	4	164	1	6	14	3	21	4	1	1	7	6	368
10:30 AM	3	147	1	0	151	13	151	4	0	168	2	9	10	1	21	2	7	4	1	13	353
10:45 AM	2	168	4	1	174	17	180	3	2	200	6	7	11	1	24	1	5	3	0	9	407
Hourly Total	12	644	10	3	666	50	668	11	10	729	11	29	42	7	82	13	15	13	10	41	1518
11:00 AM	3	174	6	4	183	5	176	3	3	184	3	6	14	4	23	4	7	3	0	14	404
11:15 AM	4	164	4	0	172	6	146	6	6	158	3	7	13	3	23	3	4	5	0	12	365
11:30 AM	1	170	8	1	179	10	179	7	5	196	6	6	12	4	24	2	5	2	1	9	408
11:45 AM	5	168	7	0	180	10	234	5	1	249	7	5	14	3	26	6	6	6	0	18	473
Hourly Total	13	676	25	5	714	31	735	21	15	787	19	24	53	14	96	15	22	16	1	53	1650
12:00 PM	7	218	5	3	230	14	218	7	6	239	9	8	11	4	28	8	6	11	2	25	522
12:15 PM	4	225	6	3	235	16	216	5	6	237	5	9	13	2	27	28	12	17	1	57	556
12:30 PM	7	170	10	0	187	15	172	4	0	191	7	12	12	0	31	8	5	5	2	18	427
12:45 PM	5	180	12	1	197	15	215	2	0	232	12	4	10	3	26	2	8	4	0	14	469
Hourly Total	23	793	33	7	849	60	821	18	12	899	33	33	46	9	112	46	31	37	5	114	1974
1:00 PM	3	164	5	2	172	13	202	1	2	216	6	5	9	3	20	2	4	6	1	12	420
1:15 PM	4	175	8	5	187	14	190	5	2	209	4	6	17	1	27	8	6	3	2	17	440
1:30 PM	5	178	5	1	188	12	200	6	4	218	11	7	14	1	32	3	2	5	4	10	448
1:45 PM	2	171	6	2	179	11	178	6	0	195	9	8	12	2	29	5	6	2	0	13	416
Hourly Total	14	688	24	10	726	50	770	18	8	838	30	26	52	7	108	18	18	16	7	52	1724
2:00 PM	3	191	14	2	208	10	185	0	3	195	11	4	7	0	22	2	5	4	0	11	436
2:15 PM	9	192	8	4	209	13	184	3	1	200	4	9	8	3	21	3	4	1	0	8	438
2:30 PM	1	159	7	0	167	7	210	3	0	220	5	10	12	2	27	4	4	6	3	14	428
2:45 PM	3	228	6	2	237	6	160	1	4	167	6	7	5	3	18	6	7	2	1	15	437
Hourly Total	16	770	35	8	821	36	739	7	8	782	26	30	32	8	88	15	20	13	4	48	1739
3:00 PM	0	200	8	3	208	12	194	8	5	214	4	10	11	3	25	5	4	7	0	16	463
3:15 PM	9	190	10	7	209	18	165	6	2	189	8	8	15	1	31	5	5	5	0	15	444
3:30 PM	3	235	8	6	246	24	173	1	2	198	10	3	19	1	32	6	2	7	0	15	491
3:45 PM	3	234	8	0	245	19	173	4	4	196	2	7	12	0	21	5	9	3	0	17	479
Hourly Total	15	859	34	16	908	73	705	19	13	797	24	28	57	5	109	21	20	22	0	63	1877
4:00 PM	8	277	4	0	289	9	156	4	3	169	4	10	13	4	27	4	8	3	0	15	500
4:15 PM	4	263	6	3	273	18	172	6	4	196	6	5	15	0	26	7	13	6	0	26	521
4:30 PM	3	286	7	1	296	17	187	8	5	212	7	6	17	1	30	8	11	3	0	22	560
4:45 PM	0	257	9	1	266	10	186	1	5	197	7	7	14	1	28	3	5	2	0	10	501
Hourly Total	15	1083	26	5	1124	54	701	19	17	774	24	28	59	6	111	22	37	14	0	73	2082
5:00 PM	4	285	4	5	293	22	175	5	1	202	7	10	11	1	28	3	4	5	0	12	535
5:15 PM	3	225	13	1	241	15	198	3	0	216	11	7	11	4	29	2	14	5	0	21	507
5:30 PM	3	160	3	1	166	10	150	3	1	163	10	2	8	1	20	2	4	3	0	9	358

5:45 PM	8	155	12	4	175	17	147	2	0	166	8	6	17	3	31	5	7	4	2	16	388
Hourly Total	18	825	32	11	875	64	670	13	2	747	36	25	47	9	108	12	29	17	2	58	1788
6:00 PM	5	152	6	0	163	12	137	4	2	153	4	5	11	2	20	3	7	2	6	12	348
6:15 PM	3	112	10	1	125	14	131	7	2	152	3	7	11	2	21	4	5	4	2	13	311
6:30 PM	5	124	5	4	134	12	123	4	2	139	2	13	7	0	22	3	4	1	2	8	303
6:45 PM	7	110	8	1	125	6	129	3	1	138	10	6	6	0	22	5	6	6	2	17	302
Hourly Total	20	498	29	6	547	44	520	18	7	582	19	31	35	4	85	15	22	13	12	50	1264
7:00 PM	5	115	9	11	129	6	124	3	3	133	6	1	8	2	15	1	6	3	2	10	287
7:15 PM	1	118	5	5	124	5	98	3	5	106	2	4	9	0	15	3	9	4	0	16	261
7:30 PM	2	106	7	1	115	15	87	1	3	103	1	5	6	0	12	2	2	1	0	5	235
7:45 PM	4	106	4	0	114	8	84	2	1	94	2	8	7	0	17	6	7	0	0	13	238
Hourly Total	12	445	25	17	482	34	393	9	12	436	11	18	30	2	59	12	24	8	2	44	1021
8:00 PM	4	105	8	1	117	15	110	3	6	128	4	3	4	1	11	4	1	0	2	5	261
8:15 PM	1	106	8	5	115	13	77	1	4	91	6	3	6	4	15	0	6	1	8	7	228
8:30 PM	1	129	5	2	135	5	92	1	1	98	4	1	4	3	9	0	2	1	2	3	245
8:45 PM	2	119	4	2	125	4	72	1	2	77	4	3	5	0	12	1	7	0	2	8	222
Hourly Total	8	459	25	10	492	37	351	6	13	394	18	10	19	8	47	5	16	2	14	23	956
9:00 PM	6	85	2	5	93	13	75	2	6	90	3	5	8	0	16	3	3	3	0	9	208
9:15 PM	4	101	6	2	111	5	63	1	3	69	2	2	4	1	8	5	1	2	0	8	196
9:30 PM	2	90	5	4	97	10	69	0	3	79	5	5	8	4	18	1	2	3	1	6	200
9:45 PM	1	65	5	0	71	5	64	3	1	72	3	3	7	2	13	1	3	0	1	4	160
Hourly Total	13	341	18	11	372	33	271	6	13	310	13	15	27	7	55	10	9	8	2	27	764
10:00 PM	3	61	4	1	68	1	56	4	6	61	3	2	6	0	11	1	0	0	4	1	141
10:15 PM	4	55	3	7	62	7	52	2	1	61	1	6	1	8	8	2	3	5	0	10	141
10:30 PM	0	54	4	2	58	5	39	4	3	48	2	1	3	2	6	2	0	3	1	5	117
10:45 PM	4	65	3	1	72	6	33	5	2	44	3	3	1	0	7	1	1	1	0	3	126
Hourly Total	11	235	14	11	260	19	180	15	12	214	9	12	11	10	32	6	4	9	5	19	525
11:00 PM	1	56	1	4	58	3	58	4	0	65	2	2	3	0	7	2	3	3	0	8	138
11:15 PM	0	41	1	2	42	4	21	1	1	26	1	1	2	1	4	0	2	1	0	3	75
11:30 PM	1	31	5	0	37	2	22	0	0	24	1	0	3	0	4	0	0	0	0	0	65
11:45 PM	0	24	0	1	24	3	21	1	0	25	3	0	5	0	8	0	0	0	2	0	57
Hourly Total	2	152	7	7	161	12	122	6	1	140	7	3	13	1	23	2	5	4	2	11	335
Grand Total	233	10549	407	151	11189	722	11282	225	171	12229	343	395	631	113	1369	273	329	255	86	857	25644
Approach %	2.1	94.3	3.6	-	-	5.9	92.3	1.8	-	-	25.1	28.9	46.1	-	-	31.9	38.4	29.8	-	-	-
Total %	0.9	41.1	1.6	-	43.6	2.8	44.0	0.9	-	47.7	1.3	1.5	2.5	-	5.3	1.1	1.3	1.0	-	3.3	-
Lights	228	10316	404	-	10948	714	11052	223	-	11989	336	374	626	-	1336	271	311	253	-	835	25108
% Lights	97.9	97.8	99.3	-	97.8	98.9	98.0	99.1	-	98.0	98.0	94.7	99.2	-	97.6	99.3	94.5	99.2	-	97.4	97.9
Mediums	5	180	2	-	187	6	193	1	-	200	5	20	5	-	30	1	18	0	-	19	436
% Mediums	2.1	1.7	0.5	-	1.7	0.8	1.7	0.4	-	1.6	1.5	5.1	0.8	-	2.2	0.4	5.5	0.0	-	2.2	1.7
Articulated Trucks	0	53	1	-	54	2	37	1	-	40	2	1	0	-	3	1	0	2	-	3	100
% Articulated Trucks	0.0	0.5	0.2	-	0.5	0.3	0.3	0.4	-	0.3	0.6	0.3	0.0	-	0.2	0.4	0.0	0.8	-	0.4	0.4
Pedestrians	-	-	-	151	-	-	-	-	171	-	-	-	-	113	-	-	-	-	86	-	-
% Pedestrians	-	-	-	100.0	-	-	-	-	100.0	-	-	-	-	100.0	-	-	-	-	100.0	-	-

City of Cedar Rapids (IA)
101 First Street SE
PO Box 2148
Cedar Rapids, Iowa, United States 52406
319 286 5176 l.miller2@cedar-rapids.org

Count Name: 1st Avenue E at 15th Street
Site Code:
Start Date: 06/18/2024

Turning Movement Peak Hour Data (7:30 AM)

Start Time	1st Avenue E Eastbound					1st Avenue E Westbound					15th Street SE Northbound					15th Street NE Southbound					
	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
7:30 AM	2	122	2	1	126	7	293	1	0	301	2	3	6	1	11	3	1	6	1	10	448
7:45 AM	6	111	4	1	121	12	320	2	0	334	4	6	6	1	16	3	5	2	1	10	481
8:00 AM	2	126	3	3	131	2	253	5	1	260	4	8	9	1	21	6	1	2	1	9	421
8:15 AM	1	125	6	1	132	12	245	1	0	258	4	7	3	0	14	17	6	8	0	31	435
Total	11	484	15	6	510	33	1111	9	1	1153	14	24	24	3	62	29	13	18	3	60	1785
Approach %	2.2	94.9	2.9	-	-	2.9	96.4	0.8	-	-	22.6	38.7	38.7	-	-	48.3	21.7	30.0	-	-	-
Total %	0.6	27.1	0.8	-	28.6	1.8	62.2	0.5	-	64.6	0.8	1.3	1.3	-	3.5	1.6	0.7	1.0	-	3.4	-
PHF	0.458	0.960	0.625	-	0.966	0.688	0.868	0.450	-	0.863	0.875	0.750	0.667	-	0.738	0.426	0.542	0.563	-	0.484	0.928
Lights	11	460	14	-	485	32	1091	9	-	1132	14	22	22	-	58	29	12	17	-	58	1733
% Lights	100.0	95.0	93.3	-	95.1	97.0	98.2	100.0	-	98.2	100.0	91.7	91.7	-	93.5	100.0	92.3	94.4	-	96.7	97.1
Mediums	0	16	1	-	17	1	16	0	-	17	0	2	2	-	4	0	1	0	-	1	39
% Mediums	0.0	3.3	6.7	-	3.3	3.0	1.4	0.0	-	1.5	0.0	8.3	8.3	-	6.5	0.0	7.7	0.0	-	1.7	2.2
Articulated Trucks	0	8	0	-	8	0	4	0	-	4	0	0	0	-	0	0	0	1	-	1	13
% Articulated Trucks	0.0	1.7	0.0	-	1.6	0.0	0.4	0.0	-	0.3	0.0	0.0	0.0	-	0.0	0.0	0.0	5.6	-	1.7	0.7
Pedestrians	-	-	-	6	-	-	-	-	1	-	-	-	-	3	-	-	-	-	3	-	-
% Pedestrians	-	-	-	100.0	-	-	-	-	100.0	-	-	-	-	100.0	-	-	-	-	100.0	-	-

Turning Movement Peak Hour Data (4:15 PM)

Start Time	1st Avenue E Eastbound					1st Avenue E Westbound					15th Street SE Northbound					15th Street NE Southbound					
	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
4:15 PM	4	263	6	3	273	18	172	6	4	196	6	5	15	0	26	7	13	6	0	26	521
4:30 PM	3	286	7	1	296	17	187	8	5	212	7	6	17	1	30	8	11	3	0	22	560
4:45 PM	0	257	9	1	266	10	186	1	5	197	7	7	14	1	28	3	5	2	0	10	501
5:00 PM	4	285	4	5	293	22	175	5	1	202	7	10	11	1	28	3	4	5	0	12	535
Total	11	1091	26	10	1128	67	720	20	15	807	27	28	57	3	112	21	33	16	0	70	2117
Approach %	1.0	96.7	2.3	-	-	8.3	89.2	2.5	-	-	24.1	25.0	50.9	-	-	30.0	47.1	22.9	-	-	-
Total %	0.5	51.5	1.2	-	53.3	3.2	34.0	0.9	-	38.1	1.3	1.3	2.7	-	5.3	1.0	1.6	0.8	-	3.3	-
PHF	0.688	0.954	0.722	-	0.953	0.761	0.963	0.625	-	0.952	0.964	0.700	0.838	-	0.933	0.656	0.635	0.667	-	0.673	0.945
Lights	11	1083	26	-	1120	67	711	20	-	798	27	27	56	-	110	21	32	16	-	69	2097
% Lights	100.0	99.3	100.0	-	99.3	100.0	98.8	100.0	-	98.9	100.0	96.4	98.2	-	98.2	100.0	97.0	100.0	-	98.6	99.1
Mediums	0	7	0	-	7	0	8	0	-	8	0	1	1	-	2	0	1	0	-	1	18
% Mediums	0.0	0.6	0.0	-	0.6	0.0	1.1	0.0	-	1.0	0.0	3.6	1.8	-	1.8	0.0	3.0	0.0	-	1.4	0.9
Articulated Trucks	0	1	0	-	1	0	1	0	-	1	0	0	0	-	0	0	0	0	-	0	2
% Articulated Trucks	0.0	0.1	0.0	-	0.1	0.0	0.1	0.0	-	0.1	0.0	0.0	0.0	-	0.0	0.0	0.0	0.0	-	0.0	0.1
Pedestrians	-	-	-	10	-	-	-	-	15	-	-	-	-	3	-	-	-	-	0	-	-
% Pedestrians	-	-	-	100.0	-	-	-	-	100.0	-	-	-	-	100.0	-	-	-	-	-	-	-

City of Cedar Rapids (IA)
101 First Street SE
PO Box 2148
Cedar Rapids, Iowa, United States 52406
319 286 5176 l.miller2@cedar-rapids.org

Count Name: 1st Avenue E at 16th St
Site Code:
Start Date: 06/20/2024

Turning Movement Data

Start Time	1st Avenue E Eastbound					1st Avenue E Westbound					Northbound Approach Northbound					16th Street NE Southbound					
	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
12:00 AM	0	20	1	0	21	0	24	2	0	26	0	0	0	0	0	4	0	4	0	8	55
12:15 AM	2	18	0	0	20	0	12	1	0	13	0	0	0	0	0	1	0	7	0	8	41
12:30 AM	5	12	0	0	17	0	13	1	0	14	0	0	0	0	0	2	0	5	0	7	38
12:45 AM	2	14	0	0	16	0	12	3	0	15	0	0	0	0	0	1	0	3	0	4	35
Hourly Total	9	64	1	0	74	0	61	7	0	68	0	0	0	0	0	8	0	19	0	27	169
1:00 AM	4	12	0	0	16	0	9	2	0	11	0	0	0	0	0	0	0	1	0	1	28
1:15 AM	3	9	0	1	12	0	8	0	0	8	0	0	0	0	0	1	0	3	0	4	24
1:30 AM	2	10	0	0	12	1	14	0	0	15	0	0	0	0	0	2	2	6	0	10	37
1:45 AM	2	4	0	0	6	0	5	0	0	5	0	0	0	0	0	2	1	2	0	5	16
Hourly Total	11	35	0	1	46	1	36	2	0	39	0	0	0	0	0	5	3	12	0	20	105
2:00 AM	3	11	0	0	14	0	3	2	0	5	0	0	0	0	0	0	0	3	0	3	22
2:15 AM	1	3	0	0	4	0	7	1	0	8	0	0	0	0	0	2	0	1	0	3	15
2:30 AM	3	6	0	0	9	0	5	1	0	6	0	0	0	0	0	0	0	0	0	0	15
2:45 AM	0	6	0	2	6	0	8	0	0	8	0	0	0	0	0	0	0	5	0	5	19
Hourly Total	7	26	0	2	33	0	23	4	0	27	0	0	0	0	0	2	0	9	0	11	71
3:00 AM	0	2	0	1	2	0	7	0	0	7	0	0	0	0	0	0	0	2	0	2	11
3:15 AM	1	8	0	0	9	0	10	0	0	10	0	0	0	0	0	0	0	0	0	0	19
3:30 AM	0	5	0	1	5	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	6
3:45 AM	0	2	0	0	2	0	14	1	0	15	0	0	0	0	0	1	0	1	0	2	19
Hourly Total	1	17	0	2	18	0	32	1	0	33	0	0	0	0	0	1	0	3	0	4	55
4:00 AM	0	9	0	0	9	0	6	0	0	6	0	0	0	0	0	1	0	0	0	1	16
4:15 AM	0	8	0	0	8	0	9	0	0	9	0	0	0	0	0	0	0	1	0	1	18
4:30 AM	1	9	0	0	10	0	22	1	0	23	0	0	0	0	0	1	0	2	0	3	36
4:45 AM	1	12	0	0	13	0	30	3	1	33	0	0	0	0	0	0	0	2	0	2	48
Hourly Total	2	38	0	0	40	0	67	4	1	71	0	0	0	0	0	2	0	5	0	7	118
5:00 AM	0	5	0	0	5	0	31	1	0	32	0	0	0	0	0	0	0	0	0	0	37
5:15 AM	0	19	0	0	19	0	41	2	0	43	0	0	0	0	0	0	0	2	0	2	64
5:30 AM	2	25	0	0	27	0	79	8	0	87	0	0	0	0	0	0	0	1	0	1	115
5:45 AM	1	35	0	1	36	0	87	3	0	90	0	0	0	0	0	2	0	6	0	8	134
Hourly Total	3	84	0	1	87	0	238	14	0	252	0	0	0	0	0	2	0	9	0	11	350
6:00 AM	3	25	0	1	28	0	81	6	0	87	0	0	0	0	0	1	0	8	0	9	124
6:15 AM	5	44	0	0	49	0	129	6	0	135	0	0	0	0	0	4	0	7	0	11	195
6:30 AM	2	52	0	0	54	0	169	6	0	175	0	0	0	0	0	4	0	5	0	9	238
6:45 AM	2	70	0	2	72	0	176	11	1	187	0	0	0	1	0	7	0	11	2	18	277
Hourly Total	12	191	0	3	203	0	555	29	1	584	0	0	0	1	0	16	0	31	2	47	834
7:00 AM	8	85	0	1	93	0	157	11	0	168	0	0	0	3	0	11	0	10	0	21	282

7:15 AM	5	98	0	0	103	0	203	7	2	210	0	0	0	0	0	10	0	13	2	23	336
7:30 AM	10	121	0	0	131	0	274	12	0	286	0	0	0	0	0	13	0	17	0	30	447
7:45 AM	11	138	0	2	149	0	292	15	0	307	0	0	0	1	0	22	0	24	1	46	502
Hourly Total	34	442	0	3	476	0	926	45	2	971	0	0	0	4	0	56	0	64	3	120	1567
8:00 AM	4	149	0	3	153	0	237	11	0	248	0	0	0	4	0	14	0	12	2	26	427
8:15 AM	9	151	0	0	160	0	237	19	0	256	0	0	0	0	0	14	0	12	0	26	442
8:30 AM	5	130	0	4	135	0	211	9	0	220	0	0	0	3	0	18	0	19	0	37	392
8:45 AM	10	153	0	2	163	0	203	17	0	220	0	0	0	1	0	17	0	19	0	36	419
Hourly Total	28	583	0	9	611	0	888	56	0	944	0	0	0	8	0	63	0	62	2	125	1680
9:00 AM	6	151	0	1	157	0	170	16	0	186	0	0	0	0	0	12	0	16	0	28	371
9:15 AM	8	111	0	2	119	0	151	11	0	162	0	0	0	0	0	9	0	19	0	28	309
9:30 AM	4	134	0	3	138	0	148	11	0	159	0	0	0	0	0	18	0	17	1	35	332
9:45 AM	7	148	0	2	155	0	176	12	0	188	0	0	2	0	2	20	0	15	0	35	380
Hourly Total	25	544	0	8	569	0	645	50	0	695	0	0	2	0	2	59	0	67	1	126	1392
10:00 AM	5	166	0	1	171	1	161	12	0	174	0	0	0	1	0	22	0	16	0	38	383
10:15 AM	12	144	0	0	156	0	142	17	0	159	0	0	1	4	1	17	0	22	1	39	355
10:30 AM	15	158	0	2	173	1	163	12	0	176	0	0	1	0	1	20	0	19	0	39	389
10:45 AM	7	163	1	3	171	0	155	16	0	171	1	0	0	2	1	17	0	15	1	32	375
Hourly Total	39	631	1	6	671	2	621	57	0	680	1	0	2	7	3	76	0	72	2	148	1502
11:00 AM	9	174	0	1	183	0	172	16	0	188	0	0	0	1	0	22	0	22	1	44	415
11:15 AM	15	188	0	4	203	0	171	13	1	184	0	0	2	1	2	22	0	14	1	36	425
11:30 AM	7	173	0	1	180	0	187	7	0	194	0	0	0	2	0	18	1	15	0	34	408
11:45 AM	9	216	0	4	225	0	247	28	0	275	0	0	1	6	1	18	0	19	1	37	538
Hourly Total	40	751	0	10	791	0	777	64	1	841	0	0	3	10	3	80	1	70	3	151	1786
12:00 PM	16	225	0	9	241	0	237	14	0	251	1	0	0	0	1	23	0	20	1	43	536
12:15 PM	18	231	0	7	249	0	191	20	0	211	0	0	0	3	0	41	0	31	3	72	532
12:30 PM	15	187	0	5	202	0	212	15	1	227	2	0	0	5	2	25	0	23	2	48	479
12:45 PM	9	173	0	1	182	0	213	16	0	229	0	0	0	2	0	23	0	23	2	46	457
Hourly Total	58	816	0	22	874	0	853	65	1	918	3	0	0	10	3	112	0	97	8	209	2004
1:00 PM	16	198	0	17	214	1	212	15	1	228	0	0	1	7	1	25	0	18	5	43	486
1:15 PM	15	191	0	7	206	0	187	15	0	202	0	0	0	4	0	28	0	14	0	42	450
1:30 PM	13	175	1	1	189	0	204	18	0	222	0	1	0	8	1	22	0	22	1	44	456
1:45 PM	9	203	1	4	213	2	175	16	2	193	0	0	2	3	2	19	0	20	1	39	447
Hourly Total	53	767	2	29	822	3	778	64	3	845	0	1	3	22	4	94	0	74	7	168	1839
2:00 PM	7	202	0	4	209	0	175	25	0	200	0	0	1	2	1	29	0	19	1	48	458
2:15 PM	15	221	0	3	236	0	197	22	0	219	0	0	1	2	1	22	0	25	0	47	503
2:30 PM	14	165	0	4	179	0	203	22	0	225	0	1	0	0	1	25	0	19	0	44	449
2:45 PM	12	189	0	4	201	0	194	14	1	208	0	0	1	2	1	24	0	25	0	49	459
Hourly Total	48	777	0	15	825	0	769	83	1	852	0	1	3	6	4	100	0	88	1	188	1869
3:00 PM	14	193	0	1	207	0	160	16	0	176	0	0	0	0	0	39	0	30	0	69	452
3:15 PM	15	219	0	6	234	0	180	21	0	201	0	0	1	6	1	36	0	26	2	62	498
3:30 PM	20	231	0	4	251	0	155	21	0	176	0	0	0	4	0	25	0	32	1	57	484
3:45 PM	18	231	0	4	249	1	176	19	0	196	0	0	1	3	1	32	1	21	1	54	500
Hourly Total	67	874	0	15	941	1	671	77	0	749	0	0	2	13	2	132	1	109	4	242	1934
4:00 PM	16	281	0	3	297	0	180	22	1	202	0	0	1	3	1	24	0	28	0	52	552
4:15 PM	23	254	1	3	278	0	182	19	0	201	0	1	1	2	2	29	0	22	0	51	532
4:30 PM	11	304	1	6	316	1	189	20	1	210	0	1	0	2	1	41	0	36	4	77	604
4:45 PM	21	255	0	4	276	1	170	25	0	196	0	1	2	2	3	33	0	22	0	55	530
Hourly Total	71	1094	2	16	1167	2	721	86	2	809	0	3	4	9	7	127	0	108	4	235	2218
5:00 PM	25	276	0	4	301	1	190	17	1	208	0	0	0	5	0	33	0	35	0	68	577
5:15 PM	18	205	1	3	224	0	179	22	0	201	0	1	1	5	2	30	0	16	0	46	473
5:30 PM	18	191	0	1	209	0	171	15	0	186	0	0	0	1	0	17	0	20	1	37	432

5:45 PM	13	156	1	5	170	0	165	19	0	184	0	0	0	4	0	22	0	19	1	41	395
Hourly Total	74	828	2	13	904	1	705	73	1	779	0	1	1	15	2	102	0	90	2	192	1877
6:00 PM	10	100	0	10	110	1	137	12	0	150	0	0	1	0	1	24	0	24	3	48	309
6:15 PM	14	120	0	1	134	0	143	26	0	169	0	0	0	0	0	18	0	20	0	38	341
6:30 PM	11	123	0	13	134	0	147	14	2	161	0	0	1	0	1	17	0	22	2	39	335
6:45 PM	14	119	1	7	134	0	120	11	0	131	0	1	0	0	1	14	0	23	0	37	303
Hourly Total	49	462	1	31	512	1	547	63	2	611	0	1	2	0	3	73	0	89	5	162	1288
7:00 PM	7	106	0	6	113	1	103	18	0	122	0	0	0	3	0	16	1	22	0	39	274
7:15 PM	11	142	0	1	153	0	87	8	0	95	0	0	0	1	0	20	0	19	0	39	287
7:30 PM	13	114	1	3	128	0	102	8	0	110	0	0	0	5	0	14	0	16	2	30	268
7:45 PM	4	126	0	3	130	0	91	6	0	97	0	0	0	1	0	17	0	13	1	30	257
Hourly Total	35	488	1	13	524	1	383	40	0	424	0	0	0	10	0	67	1	70	3	138	1086
8:00 PM	10	142	0	1	152	0	84	9	0	93	0	0	1	1	1	4	0	13	1	17	263
8:15 PM	11	120	0	4	131	0	78	8	0	86	0	0	0	3	0	13	0	14	0	27	244
8:30 PM	5	108	0	3	113	1	101	8	0	110	0	0	1	1	1	19	0	24	4	43	267
8:45 PM	8	95	0	4	103	1	76	8	0	85	0	0	0	0	0	14	0	16	1	30	218
Hourly Total	34	465	0	12	499	2	339	33	0	374	0	0	2	5	2	50	0	67	6	117	992
9:00 PM	17	71	0	1	88	0	81	5	0	86	0	0	0	0	0	5	0	14	0	19	193
9:15 PM	6	54	6	0	66	0	68	5	0	73	0	0	0	0	0	6	0	10	0	16	155
9:30 PM	6	54	6	0	66	0	53	9	0	62	0	0	0	0	0	15	0	14	0	29	157
9:45 PM	10	69	0	1	79	0	51	4	0	55	0	0	0	0	0	10	0	5	0	15	149
Hourly Total	39	248	12	2	299	0	253	23	0	276	0	0	0	0	0	36	0	43	0	79	654
10:00 PM	8	70	0	0	78	0	58	4	0	62	0	0	1	0	1	12	0	9	0	21	162
10:15 PM	4	59	0	0	63	0	58	11	0	69	0	0	1	0	1	6	0	8	0	14	147
10:30 PM	15	50	0	0	65	1	47	9	0	57	0	0	1	0	1	5	0	6	0	11	134
10:45 PM	5	49	0	1	54	2	34	5	0	41	0	0	1	0	1	9	0	8	0	17	113
Hourly Total	32	228	0	1	260	3	197	29	0	229	0	0	4	0	4	32	0	31	0	63	556
11:00 PM	2	47	3	1	52	2	19	5	0	26	0	0	1	0	1	4	0	17	0	21	100
11:15 PM	9	57	0	0	66	0	24	3	0	27	1	0	0	0	1	1	1	6	0	8	102
11:30 PM	7	29	1	5	37	0	23	4	0	27	0	0	0	0	0	0	0	4	0	4	68
11:45 PM	2	29	0	0	31	0	24	1	0	25	0	0	0	0	0	0	0	1	0	1	57
Hourly Total	20	162	4	6	186	2	90	13	0	105	1	0	1	0	2	5	1	28	0	34	327
12:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Grand Total	791	10615	26	220	11432	19	11175	982	15	12176	5	7	29	120	41	1300	7	1317	53	2624	26273
Approach %	6.9	92.9	0.2	-	-	0.2	91.8	8.1	-	-	12.2	17.1	70.7	-	-	49.5	0.3	50.2	-	-	-
Total %	3.0	40.4	0.1	-	43.5	0.1	42.5	3.7	-	46.3	0.0	0.0	0.1	-	0.2	4.9	0.0	5.0	-	10.0	-
Lights	782	10384	26	-	11192	19	10939	970	-	11928	4	7	29	-	40	1275	6	1306	-	2587	25747
% Lights	98.9	97.8	100.0	-	97.9	100.0	97.9	98.8	-	98.0	80.0	100.0	100.0	-	97.6	98.1	85.7	99.2	-	98.6	98.0
Mediums	9	194	0	-	203	0	196	8	-	204	1	0	0	-	1	15	1	9	-	25	433
% Mediums	1.1	1.8	0.0	-	1.8	0.0	1.8	0.8	-	1.7	20.0	0.0	0.0	-	2.4	1.2	14.3	0.7	-	1.0	1.6
Articulated Trucks	0	37	0	-	37	0	40	4	-	44	0	0	0	-	0	10	0	2	-	12	93
% Articulated Trucks	0.0	0.3	0.0	-	0.3	0.0	0.4	0.4	-	0.4	0.0	0.0	0.0	-	0.0	0.8	0.0	0.2	-	0.5	0.4
Pedestrians	-	-	-	220	-	-	-	-	15	-	-	-	-	120	-	-	-	-	53	-	-
% Pedestrians	-	-	-	100.0	-	-	-	-	100.0	-	-	-	-	100.0	-	-	-	-	100.0	-	-

City of Cedar Rapids (IA)
101 First Street SE
PO Box 2148
Cedar Rapids, Iowa, United States 52406
319 286 5176 l.miller2@cedar-rapids.org

Count Name: 1st Avenue E at 16th St
Site Code:
Start Date: 06/20/2024

Turning Movement Peak Hour Data (7:30 AM)

Start Time	1st Avenue E Eastbound					1st Avenue E Westbound					Northbound Approach Northbound					16th Street NE Southbound					
	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
7:30 AM	10	121	0	0	131	0	274	12	0	286	0	0	0	0	0	13	0	17	0	30	447
7:45 AM	11	138	0	2	149	0	292	15	0	307	0	0	0	1	0	22	0	24	1	46	502
8:00 AM	4	149	0	3	153	0	237	11	0	248	0	0	0	4	0	14	0	12	2	26	427
8:15 AM	9	151	0	0	160	0	237	19	0	256	0	0	0	0	0	14	0	12	0	26	442
Total	34	559	0	5	593	0	1040	57	0	1097	0	0	0	5	0	63	0	65	3	128	1818
Approach %	5.7	94.3	0.0	-	-	0.0	94.8	5.2	-	-	0.0	0.0	0.0	-	-	49.2	0.0	50.8	-	-	-
Total %	1.9	30.7	0.0	-	32.6	0.0	57.2	3.1	-	60.3	0.0	0.0	0.0	-	0.0	3.5	0.0	3.6	-	7.0	-
PHF	0.773	0.925	0.000	-	0.927	0.000	0.890	0.750	-	0.893	0.000	0.000	0.000	-	0.000	0.716	0.000	0.677	-	0.696	0.905
Lights	32	533	0	-	565	0	1028	57	-	1085	0	0	0	-	0	60	0	64	-	124	1774
% Lights	94.1	95.3	-	-	95.3	-	98.8	100.0	-	98.9	-	-	-	-	-	95.2	-	98.5	-	96.9	97.6
Mediums	2	22	0	-	24	0	10	0	-	10	0	0	0	-	0	3	0	1	-	4	38
% Mediums	5.9	3.9	-	-	4.0	-	1.0	0.0	-	0.9	-	-	-	-	-	4.8	-	1.5	-	3.1	2.1
Articulated Trucks	0	4	0	-	4	0	2	0	-	2	0	0	0	-	0	0	0	0	-	0	6
% Articulated Trucks	0.0	0.7	-	-	0.7	-	0.2	0.0	-	0.2	-	-	-	-	-	0.0	-	0.0	-	0.0	0.3
Pedestrians	-	-	-	5	-	-	-	-	0	-	-	-	-	5	-	-	-	-	3	-	-
% Pedestrians	-	-	-	100.0	-	-	-	-	-	-	-	-	-	100.0	-	-	-	-	100.0	-	-

Turning Movement Peak Hour Data (4:15 PM)

Start Time	1st Avenue E Eastbound					1st Avenue E Westbound					Northbound Approach Northbound					16th Street NE Southbound					
	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
4:15 PM	23	254	1	3	278	0	182	19	0	201	0	1	1	2	2	29	0	22	0	51	532
4:30 PM	11	304	1	6	316	1	189	20	1	210	0	1	0	2	1	41	0	36	4	77	604
4:45 PM	21	255	0	4	276	1	170	25	0	196	0	1	2	2	3	33	0	22	0	55	530
5:00 PM	25	276	0	4	301	1	190	17	1	208	0	0	0	5	0	33	0	35	0	68	577
Total	80	1089	2	17	1171	3	731	81	2	815	0	3	3	11	6	136	0	115	4	251	2243
Approach %	6.8	93.0	0.2	-	-	0.4	89.7	9.9	-	-	0.0	50.0	50.0	-	-	54.2	0.0	45.8	-	-	-
Total %	3.6	48.6	0.1	-	52.2	0.1	32.6	3.6	-	36.3	0.0	0.1	0.1	-	0.3	6.1	0.0	5.1	-	11.2	-
PHF	0.800	0.896	0.500	-	0.926	0.750	0.962	0.810	-	0.970	0.000	0.750	0.375	-	0.500	0.829	0.000	0.799	-	0.815	0.928
Lights	80	1079	2	-	1161	3	721	81	-	805	0	3	3	-	6	135	0	115	-	250	2222
% Lights	100.0	99.1	100.0	-	99.1	100.0	98.6	100.0	-	98.8	-	100.0	100.0	-	100.0	99.3	-	100.0	-	99.6	99.1
Mediums	0	7	0	-	7	0	10	0	-	10	0	0	0	-	0	0	0	0	-	0	17
% Mediums	0.0	0.6	0.0	-	0.6	0.0	1.4	0.0	-	1.2	-	0.0	0.0	-	0.0	0.0	-	0.0	-	0.0	0.8
Articulated Trucks	0	3	0	-	3	0	0	0	-	0	0	0	0	-	0	1	0	0	-	1	4
% Articulated Trucks	0.0	0.3	0.0	-	0.3	0.0	0.0	0.0	-	0.0	-	0.0	0.0	-	0.0	0.7	-	0.0	-	0.4	0.2
Pedestrians	-	-	-	17	-	-	-	-	2	-	-	-	-	11	-	-	-	-	4	-	-
% Pedestrians	-	-	-	100.0	-	-	-	-	100.0	-	-	-	-	100.0	-	-	-	-	100.0	-	-

County:	Linn	Prepared By:	MHJ
Location:	1st Ave E Between 15th and 16th stre	Date Prepared:	7/1/2024
Proposed Improvements:	Construct a raised median, install afence, and install a 10-foot wide mid-block pedestrian crossing.		
Estimated Improvement Cost:	$ 841,180		
Inflation on Crash Costs:	4%	Annual Maintenance:	2%
Discount Rate:	4%	(% of Improvement Cost)	
Estimated Service Life:	15	Annual Maintenance Cost:	$ 16,824

Method Choice: CRF Method

The Crash Reduction Factor (CRF) Method applies one to three CRFs to historical crashes to estimate reductions in future crashes. Crash Modification Factors (CMFs) can be converted to CRFs. For additional information, click the "Learn More" button.

Crash Reduction Factor (CRF) Method

Traffic Growth Factor:	1%
Number of CRFs:	1
Years of Crash History:	5

Combined CRF (Dominant Common Residuals Method)

Iowa DOT's preferred methodology for combining CRFs is Dominant Common Residuals, since it is more conservative than the other options.

	CRF 1:	Combined CRF	
CRF Value (%)	44	**44.0**	
Equivalent CMF	0.56		Is Dom. Com. Resd.
Combined CMF, if # used (DR)	0.56	0.56	TRUE
Combined CMF, if # used (Mult)	0.56		Is data entered befc
Pick Dom Com. Resd. Or Mult. Fo	0.56	0.56	FALSE

Crash Severity	Rounded Societal Costs	Crash History (Total):	CRF (from above)	Crash History - Annual Avg	Crashes Saved Annually
Fatal (K)	$ 4,200,000	0	44.0	**0.00**	**0.00**
Serious Injury (A)	$ 4,200,000	0	44.0	**0.00**	**0.00**
Minor Injury (B)	$ 280,000	7	44.0	**1.40**	**0.62**
Possible/Unknown Injury (C)	$ 130,000	10	44.0	**2.00**	**0.88**
Property Damage Only (O)	$ 20,000	31	44.0	**6.20**	**2.73**

Crash Severity	Annual Societal Benefit
Fatal (K)	**$ -**
Serious Injury (A)	**$ -**
Minor Injury (B)	**$ 172,480**
Possible/Unknown Injury (C)	**$ 114,400**
Property Damage Only (O)	**$ 54,560**

Total Benefits and Costs

		Implementation Cost	$ 841,180
		Present Value of Maint.	$ 187,051
Present Value Benefits (Societal Benefits)	$ 4,044,415	Present Value Costs (Impl. and Maint. Costs)	$ 1,028,231
Present Value Net Return	$ 3,016,184		
Benefit Cost Ratio	**3.93**		

Version: Crash costs escalated from 2018

Application for SITE-SPECIFIC TSIP FUNDS

GENERAL INFORMATION **DATE:** 7-01-2024

Location / Title of Project: INTERSECTION OF BLAIRS FERRY ROAD NE AND DRY CREEK LANE NE

Applicant: City of Cedar Rapids

Contact Person: Marcus Januario, PE Title: Traffic Engineer II

Complete Mailing Address: 500 15th Avenue SW
Cedar Rapids, IA 52404

Phone: (319) 286-5729 (Area Code) E-Mail: m.januario@cedar-rapids.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) _____

Contact Person _____ Title _____

Complete Mailing Address _____

_____

Phone _____ (Area Code) E-Mail _____

PLEASE COMPLETE THE FOLLOWING PROJECT INFORMATION:

Funding Amount

Total Safety Cost	$ 404,501
Total Project Cost	$ 508,336
Safety Funds Requested	$ 404,501

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 City of Cedar Rapids

Signed: Brenna Fall — 08/14/2024

Signature — Date Signed

Brenna Fall, PE

Printed Name

Attest: Kathy Jo Holmes — 8/14/24

Signature — Date Signed

Kathy Jo Holmes

Printed Name

NOTARIAL SEAL IOWA

KATHY JO HOLMES
Commission Number 750734
My Commission Expires
01-15-2026

Council Agenda Item Cover Sheet

Submitting Department: Public Works
Director Contact: Brenna Fall – b.fall@cedar-rapids.org – (319) 270-7661

Presenter at Meeting: Cari Pauli, PE

Description of Agenda Item: Purchases, contracts and agreements
Resolution authorizing the application for a Transportation Safety Improvement Program grant from the Iowa Department of Transportation for safety improvements at the intersection of Blairs Ferry Road NE and Dry Creek Lane NE.
CIP/DID #60-25-003

Council Priority: Clean and Safe City
EnvisionCR Goal: ConnectCR Goal 4: Improve the function and appearance of our key corridors.

Background: The Iowa Department of Transportation (Iowa DOT) has established the Transportation Safety Program (TSIP), which provides funding for locations where vehicular safety is a concern and documented. The intersection of Blairs Ferry Road NE and Dry Creek Lane NE has significant crash history, which can be reduced with the proposed improvements.

Recommended Action: The Public Works Department recommends approving the application for TSIP grant funding from the Iowa DOT, which will be used to transform the intersection onto a 3/4 intersection, with the north and south left-out and through movements being prohibited.

Alternative: Should Council determine not to approve this resolution, the application for TSIP grant funding will not be submitted to the Iowa DOT and the intersection of Blairs Ferry Road NE and Dry Creek Lane NE will not be changed.

Time Sensitivity: Normal

Resolution Date: July 23, 2024

Budget Information: NA

Local Preference Policy: Not applicable
Explanation: NA

Recommended by Council Committee: Not applicable
Explanation: NA

Background:

The intersection of Blairs Ferry Road NE and Dry Creek Lane NE is a two-way stop-controlled intersection at the south and northbound approaches. It is a full intersection where all movements are allowed. At the intersection, Blairs Ferry Road NE is a minor arterial, and Dry Creek Lane NE is a local road. According to the Iowa DOT AADT maps, Blairs ferry Road NE had an average daily traffic (AADT) of 23,100 vehicles per day (vpd) in 2021, while Dry Creek Lane NE had an estimated AADT of 3,100 and 900 vehicles per hour north and south of Blairs Ferry Road, respectively, according to data collected on May 25, 2024.

The intersection is located about 800 feet east of Council St NE and 900 feet west of Sammi Dr NE, both signalized intersections along Blairs Ferry Road NE. During peak hours, queues at those two intersections may extend pass Dry Creek, impacting network traffic circulation, and access to/from businesses.

With the development and redevelopment of areas both north and south of Blairs Ferry Road NE, along and nearby Dry Creek Lane NE, the traffic volumes on the latter have significantly increased in the last ten years and is expected to maintain over the next years.

Crash History:

Available 5-year crash history (2019-2023) shows 14 crashes, resulting in an average of 2.8 crashes per year, with a high percentage of them being due to failing to yield right-of-way (FTYROW), both from stop sign or making left turn. Although the intersection is properly signed per MUTCD requirements, the rate of occurrence of FTYROW is high, leading to the high percentage of rear-end, angle, and broadside crashes, with 4, 4 and 6 occurrences, respectively. Experience shows that the two latter types tend to increase in both severity and more frequency as traffic volumes grow.

Proposed Improvements:

The proposed improvement is to convert to a ¾ intersection from the existing full intersection. The conversion will eliminate the northbound and southbound left turning movements and conflicts, which are the movements most likely to be connected to crashes. The conversion is likely to significantly improve traffic operations and safety. On the other side, the CMF value converting to a ¾ intersection from a full intersection is 0.49, which indicates 51.0% reduction in crashes, as follows:

- CMF ID: 357 – Replace Direct Left-Turn with Right-Turn/U-Turn (¾ Intersection)
  - Previous Condition: Two-Way Stop-Controlled Intersection
  - CMF Value 0.49
  - CRF Values: 51%
  - CMF Rate: 3 stars
  - Crash Type: Any
  - Crash Severity: Any
  - Minimum and Maximum of 4 lanes
  - Area Type: All
  - Time of Day: All
  - Number of Legs: 4
  - Previous Control Type: Stop-Control

CMF 357 was utilized in this application due to the similarities between the original study site and the application site.

The conversion to a ¾ intersection from a current full intersection will remove the north-south left-out movements, which are the movements more likely to get involved in a crash. Therefore, this modification will significantly improve safety and operations at the intersection.

Using the DOT-provided Benefit-Cost worksheet, with associated project cost and crash history, it was found that the proposed improvements would have a Benefit-Cost Ratio of **3.03.**

Blairs Ferry at Dry Creek							
Item no.	**Item**	**Unit**	**Unit Price**	**Quantity**	Safety Cost	Non Participating Cost	Total Cost
1	Removal of strucutre, Manholes & Intakes	EA	$550.00	4.0		$2,200.00	$2,200.00
2	Pavement Removal	SY	$7.50	4981.0	$37,357.50		$37,357.50
3	PCC Sidewalk 5"	SY	$75.00	753.0		$56,475.00	$56,475.00
4	Detectable Warnings	SF	$50.00	160.0		$8,000.00	$8,000.00
5	PCC Pavement 9"	SY	$65.00	4981.0	$323,765.00		$323,765.00
6	Raised Median PCC 6"	SY	$80.00	313.0	$25,040.00		$25,040.00
7	Painted Symbols	EA	$325.00	4.0	$1,300.00		$1,300.00
8	Pavement Markings, Durable	LF	$1.35	3812.0	$5,146.20		$5,146.20
9	Intake, SW-507	EA	$5,850.00	4.0		$23,400.00	$23,400.00
10	Inlet Protection Device, Surface-Applied	EA	$100.00	4.0		$400.00	$400.00
11	Traffic Signs	SF	$21.50	32.2	$692.78		$692.78
12	Perforated Square Steel Tube Posts	LF	$15.00	80.0	$1,200.00		$1,200.00
13	Right of Way Acquisition	Ac	$12,000.00	0.3		$3,360.00	$3,360.00
14	Construction Staking	LS	$10,000.00	1.0	$10,000.00		$10,000.00
15	Mobilization	LS	$10,000.00	1.0		$10,000.00	$10,000.00
					----------	----------	----------
			TOTAL:		$404,501.48	$103,835.00	$508,336.48
			CONTINGENCY (10%)		$40,450.15	$10,383.50	$50,833.65
			TOTAL COST OPINION		**$444,951.63**	**$114,218.50**	**$559,170.13**

Time Schedule for Proposed Project

Blairs Ferry Road NE and Dry Creek Drive NE Intersection Improvement

August 15, 2024	**--**	**TSIP application deadline**
January 15, 2025	**--**	**TSIP approval**
July 1st, 2025	**--**	**Funding Available**
July 2, 2025	**--**	**Council Approval of Bid Documents**
October 8, 2025	**--**	**Local Letting for project**
April 6, 2026	**--**	**Project Construction Starts**
August 7, 2026	**--**	**Substantial completion of project**

Project Location

Blairs Ferry Rd NE & Dry Creek Dr NE

EXHIBIT E - LOCATION MAP

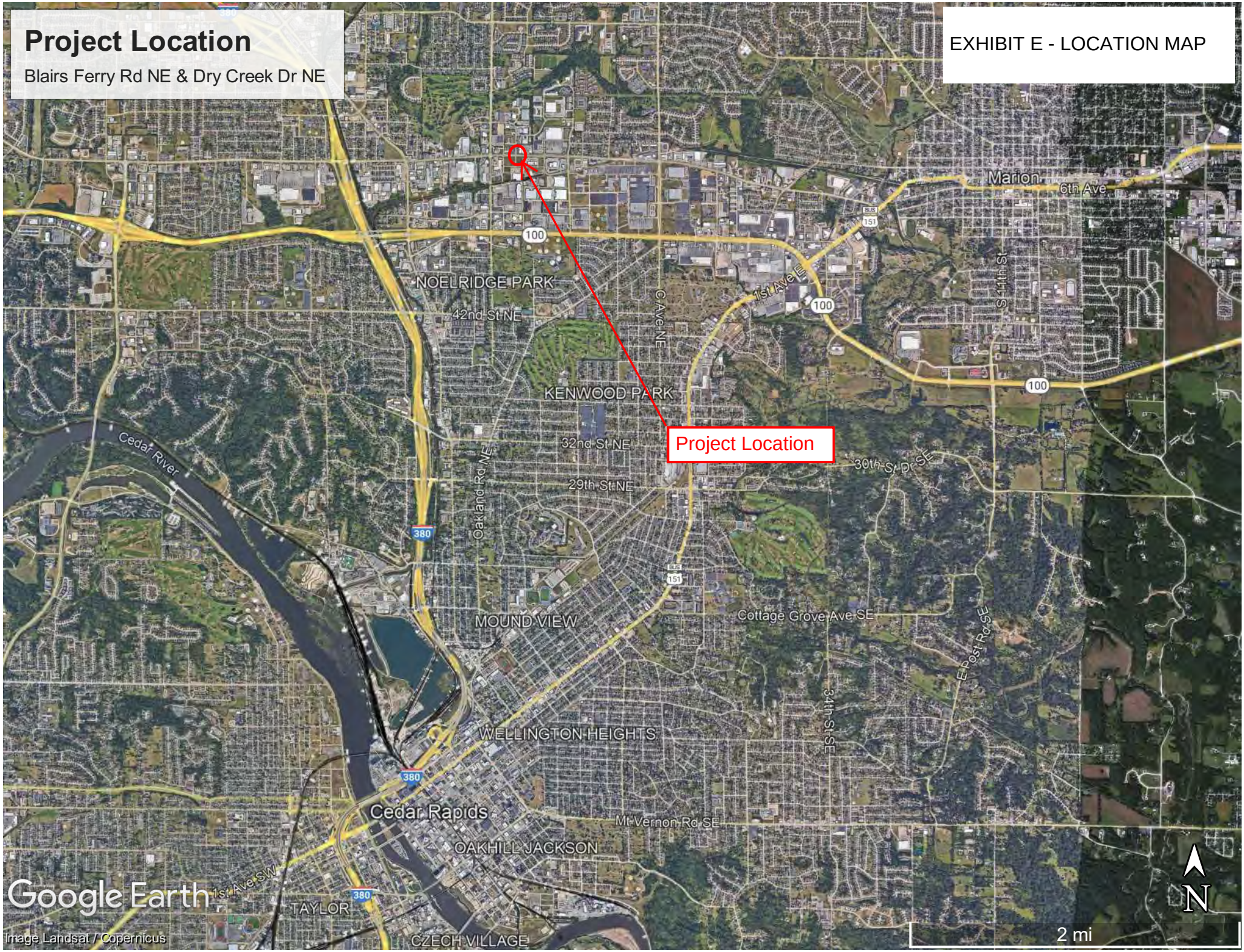


Figure 1 – Looking west.

Figure 2- Looking east from Ellis Road

Figure 3 – Looking south from Dry Creek Lane

Figure 4 – Looking north from Dry Creek Lane

Figure 5 – Cars queued on the northbound approach.

Figure 6 – Cars queued on the southbound approach.

Figure 7 – Westbound car turning left

Figure 8 – Businesses on the northeast corner

Figure 9 – Collins Aerospace south of the intersection

Figure 10 – Businesses on the northwest corner

PREPARED BY:

CITY OF CEDAR RAPIDS, PUBLIC WORKS
500 15TH AVENUE SW, CEDAR RAPIDS, IA 52404
PHONE: 319-286-5802

No.	REVISION DESCRIPTION	APPROVED	DATE
XX	DESCRIPTION	XXX	MM/DD/YYYY

CEDAR RAPIDS
City of Five Seasons

Date:	05/02/2024
Drawn By:	MBoyer
Approved By:	RGGriffith
CIP No:	

BLAIRS FERRY RD NE & DRY CREEK

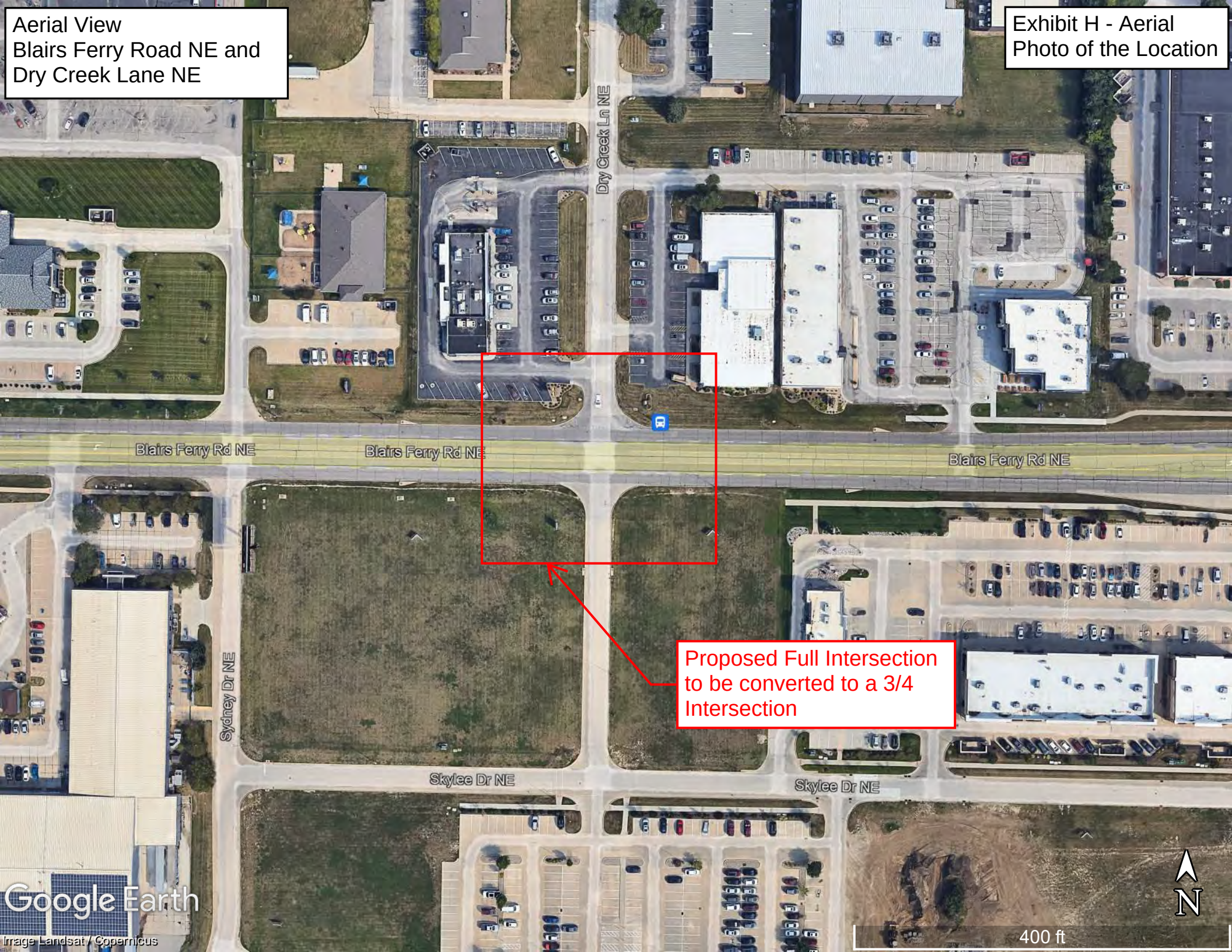
PROPOSED INTERSECTION MODIFICATION LAYOUT

SHEET No.
EX.1
EX.1

Plot Date: ---
File Name: \\cityc\local\shared\docs\pw\traffic\locations\ne\blairs ferry rd ne\blairs ferry rd ne at dry creek in ne\cad\blairs border.dgn

Aerial View
Blairs Ferry Road NE and
Dry Creek Lane NE

Exhibit H - Aerial
Photo of the Location



Iowa Crash Analysis Tool
Quick Report
2019-2023

Crash Severity	14
Fatal Crash	0
Suspected Serious Injury Crash	0
Suspected Minor Injury Crash	2
Possible/Unknown Injury Crash	3
Property Damage Only	9

Injury Status Summary	7
Fatalities	0
Suspected serious/incapacitating	0
Suspected minor/non-incapacitating	3
Possible (complaint of pain/injury)	4
Uninjured	0
Unknown	0
Not Reported	0

Property/Vehicles/Occupants	
Property Damage Total (dollars):	125,530.00
Average (per crash dollars):	8,966.43
Total Vehicles:	29.00
Average (per crash):	2.07
Total Occupants:	37.00
Average (per crash):	2.64

Average Severity	
Fatalities/Fatal Crash:	0.00
Fatalities/Crash:	0.00
Injuries/Crash:	0.50
Major Injuries/Crash:	0.00
Minor Injuries/Crash:	0.21
Possible/Unknown Injuries/Crash:	0.29

Major Cause			14
Animal	0	Ran traffic signal	0
Ran stop sign	0	Failed to yield to emergency vehicle	0
FTYROW: At uncontrolled intersection	0	FTYROW: Making right turn on red signal	0
FTYROW: From stop sign	6	FTYROW: From yield sign	0
FTYROW: Making left turn	2	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	1	Improper or erratic lane changing	0
Operating vehicle in an reckless/erratic/care...	0	Followed too close	1
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	1
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	1
Unknown	1	Not reported	0
Other: No improper action	0		

Iowa Crash Analysis Tool
Quick Report
2019-2023

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	0	0	0	0	0	0	0	1
Tuesday	0	0	0	0	1	0	2	1	1	1	0	0	0	6
Wednesday	0	0	0	0	1	0	1	0	1	0	0	0	0	3
Thursday	0	0	0	0	0	1	2	0	0	0	0	0	0	3
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	2	1	5	1	3	1	0	0	0	14

Manner of Crash Collision	**14**
Non-collision (single vehicle)	0
Head-on (front to front)	0
Rear-end (front to rear)	4
Angle (oncoming left turn)	4
Broadside (front to side)	6
Sideswipe (same direction)	0
Sideswipe (opposite direction)	0
Rear to rear	0
Rear to side	0
Not reported	0
Other	0
Unknown	0

Surface Conditions	**14**
Dry	11
Wet	2
Ice/frost	0
Snow	1
Slush	0
Mud/dirt	0
Water (standing or moving)	0
Sand	0
Oil	0
Gravel	0
Not reported	0
Other	0
Unknown	0

Fixed Object Struck			**29**
Bridge overhead structure	0	Bridge pier or support	0
Bridge/bridge rail parapet	0	Curb/island/raised median	0
Ditch	0	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)	29

Crash Severity - Annual

Crash Year	Fatal Crash	Suspected Serious Injury Crash	Suspected Minor Injury Crash	Possible/Unknown Injury Crash	Property Damage Only	**Total**
2014	0	0	0	0	0	0
2015	0	0	0	0	0	0
2016	0	0	0	0	0	0
2017	0	0	0	0	0	0
2018	0	0	0	0	0	0
2019	0	0	1	1	2	4
2020	0	0	0	1	2	3
2021	0	0	0	0	3	3
2022	0	0	0	0	2	2
2023	0	0	1	1	0	2
2024	0	0	0	0	0	0
Total	0	0	2	3	9	14

Severity/Year

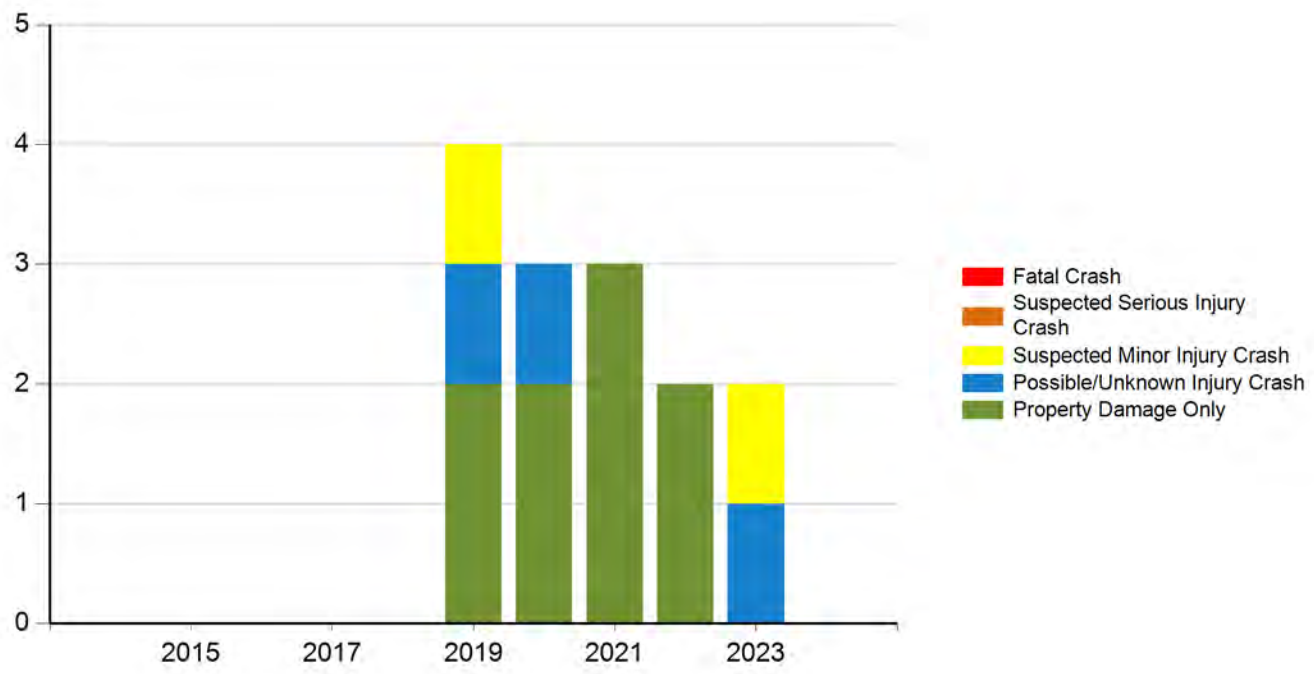


Exhibit J - Turning Movement Counts

City of Cedar Rapids (IA)
101 First Street SE
PO Box 2148
Cedar Rapids, Iowa, United States 52406
319 286 5176 l.miller2@cedar-rapids.org

Count Name: Blairs Ferry Road NE at Dry Creek Ln
Site Code:
Start Date: 06/25/2024
Page No: 1

Turning Movement Data

Start Time	Blairs Ferry Road NE Eastbound				Blairs Ferry Road NE Westbound				Dry Creek Lane NE Northbound				Dry Creek Lane NE Southbound				
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
12:00 AM	0	10	0	10	0	20	0	20	0	0	0	0	0	0	0	0	30
12:15 AM	0	17	0	17	0	12	1	13	0	0	0	0	1	0	0	1	31
12:30 AM	0	14	0	14	0	13	0	13	0	0	0	0	0	0	2	2	29
12:45 AM	1	9	0	10	0	12	0	12	0	0	0	0	0	0	1	1	23
Hourly Total	1	50	0	51	0	57	1	58	0	0	0	0	1	0	3	4	113
1:00 AM	0	8	0	8	0	10	0	10	1	0	0	1	0	0	0	0	19
1:15 AM	0	9	0	9	0	12	0	12	0	0	0	0	2	0	0	2	23
1:30 AM	0	4	0	4	0	8	0	8	0	0	0	0	0	0	1	1	13
1:45 AM	0	7	0	7	0	9	0	9	0	0	0	0	0	0	0	0	16
Hourly Total	0	28	0	28	0	39	0	39	1	0	0	1	2	0	1	3	71
2:00 AM	0	3	0	3	0	7	1	8	0	0	0	0	0	0	0	0	11
2:15 AM	0	9	0	9	0	6	0	6	0	0	0	0	1	0	0	1	16
2:30 AM	0	6	0	6	0	6	1	7	0	0	0	0	0	0	1	1	14
2:45 AM	0	7	0	7	0	4	1	5	1	1	0	2	0	0	0	0	14
Hourly Total	0	25	0	25	0	23	3	26	1	1	0	2	1	0	1	2	55
3:00 AM	0	12	0	12	0	8	0	8	1	0	0	1	0	0	0	0	21
3:15 AM	0	5	0	5	0	4	0	4	0	0	0	0	0	0	1	1	10
3:30 AM	0	6	0	6	0	5	0	5	0	0	0	0	0	0	1	1	12
3:45 AM	1	14	0	15	0	9	0	9	0	0	0	0	0	0	0	0	24
Hourly Total	1	37	0	38	0	26	0	26	1	0	0	1	0	0	2	2	67
4:00 AM	0	8	0	8	1	6	1	8	1	0	0	1	1	0	3	4	21
4:15 AM	0	13	0	13	0	9	0	9	0	0	0	0	0	0	0	0	22
4:30 AM	2	21	0	23	0	26	1	27	0	0	0	0	1	0	0	1	51
4:45 AM	7	34	0	41	0	13	1	14	0	0	0	0	0	0	2	2	57
Hourly Total	9	76	0	85	1	54	3	58	1	0	0	1	2	0	5	7	151
5:00 AM	1	24	1	26	0	25	0	25	1	0	0	1	0	0	1	1	53
5:15 AM	4	29	1	34	0	33	1	34	0	0	1	1	1	0	1	2	71
5:30 AM	2	43	0	45	0	47	0	47	1	0	0	1	3	0	3	6	99
5:45 AM	8	63	0	71	0	46	1	47	2	1	0	3	0	0	5	5	126
Hourly Total	15	159	2	176	0	151	2	153	4	1	1	6	4	0	10	14	349
6:00 AM	3	48	2	53	0	81	6	87	2	2	0	4	5	0	8	13	157
6:15 AM	6	61	3	70	0	100	6	106	0	0	1	1	1	0	5	6	183
6:30 AM	8	85	1	94	1	124	3	128	2	0	0	2	1	0	7	8	232
6:45 AM	13	132	6	151	3	110	11	124	2	0	3	5	2	1	15	18	298
Hourly Total	30	326	12	368	4	415	26	445	6	2	4	12	9	1	35	45	870
7:00 AM	18	116	10	144	7	115	9	131	1	0	1	2	3	0	10	13	290

7:15 AM	19	133	7	159	4	146	19	169	2	1	6	9	3	0	17	20	357
7:30 AM	23	156	10	189	4	141	18	163	1	0	2	3	5	0	23	28	383
7:45 AM	38	233	14	285	10	162	17	189	2	1	7	10	5	0	15	20	504
Hourly Total	98	638	41	777	25	564	63	652	6	2	16	24	16	0	65	81	1534
8:00 AM	18	174	4	196	5	137	13	155	5	1	8	14	3	1	14	18	383
8:15 AM	10	147	4	161	6	130	7	143	0	2	3	5	4	0	12	16	325
8:30 AM	13	188	5	206	1	144	15	160	0	0	1	1	2	0	15	17	384
8:45 AM	18	180	5	203	2	140	4	146	1	1	5	7	8	0	12	20	376
Hourly Total	59	689	18	766	14	551	39	604	6	4	17	27	17	1	53	71	1468
9:00 AM	7	189	3	199	0	124	10	134	4	0	1	5	4	1	14	19	357
9:15 AM	9	151	4	164	0	136	11	147	2	0	1	3	6	0	20	26	340
9:30 AM	11	157	7	175	2	150	9	161	3	0	1	4	3	0	15	18	358
9:45 AM	12	188	3	203	5	183	7	195	2	0	1	3	2	0	12	14	415
Hourly Total	39	685	17	741	7	593	37	637	11	0	4	15	15	1	61	77	1470
10:00 AM	10	193	5	208	2	168	12	182	3	1	2	6	4	1	20	25	421
10:15 AM	17	208	1	226	2	167	10	179	0	1	1	2	7	1	17	25	432
10:30 AM	15	164	6	185	3	181	11	195	1	3	2	6	4	0	11	15	401
10:45 AM	7	212	4	223	5	206	9	220	2	0	2	4	3	0	13	16	463
Hourly Total	49	777	16	842	12	722	42	776	6	5	7	18	18	2	61	81	1717
11:00 AM	10	236	2	248	5	185	12	202	0	0	1	1	5	2	20	27	478
11:15 AM	13	237	4	254	3	194	16	213	7	1	2	10	2	1	26	29	506
11:30 AM	16	227	9	252	8	209	15	232	3	1	4	8	8	2	23	33	525
11:45 AM	20	224	10	254	3	218	8	229	1	0	4	5	6	1	19	26	514
Hourly Total	59	924	25	1008	19	806	51	876	11	2	11	24	21	6	88	115	2023
12:00 PM	23	238	8	269	3	214	17	234	3	2	4	9	9	1	33	43	555
12:15 PM	20	250	9	279	3	193	20	216	4	0	5	9	12	1	28	41	545
12:30 PM	24	255	5	284	2	213	21	236	1	2	3	6	3	0	29	32	558
12:45 PM	18	248	9	275	3	238	25	266	2	2	3	7	5	1	24	30	578
Hourly Total	85	991	31	1107	11	858	83	952	10	6	15	31	29	3	114	146	2236
1:00 PM	22	229	5	256	2	209	22	233	0	0	1	1	4	2	28	34	524
1:15 PM	16	226	10	252	3	207	14	224	1	1	3	5	4	0	35	39	520
1:30 PM	12	233	3	248	2	191	11	204	2	1	2	5	1	1	19	21	478
1:45 PM	12	235	8	255	4	212	15	231	1	1	4	6	6	2	16	24	516
Hourly Total	62	923	26	1011	11	819	62	892	4	3	10	17	15	5	98	118	2038
2:00 PM	15	236	3	254	5	209	11	225	2	1	3	6	4	1	20	25	510
2:15 PM	11	202	10	223	1	204	15	220	1	2	2	5	2	0	22	24	472
2:30 PM	9	217	4	230	1	217	6	224	1	0	0	1	5	0	10	15	470
2:45 PM	12	247	2	261	2	200	14	216	1	0	1	2	4	0	18	22	501
Hourly Total	47	902	19	968	9	830	46	885	5	3	6	14	15	1	70	86	1953
3:00 PM	18	262	4	284	1	193	18	212	2	0	5	7	5	0	22	27	530
3:15 PM	13	247	6	266	4	209	10	223	0	0	4	4	6	0	8	14	507
3:30 PM	7	259	8	274	7	303	12	322	1	1	5	7	6	0	23	29	632
3:45 PM	12	268	4	284	3	247	8	258	1	0	3	4	3	1	22	26	572
Hourly Total	50	1036	22	1108	15	952	48	1015	4	1	17	22	20	1	75	96	2241
4:00 PM	16	253	1	270	7	249	11	267	1	1	4	6	6	0	25	31	574
4:15 PM	15	317	6	338	5	234	8	247	0	0	3	3	7	0	15	22	610
4:30 PM	13	273	7	293	7	239	11	257	2	2	5	9	3	0	35	38	597
4:45 PM	15	300	10	325	6	229	20	255	2	1	6	9	3	0	27	30	619
Hourly Total	59	1143	24	1226	25	951	50	1026	5	4	18	27	19	0	102	121	2400
5:00 PM	14	322	11	347	7	232	14	253	3	0	3	6	4	1	62	67	673
5:15 PM	13	306	10	329	4	229	11	244	2	1	8	11	3	0	24	27	611
5:30 PM	7	250	3	260	4	211	7	222	1	1	3	5	4	0	37	41	528

5:45 PM	13	208	8	229	1	177	8	186	5	1	2	8	4	0	18	22	445
Hourly Total	47	1086	32	1165	16	849	40	905	11	3	16	30	15	1	141	157	2257
6:00 PM	14	226	5	245	4	149	8	161	3	2	2	7	7	0	24	31	444
6:15 PM	11	172	5	188	1	177	5	183	4	1	1	6	5	1	16	22	399
6:30 PM	7	145	10	162	3	166	3	172	5	0	2	7	3	0	10	13	354
6:45 PM	11	168	1	180	0	137	6	143	1	1	1	3	3	1	8	12	338
Hourly Total	43	711	21	775	8	629	22	659	13	4	6	23	18	2	58	78	1535
7:00 PM	8	164	3	175	2	131	14	147	3	0	0	3	10	1	5	16	341
7:15 PM	9	147	4	160	1	145	7	153	2	0	0	2	3	1	13	17	332
7:30 PM	8	148	3	159	0	131	4	135	0	0	4	4	4	1	14	19	317
7:45 PM	8	121	4	133	2	126	1	129	3	0	1	4	5	0	5	10	276
Hourly Total	33	580	14	627	5	533	26	564	8	0	5	13	22	3	37	62	1266
8:00 PM	13	108	6	127	1	110	5	116	3	1	0	4	6	0	7	13	260
8:15 PM	9	98	3	110	1	116	2	119	1	1	1	3	3	0	6	9	241
8:30 PM	8	103	0	111	1	103	4	108	1	0	0	1	3	0	11	14	234
8:45 PM	8	64	2	74	1	85	5	91	1	2	0	3	3	0	8	11	179
Hourly Total	38	373	11	422	4	414	16	434	6	4	1	11	15	0	32	47	914
9:00 PM	5	66	1	72	0	72	6	78	1	1	0	2	2	0	8	10	162
9:15 PM	6	74	0	80	0	87	4	91	2	0	0	2	3	0	6	9	182
9:30 PM	9	56	0	65	1	71	6	78	1	0	0	1	5	0	8	13	157
9:45 PM	2	52	1	55	1	41	6	48	2	0	0	2	1	1	7	9	114
Hourly Total	22	248	2	272	2	271	22	295	6	1	0	7	11	1	29	41	615
10:00 PM	2	54	0	56	0	52	3	55	3	0	0	3	4	0	5	9	123
10:15 PM	11	38	0	49	0	41	1	42	1	0	0	1	1	1	4	6	98
10:30 PM	1	38	2	41	0	39	2	41	0	0	0	0	1	0	3	4	86
10:45 PM	1	34	0	35	0	26	2	28	0	0	0	0	3	0	4	7	70
Hourly Total	15	164	2	181	0	158	8	166	4	0	0	4	9	1	16	26	377
11:00 PM	2	28	0	30	0	14	2	16	0	0	0	0	3	0	2	5	51
11:15 PM	4	35	0	39	0	19	2	21	0	0	0	0	1	0	2	3	63
11:30 PM	3	29	0	32	0	11	2	13	0	0	0	0	1	0	1	2	47
11:45 PM	2	20	0	22	0	9	0	9	0	0	0	0	0	0	2	2	33
Hourly Total	11	112	0	123	0	53	6	59	0	0	0	0	5	0	7	12	194
Grand Total	872	12683	335	13890	188	11318	696	12202	130	46	154	330	299	29	1164	1492	27914
Approach %	6.3	91.3	2.4	-	1.5	92.8	5.7	-	39.4	13.9	46.7	-	20.0	1.9	78.0	-	-
Total %	3.1	45.4	1.2	49.8	0.7	40.5	2.5	43.7	0.5	0.2	0.6	1.2	1.1	0.1	4.2	5.3	-
Lights	854	12488	331	13673	188	11120	685	11993	128	46	152	326	297	29	1148	1474	27466
% Lights	97.9	98.5	98.8	98.4	100.0	98.3	98.4	98.3	98.5	100.0	98.7	98.8	99.3	100.0	98.6	98.8	98.4
Mediums	10	147	3	160	0	153	7	160	0	0	2	2	2	0	12	14	336
% Mediums	1.1	1.2	0.9	1.2	0.0	1.4	1.0	1.3	0.0	0.0	1.3	0.6	0.7	0.0	1.0	0.9	1.2
Articulated Trucks	8	48	1	57	0	45	4	49	2	0	0	2	0	0	4	4	112
% Articulated Trucks	0.9	0.4	0.3	0.4	0.0	0.4	0.6	0.4	1.5	0.0	0.0	0.6	0.0	0.0	0.3	0.3	0.4

City of Cedar Rapids (IA)
101 First Street SE
PO Box 2148
Cedar Rapids, Iowa, United States 52406
319 286 5176 l.miller2@cedar-rapids.org

Count Name: Blairs Ferry Road NE at Dry Creek Ln
Site Code:
Start Date: 06/25/2024
Page No: 4

Dry Creek Lane NE [SB]		
Out	In	Total
1585	1474	3059
17	14	31
12	4	16
1614	**1492**	**3106**

1148	29	297
12	0	2
4	0	0
1164	**29**	**299**
R	T	L

Blairs Ferry Road NE [EB]		
Out	In	Total
12396	13673	26069
165	160	325
51	57	108
12612	**13890**	**26502**

331	12488	854
3	147	10
1	48	8
335	**12683**	**872**
R	T	L

06/25/2024 12:00 AM
Ending At
06/26/2024 12:00 AM

Lights
Mediums
Articulated Trucks

L	T	R
128	46	152
0	0	2
2	0	0
130	**46**	**154**

548	326	874
3	2	5
1	2	3
552	**330**	**882**
Out	In	Total
Dry Creek Lane NE [NB]		

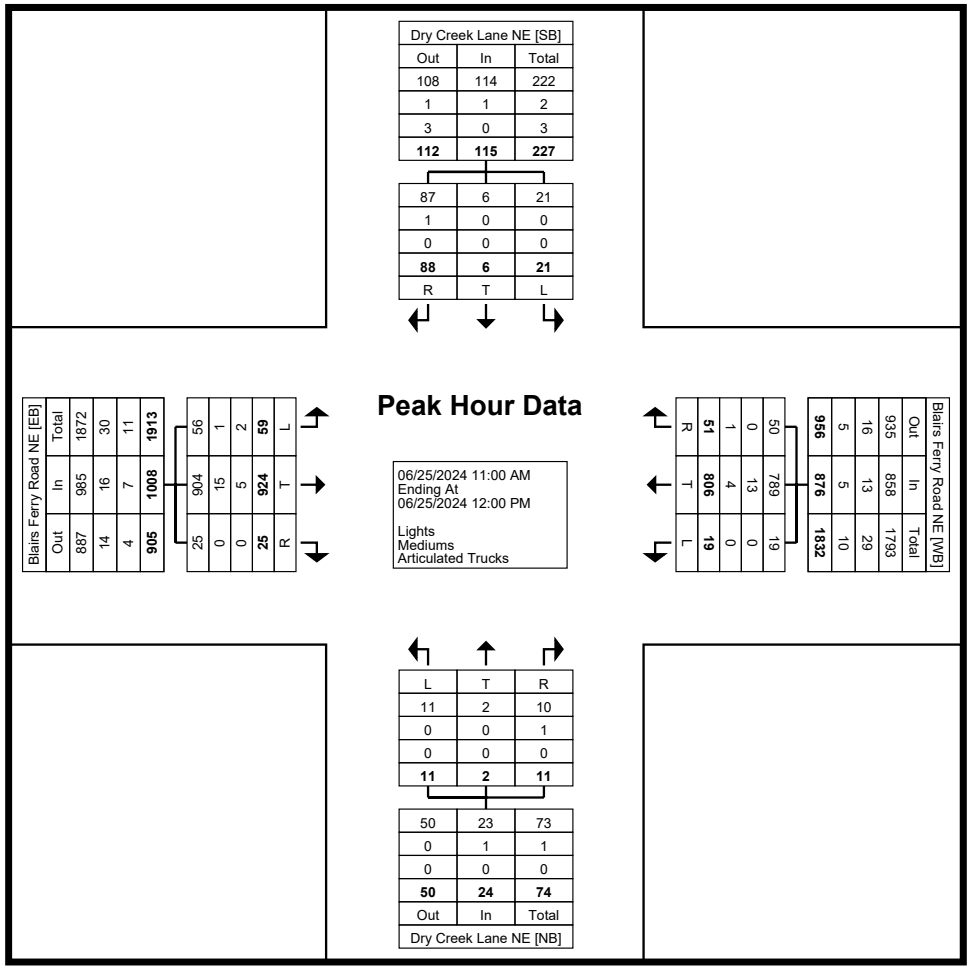
R	T	L
696	**11318**	**188**
4	45	0
7	153	0
685	11120	188

13136	**12202**	**25338**
48	49	97
151	160	311
12937	11993	24930
Out	In	Total
Blairs Ferry Road NE [WB]		

Turning Movement Data Plot

City of Cedar Rapids (IA)
101 First Street SE
PO Box 2148
Cedar Rapids, Iowa, United States 52406
319 286 5176 l.miller2@cedar-rapids.org

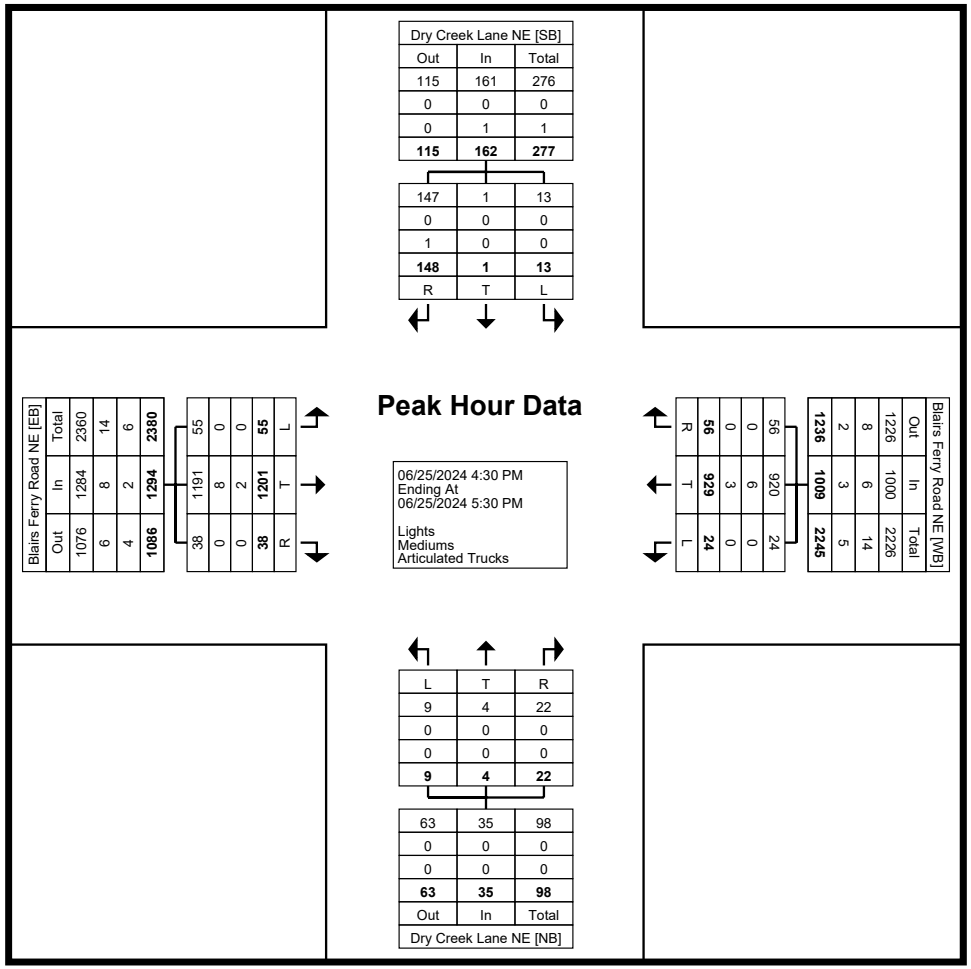
Count Name: Blairs Ferry Road NE at Dry Creek Ln
Site Code:
Start Date: 06/25/2024



Turning Movement Peak Hour Data Plot (11:00 AM)

City of Cedar Rapids (IA)
101 First Street SE
PO Box 2148
Cedar Rapids, Iowa, United States 52406
319 286 5176 l.miller2@cedar-rapids.org

Count Name: Blairs Ferry Road NE at Dry Creek Ln
Site Code:
Start Date: 06/25/2024



Turning Movement Peak Hour Data Plot (4:30 PM)

County:	Linn	Prepared By:	MHJ
Location:	Blairs Ferry Rd NE and Dry Creek Dr N	Date Prepared:	6/30/2024
Proposed Improvements:	Replace current stop-controlled intersection with a signalized intersection. Add sidewald and ramps, MAKE IT ADA compliant.		
Estimated Improvement Cost:	$ 508,336		
Inflation on Crash Costs:	4%	Annual Maintenance: (% of Improvement Cost)	2%
Discount Rate:	4%		
Estimated Service Life:	20	Annual Maintenance Cost:	$ 10,167

Method Choice: CRF Method

The Crash Reduction Factor (CRF) Method applies one to three CRFs to historical crashes to estimate reductions in future crashes. Crash Modification Factors (CMFs) can be converted to CRFs. For additional information, click the "Learn More" button.

Crash Reduction Factor (CRF) Method

Traffic Growth Factor:	1%
Number of CRFs:	1
Years of Crash History:	5

Combined CRF (Dominant Common Residuals Method)

Iowa DOT's preferred methodology for combining CRFs is Dominant Common Residuals, since it is more conservative than the other options.

	CRF 1:	Combined CRF	
CRF Value (%)	58.73	**58.7**	
Equivalent CMF	0.41		Is Dom. Com. Resd.
Combined CMF, if # used (DR)	0.41	0.41	TRUE
Combined CMF, if # used (Mult)	0.41		Is data entered befc
Pick Dom Com. Resd. Or Mult. Fo	0.41	0.41	FALSE

Crash Severity	Rounded Societal Costs	Crash History (Total):	CRF (from above)	Crash History - Annual Avg	Crashes Saved Annually
Fatal (K)	$ 4,200,000	0	58.7	**0.00**	**0.00**
Serious Injury (A)	$ 4,200,000	0	58.7	**0.00**	**0.00**
Minor Injury (B)	$ 280,000	2	58.7	**0.40**	**0.23**
Possible/Unknown Injury (C)	$ 130,000	3	58.7	**0.60**	**0.35**
Property Damage Only (O)	$ 20,000	9	58.7	**1.80**	**1.06**

Crash Severity	Annual Societal Benefit
Fatal (K)	**$ -**
Serious Injury (A)	**$ -**
Minor Injury (B)	**$ 65,778**
Possible/Unknown Injury (C)	**$ 45,809**
Property Damage Only (O)	**$ 21,143**

Total Benefits and Costs

		Implementation Cost	$ 508,336
		Present Value of Maint.	$ 138,169
Present Value Benefits (Societal Benefits)	$ 1,960,513	Present Value Costs (Impl. and Maint. Costs)	$ 646,505
Present Value Net Return	$ 1,314,008		

County:	Linn	Prepared By:	MHJ
Location:	Blairs Ferry Rd NE and Dry Creek Dr N	Date Prepared:	6/30/2024
Benefit Cost Ratio	**3.03**		

Form continues on next page

Rev. 07/23

Application for SITE-SPECIFIC TSIP FUNDS

GENERAL INFORMATION **DATE:** August 13, 2024

Location / Title of Project 16th Street NW & Mill Creek Parkway Left Turn Lanes

Applicant City of Clinton, Iowa

Contact Person Jason Craft Title City Engineer

Complete Mailing Address 611 South 3rd Street

Phone 563-244-3423 (Area Code) E-Mail jasoncraft@cityofclintoniowa.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	$	399,090
Total Project Cost	$	449,090
Safety Funds Requested	**$**	**399,090**

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
		☐	☐		
		☐	☐		

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 Clinton, Iowa

Signed: _____ 8/13/2024
Signature — Date Signed

Jason Craft
Printed Name

Attest: Madison Good — 08/13/2024
Signature — Date Signed

Madison Good
Printed Name

RESOLUTION NO.

RESOLUTION APPROVING OFFICIAL ENDORSEMENT OF FUNDING APPLICATION TO IOWA DEPARTMENT OF TRANSPORTRAION FOR THE 2026 TRAFFIC SAFETY IMPROVEMENT PROGRAM FOR THE 16TH STREET NW & MILL CREEK PARKWAY TURN LANES PROJECT

WHEREAS, the Iowa Department of Transportation is accepting applications for the Traffic Safety Improvement Program (TSIP) on August 15, 2024; and,

WHEREAS, the TSIP allows cities and counties throughout Iowa to apply for funding for traffic safety improvements on public roads under local jurisdiction; and,

WHEREAS, the crash history and traffic volumes along at 16th Street NW and Mill Creek Parkway indicate that construction of Left-Turn Lanes along each direction of Mill Creek Parkway would improve safety and efficiency of the roadway segment; and,

WHEREAS, the City Engineering Department has prepared a TSIP grant application in the amount of **$399,090.00** to the Iowa DOT, which would fund the project; and,

THEREFORE, BE IT RESOLVED BY THE CITY COUNCIL OF THE CITY OF CLINTON, IOWA that the that the City Council is supportive of the Traffic Safety Improvement Program Funding Application for the 16th Street NW and Mill Creek Parkway Turn Lane Project in the amount of **$399,090**.

BE IT FURTHER RESOLVED BY THE CITY COUNCIL OF THE CITY OF CLINTON, IOWA that the City of Clinton will be fully responsible for the maintenance of all improvements constructed related to the proposed project.

_____, MAYOR

ATTEST:

_____

CITY CLERK

ADOPTED: _____

16th Street NW & Mill Creek Parkway Traffic Safety Improvement Project

Narrative (Left Turn Lanes)

Overview of Existing & Proposed Conditions

The existing infrastructure at 16th Street NW & Mill Creek Parkway was constructed in 2004 by the City of Clinton. The intersection includes stop signs for 16th Street NW and both streets are two lane roads. The intersection does not meet the standards, including left turn backups along Mill Creek Parkway and high crash rates. The intersection needs renovations to improve the safety and efficiency for drivers.

By widening the intersection and adding designated left turn lanes at the major legs (east and west) of the direction at the intersection, it will eliminate some of the accidents.

1. Total Traffic Volume

The following table shows a summary of traffic counts on the various legs of the intersection of 16th Street NW & Mill Creek Parkway. The Iowa DOT traffic counts used were conducted in 2014. Note that the intersection receives more traffic during school hours at Clinton Middle School which is located near the southeast corner of the intersection.

The year 2034 traffic volumes shown below are shown for planning purposed. This prediction considered a 1% traffic growth per year for the next 20 years. Note that this is very unlikely, but conservative estimate that we used in order to develop the project to the highest possible volume of traffic generated over this time period.

Table 1- 16th St NW & Mill Creek Pkwy Traffic Count (2014)

16th Street NW & Mill Creek Pkwy Traffic Counts (2014)	
Leg of intersection	AADT
North	2970
East	4825
South	1874
West	5816

Table 2- 16th St NW & Mill Creek Pkwy Traffic Count Prediction (2034)

16th Street NW & Mill Creek Pkwy Traffic Counts (2034)	
Leg of intersection	AADT
North	3624
East	5887
South	2287
West	7097

2. Traffic Counts

DOT Traffic Counts (2014)

Left turn movements have been one of the leading causes for crashes at the intersection of 16th St NW & Mill Creek Pkwy. The Iowa DOT turning movement last tested in 2014 shows:

Iowa Department of Transportation
Turning Movement Traffic Count Summary
Annualized Daily Traffic For All Vehicles

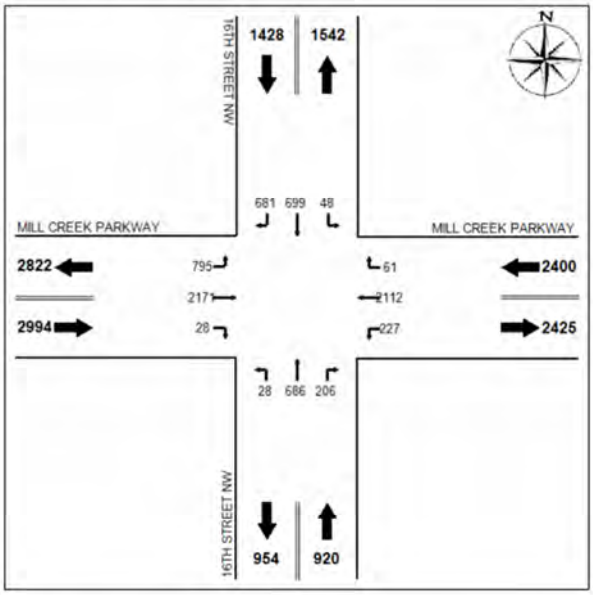
Station Number:
23260577099

Count Date:
Tuesday, September 16, 2014

County:
Clinton

Location Description:
16TH ST NW & MILL CREEK PKWY

Volume Factor: 1.765
Pass Class Factor: 1.900
SU Class Factor: 1.583
Combo Class Factor: 1.196



Raw Data-All Vehicles:

	N Leg			E Leg			S Leg			W Leg		
	L	*T*	*R*	*L*	*T*	*R*	*L*	*T*	*R*	*L*	*T*	*R*
07:00	7	82	64	11	201	2	1	47	17	49	235	3
08:00	6	49	64	10	117	3	2	16	14	32	129	4
11:00	2	36	48	17	126	4	2	26	16	37	100	2
12:00	3	33	31	14	132	2	0	43	18	40	142	1
15:00	7	61	51	23	177	10	7	89	17	108	201	3
16:00	1	51	59	22	206	5	3	80	18	82	183	1
17:00	0	56	44	23	171	6	0	60	9	72	170	1

City Traffic Counts (2024)

An updated count was performed on August 6, 2024. The chart below shows slightly less left turning vehicles from the west bound leg of the intersection, but that is expected to increase to an estimated 105 cars during the peak hour while school is in session, which is similar to the DOT counts above.

PM PEAK TIME PERIOD	NORTHBOUND ON			WESTBOUND ON			SOUTHBOUND ON			EASTBOUND ON			
	L	S	R	L	S	R	L	S	R	L	S	R	
3:45 - 4:00	0	17	7	18	67	0	0	6	19	29	58	1	222
	0	0	0	0	1	0	0	0	0	0	0	0	1
4:00 - 4:15	0	15	8	12	57	0	0	14	11	23	70	1	211
	0	0	0	0	0	0	0	0	0	0	1	0	1
4:15 - 4:30	0	10	7	17	73	0	0	7	20	17	54	0	205
	0	0	0	0	1	0	0	0	0	0	0	0	1
4:30 - 4:45	0	10	8	18	41	0	0	13	17	21	62	1	191
	0	0	0	0	0	0	0	0	0	0	2	0	2
TOTAL	0	52	30	65	240	0	0	40	67	90	247	3	834

These counts were taken on August 6, 2024. When school is in session, there are approximately 40-50 additional left turns from the west bound direction on Mill Creek Parkway during the peak hour.

The left turn lanes in westbound and eastbound direction are warranted during peak hours at this intersection while school is in session, at approximately 105 westbound left turns and 90 east bound left turns.

Overview of Accident Types & Patterns

Accident rates at this intersection has been one of the highest within the City of Clinton.

Table 1: Intersection Crash Analysis (2017-2023)

Intersection	ADT-Entering	Total Crashes	Crash Rate (per million vehicles)	Average Crash Rate
16th St NW & Mill Creek Pkwy	7743	34	1.72	0.7

Conclusion & Recommendations

This project includes an extension of lane width at the intersection of 16th St NW & Mill Creek Pkwy and restriping of lanes to add designated left turn lanes for the major legs of the intersection (west-bound & east-bound). This is expected to decrease accidents by a factor of 35 % per the Iowa DOT design manual.

A proposed design layout of the project including aerial photographs are available as attachments to this narrative.

Please contact Jason Craft, P.E., City Engineer, City of Clinton, Iowa, for any questions regarding this report at 563-244-3423.

Planning Level Construction Cost Estimate

(Based on preliminary drawing, all quantities will change with final design)

16th Street NW & Mill Creek Parkway
City of Clinton, Iowa

8/9/2024

Item	Approximate Quantity	Unit	Estimated Unit Price	Total Price	Safety Related	Non Safety Related
P.C. Concrete Pavement, Mainline, 9"	1,121	SY	$ 100.00	$ 112,100.00	$ 112,100.00	
Modified Subbase, 12"	1,401	SY	$ 15.00	$ 21,015.00	$ 21,015.00	
Rock Shouldering	2,065	SY	$ 15.00	$ 30,975.00	$ 30,975.00	
Earth Excavation	1	LS	$ 40,000.00	$ 40,000.00	$ 40,000.00	
Storm Sewer/Drainage	1	LS	$ 30,000.00	$ 30,000.00		$ 30,000.00
Traffic Control	1	LS	$ 25,000.00	$ 25,000.00	$ 25,000.00	
Pavement Markings	1	LS	$ 20,000.00	$ 20,000.00	$ 20,000.00	
Lighting & Electrical	1	LS	$ 60,000.00	$ 60,000.00	$ 60,000.00	
Mobilization	1	LS	$ 50,000.00	$ 50,000.00	$ 50,000.00	$ -
Contingency	1	LS	$ 60,000.00	$ 60,000.00	$ 40,000.00	$ 20,000.00
				$ 449,090.00	**$ 399,090.00**	**50,000.00**

Project Schedule
Exhibit D - Timeline
16th Street NW Mill Creek Parkway

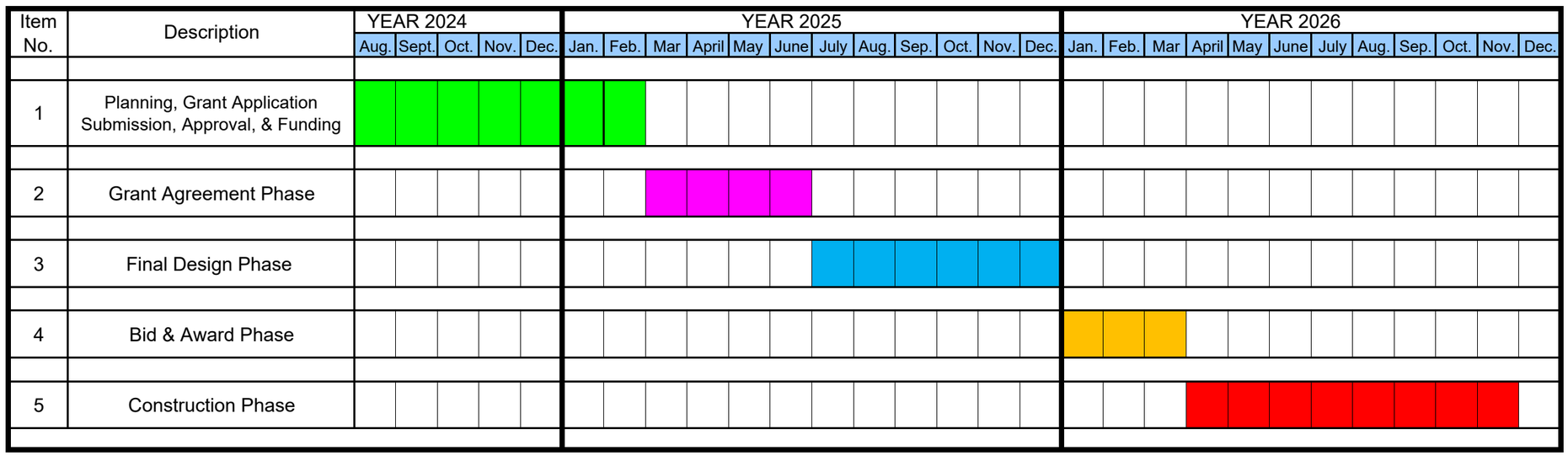
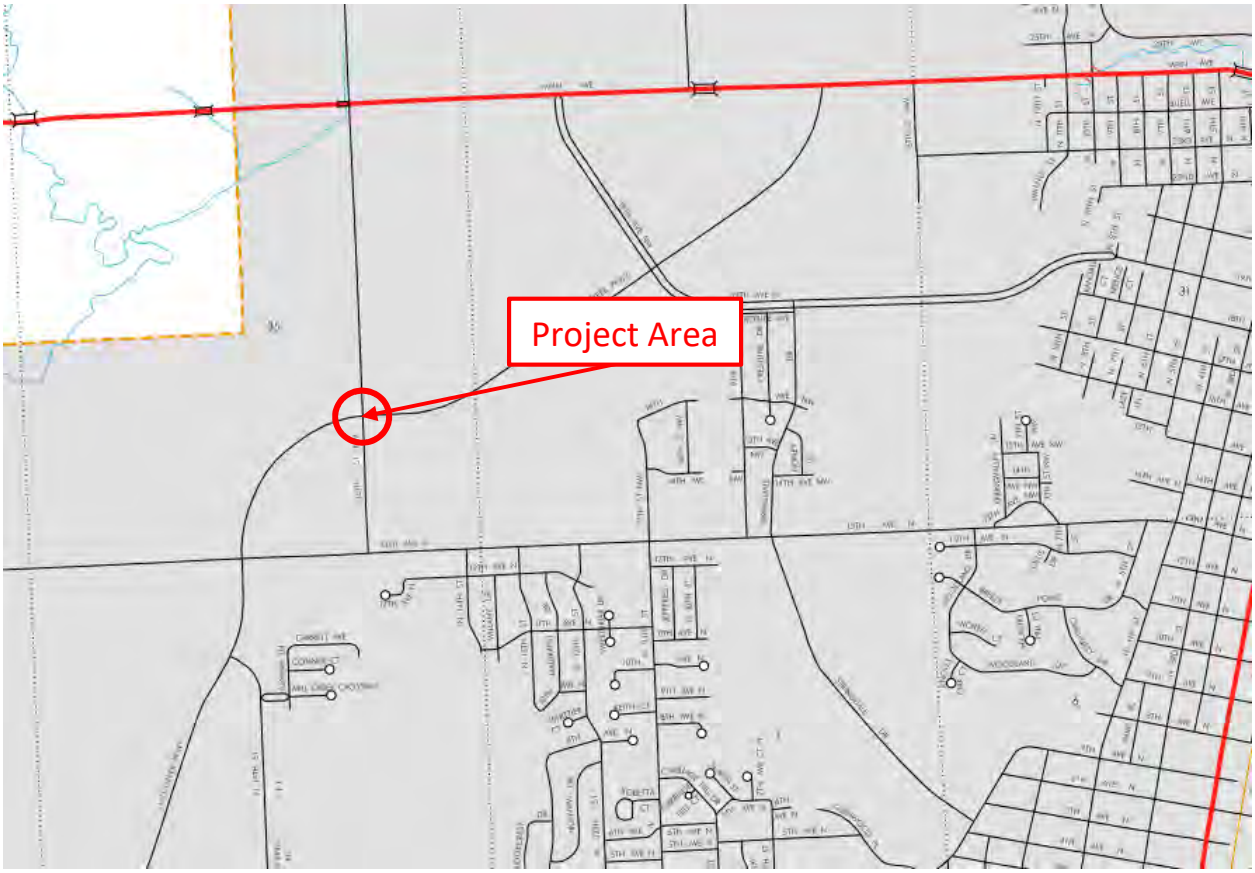


Exhibit E - Map



Area Map

Exhibit F – Pictures

Figure 1- Looking North

Exhibit F – Pictures

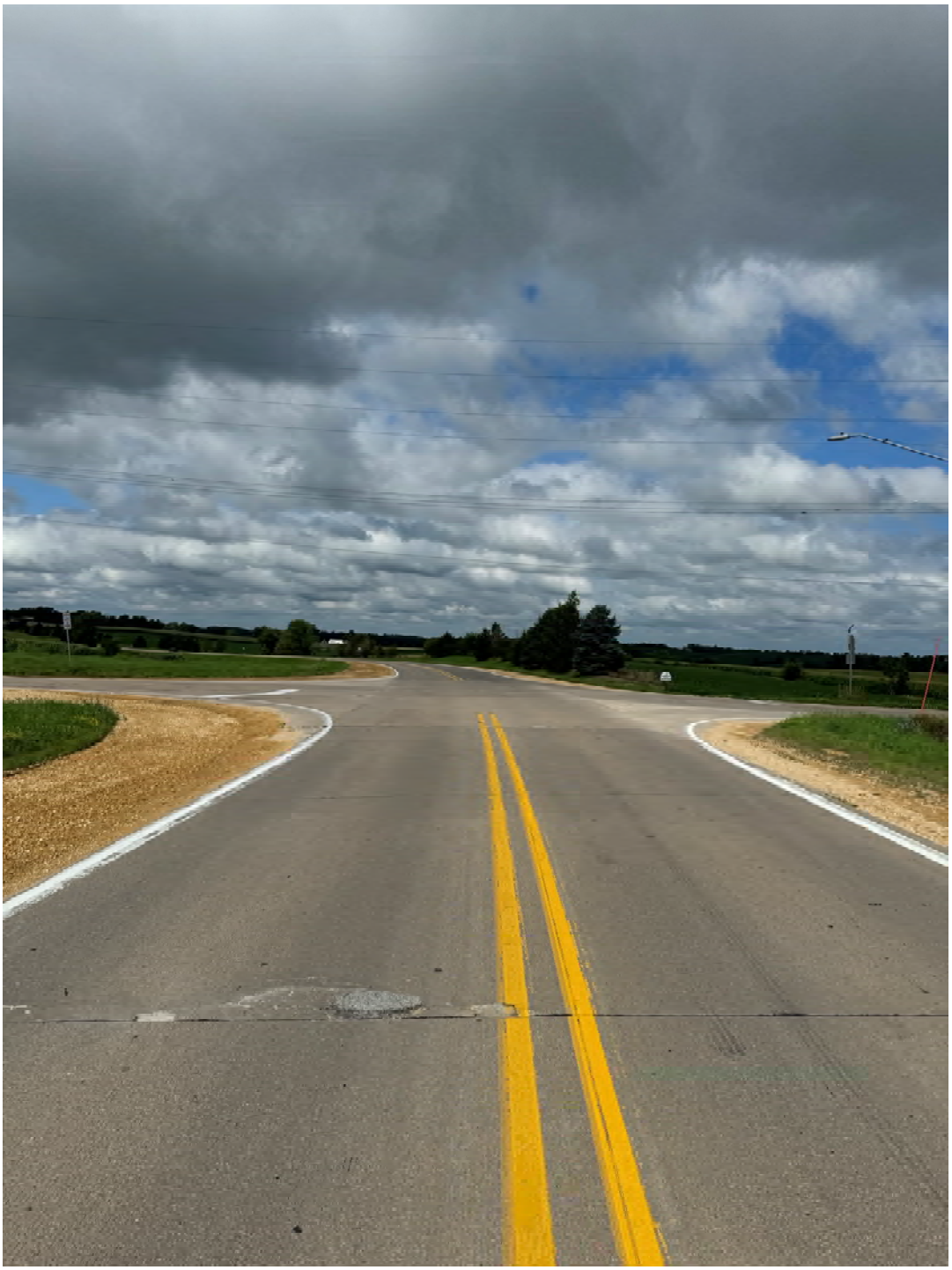


Figure 2- Looking West

Exhibit F – Pictures

Figure 3- Looking South

Exhibit F – Pictures

Figure 4- Looking East

ESTIMATED SUMMARY OF QUANTITIES

NO.	ITEM	UNIT	QUANTITY
1	EARTH EXCAVATION, GRADING & BORROW	LS	1
2	TOPSOIL STRIP, SALVAGE & RESPREAD	LS	1
3	ROCK SHOULDER REMOVAL	SY	2,208
4	PCC PAVEMENT WITH ROCK BASE	SY	1,121
5	ROCK SHOULDER	SY	2,065
6	PAVEMENT MARKINGS	LS	1
7	TRAFFIC CONTROL, COMPLETE	LS	1
8	EROSION CONTROL, COMPLETE	LS	1
9	SEEDING, FERTILIZING & MULCHING	AC	0.17
10	MOBILIZATION	LS	1

LEGEND

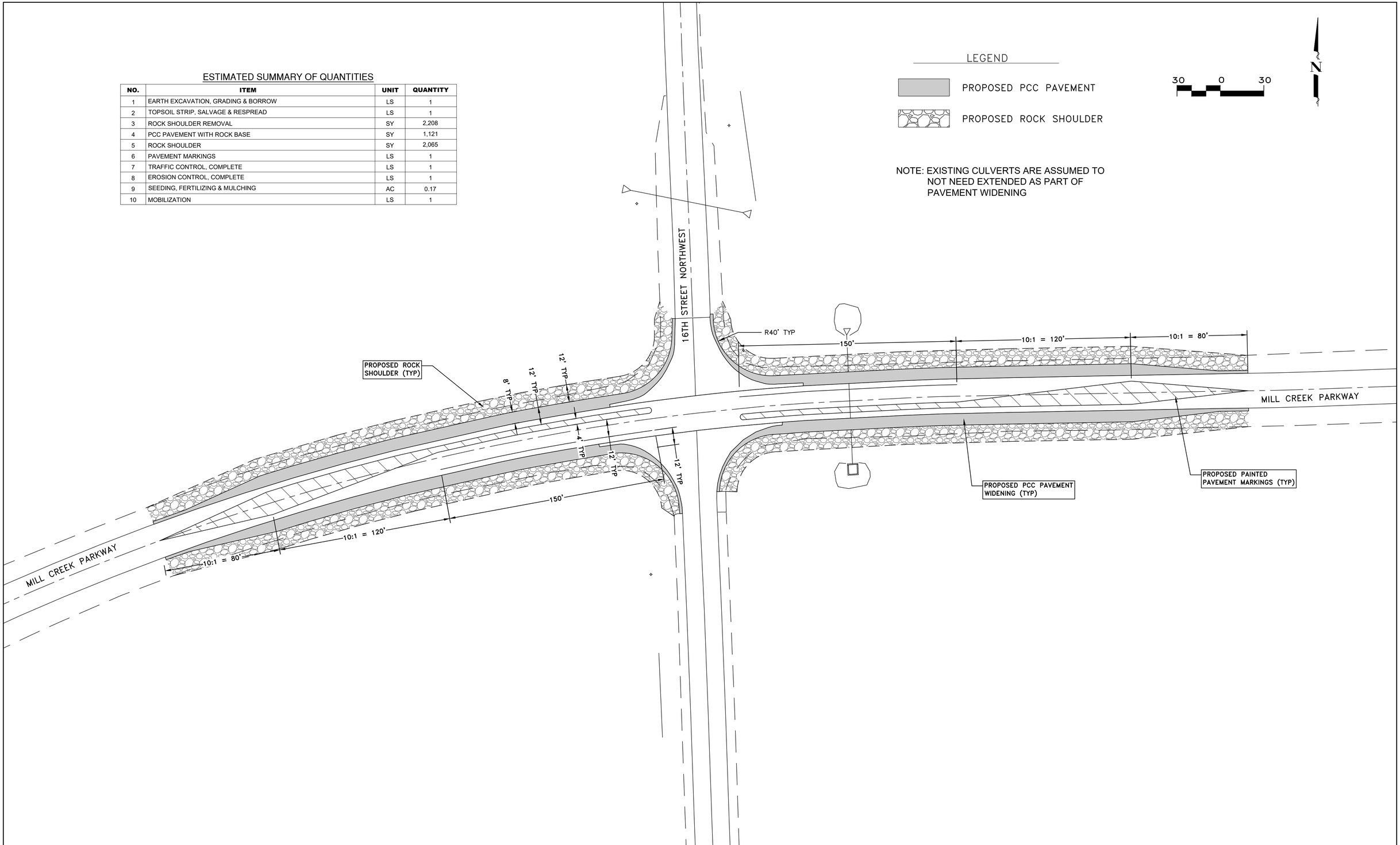
PROPOSED PCC PAVEMENT

PROPOSED ROCK SHOULDER

30 0 30

N

NOTE: EXISTING CULVERTS ARE ASSUMED TO NOT NEED EXTENDED AS PART OF PAVEMENT WIDENING



#	DATE	DESCRIPTION	BY

DESIGNED BY: MWJ
DRAWN BY: JAL
PROJECT ENGR: MWJ

Martin & Whitacre Surveyors & Engineers, Inc.
1508 BIDWELL ROAD MUSCATINE, IOWA
PHONE (563) 263-7691 EMAIL info@martin-whitacre.com

MILL CREEK PARKWAY CONCEPT
16TH ST. NW & MILL CREEK PARKWAY
CLINTON, IOWA

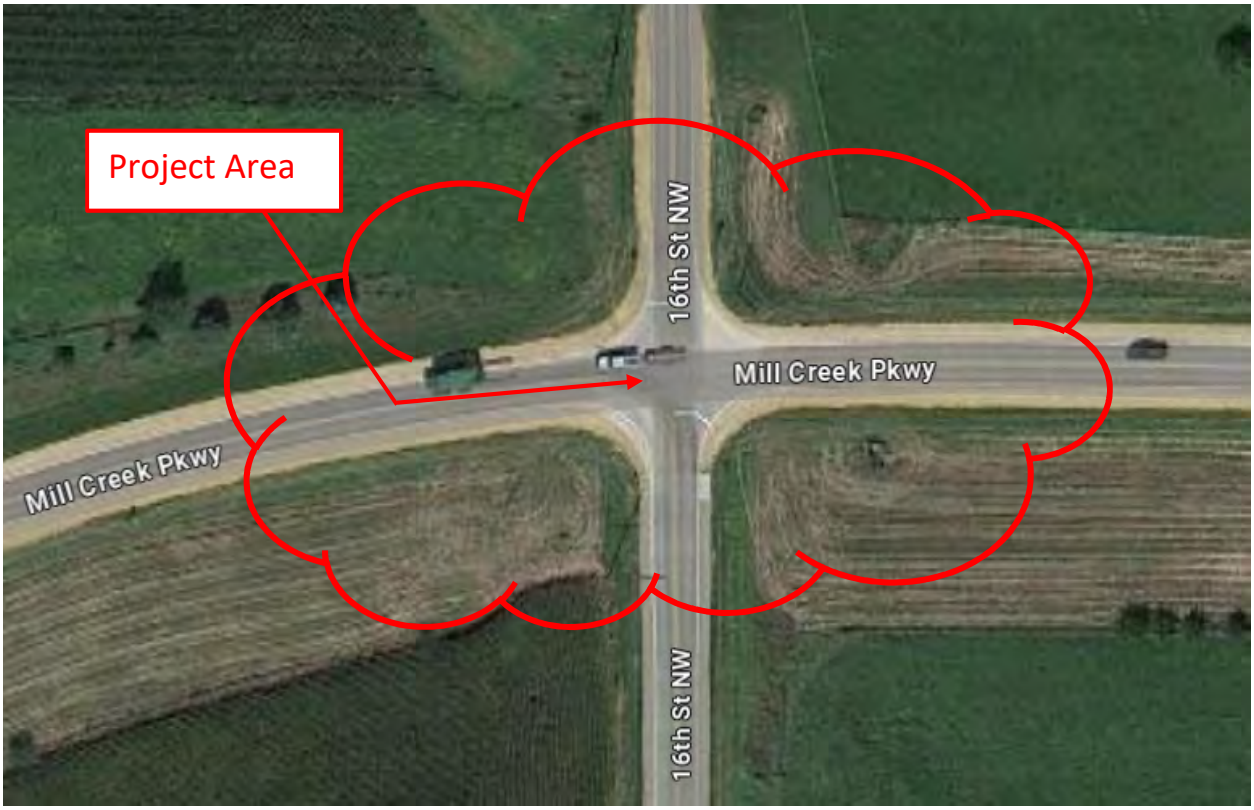
LEFT TURN LANES CONCEPT

PROJ NO: 9100.24
CONST PROJ: 000
SCALE: 1"=30'
DATE: 8/12/24

DRAWING NO: C-2
SHEET NO: 1 OF 1

F:\CIVIL3D PROJECTS\9100 CLINTON 16TH STREET NW\20 DESIGN DRAWINGS\9100 CLINTON CONCEPT 2.DWG PLOTTED: 8/12/2024

Exhibit H – Aerial Photo



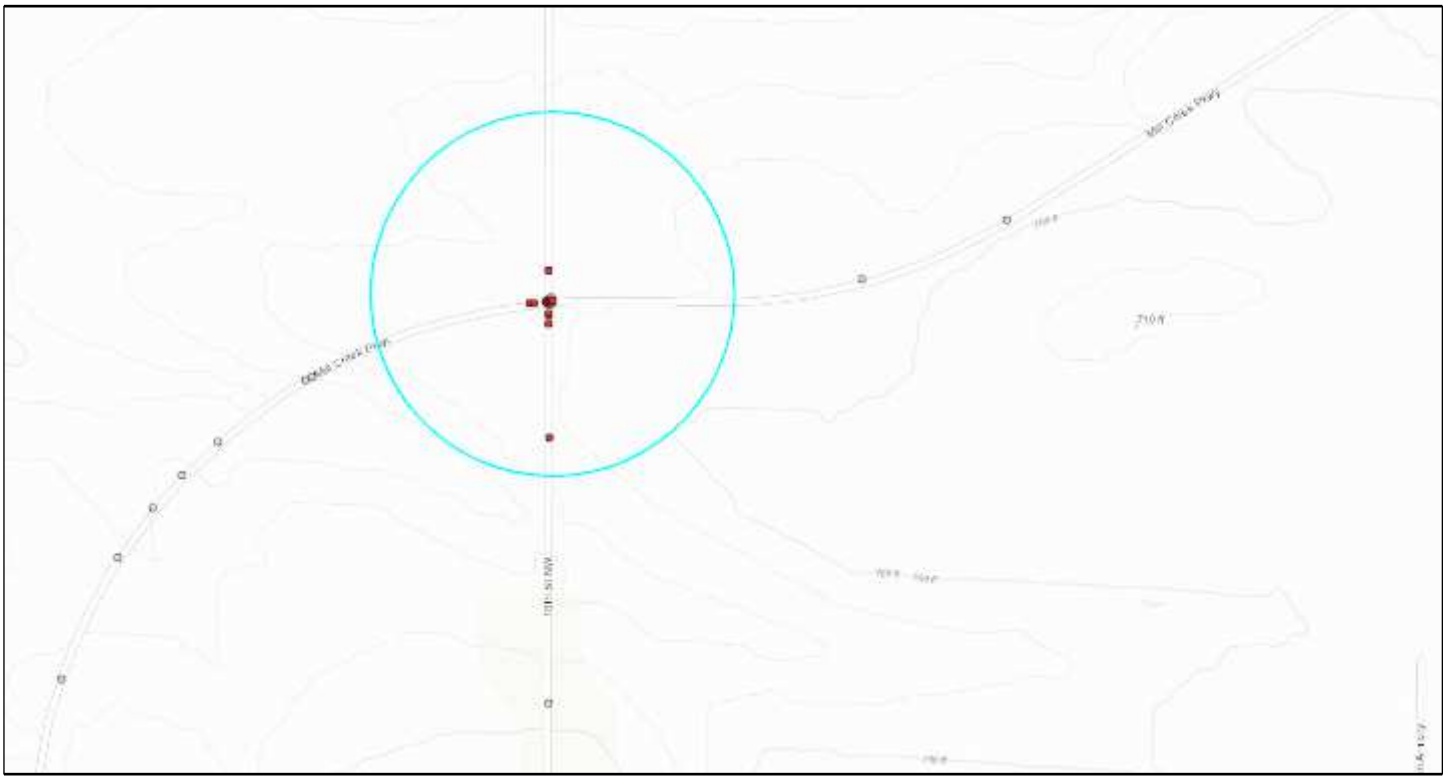
Iowa Crash Analysis Tool
Quick Report
2017-2023

Crash Severity	34
Fatal Crash	1
Suspected Serious Injury Crash	2
Suspected Minor Injury Crash	6
Possible/Unknown Injury Crash	8
Property Damage Only	17

Injury Status Summary	36
Fatalities	1
Suspected serious/incapacitating	5
Suspected minor/non-incapacitating	10
Possible (complaint of pain/injury)	20
Uninjured	0
Unknown	0
Not Reported	0

Property/Vehicles/Occupants	
Property Damage Total (dollars):	309,600.00
Average (per crash dollars):	9,105.88
Total Vehicles:	72.00
Average (per crash):	2.12
Total Occupants:	108.00
Average (per crash):	3.18

Average Severity	
Fatalities/Fatal Crash:	1.00
Fatalities/Crash:	0.03
Injuries/Crash:	1.03
Major Injuries/Crash:	0.15
Minor Injuries/Crash:	0.29
Possible/Unknown Injuries/Crash:	0.59



Major Cause			34
Animal	0	Ran traffic signal	0
Ran stop sign	8	Failed to yield to emergency vehicle	0
FTYROW: At uncontrolled intersection	0	FTYROW: Making right turn on red signal	0
FTYROW: From stop sign	13	FTYROW: From yield sign	0
FTYROW: Making left turn	7	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	0
Exceeded authorized speed	0	Improper or erratic lane changing	0
Operating vehicle in an reckless/erratic/care...	0	Followed too close	3
Passing: On wrong side	1	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...	1	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...	1
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		

Iowa Crash Analysis Tool
Quick Report
2017-2023

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	1	0	0	0	1	0	0	0	0	2
Monday	0	0	0	0	0	2	0	0	4	0	0	0	0	6
Tuesday	0	0	0	0	0	0	0	3	0	1	0	0	0	4
Wednesday	0	0	0	1	0	1	0	1	3	0	1	0	0	7
Thursday	0	0	0	0	0	1	0	2	2	1	0	0	0	6
Friday	0	0	0	0	0	0	1	2	2	0	1	0	0	6
Saturday	0	0	0	0	0	2	0	0	0	1	0	0	0	3
Total	0	0	0	1	1	6	1	8	12	3	2	0	0	34

Manner of Crash Collision	**34**
Non-collision (single vehicle)	1
Head-on (front to front)	1
Rear-end (front to rear)	6
Angle (oncoming left turn)	3
Broadside (front to side)	22
Sideswipe (same direction)	0
Sideswipe (opposite direction)	1
Rear to rear	0
Rear to side	0
Not reported	0
Other	0
Unknown	0

Surface Conditions	**34**
Dry	31
Wet	3
Ice/frost	0
Snow	0
Slush	0
Mud/dirt	0
Water (standing or moving)	0
Sand	0
Oil	0
Gravel	0
Not reported	0
Other	0
Unknown	0

Fixed Object Struck			**72**
Bridge overhead structure	0	Bridge pier or support	0
Bridge/bridge rail parapet	0	Curb/island/raised median	0
Ditch	0	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	1
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)	71

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	1	0	0	0	1
= 17	1	4	0	0	5
= 18	0	1	0	0	1
= 19	0	0	0	0	0
= 20	0	1	0	0	1
>= 21 and <= 24	1	4	0	0	5
>= 25 and <= 29	3	4	0	0	7
>= 30 and <= 34	2	5	0	0	7
>= 35 and <= 39	2	3	0	0	5
>= 40 and <= 44	0	1	0	0	1
>= 45 and <= 49	2	2	0	0	4
>= 50 and <= 54	0	5	0	0	5
>= 55 and <= 59	3	6	1	0	10
>= 60 and <= 64	3	3	0	0	6
>= 65 and <= 69	1	1	0	0	2
>= 70 and <= 74	1	0	1	0	2
>= 75 and <= 79	1	2	0	0	3
>= 80 and <= 84	1	1	0	0	2
>= 85 and <= 89	0	3	0	0	3
>= 90 and <= 94	0	1	0	0	1
>= 95	0	0	0	0	0
Not reported	0	0	0	0	0
Unknown	0	0	1	0	1
Total	22	47	3	0	72

Drug/Alcohol Related	34
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	34

Alcohol Test Given	72
None	71
Blood	0
Urine	0
Breath	0
Vitreous	0
Refused	0
Not reported	1

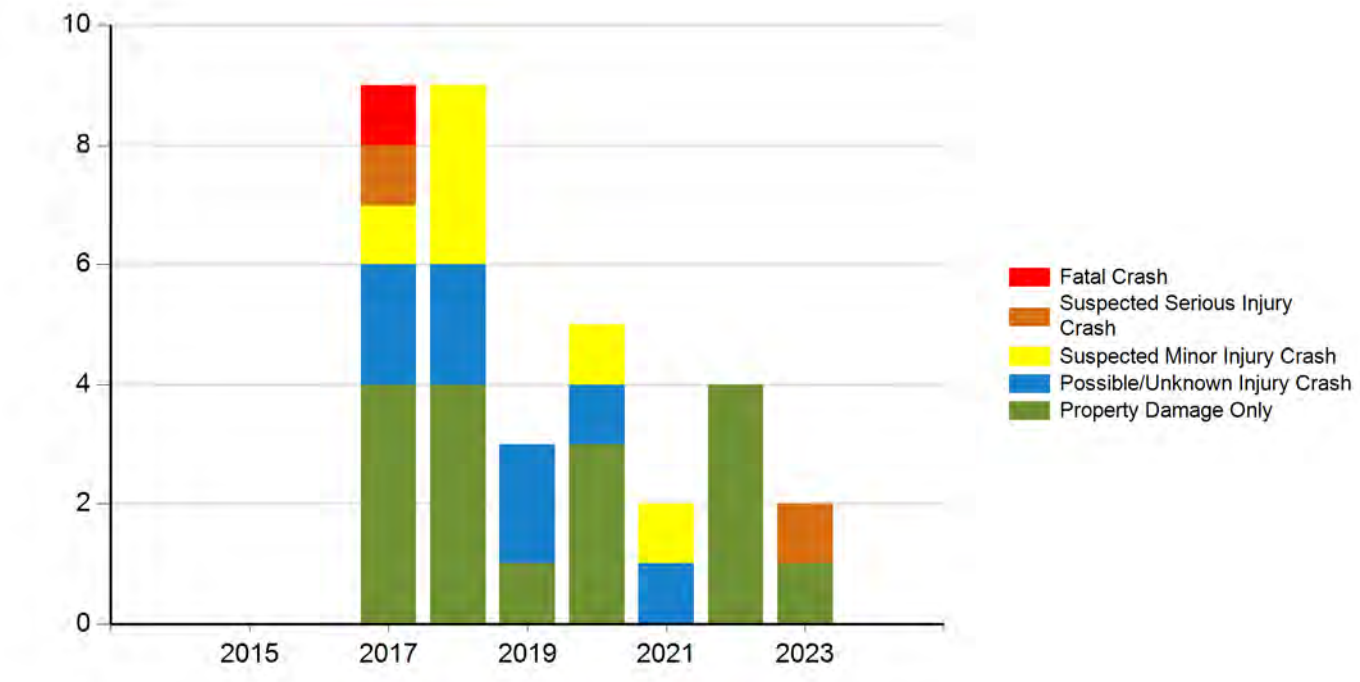
Drug Test Given	72
None	71
Blood	0
Urine	0
Breath	0
Vitreous	0
Refused	0
Not reported	1

Drug Test Result	72
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	72
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**
2014	0	0	0	0	0	0
2015	0	0	0	0	0	0
2016	0	0	0	0	0	0
2017	1	1	1	2	4	9
2018	0	0	3	2	4	9
2019	0	0	0	2	1	3
2020	0	0	1	1	3	5
2021	0	0	1	1	0	2
2022	0	0	0	0	4	4
2023	0	1	0	0	1	2
2024	0	0	0	0	0	0
Total	1	2	6	8	17	34

Severity/Year



Injury Status - Annual

Crash Year	Fatalities	Suspected serious/incapacitating	Suspected minor/non-incapacitating	Possible (complaint of pain/injury)	Uninjured	Unknown	Not Reported	**Total**
2014	0	0	0	0	0	0	0	0
2015	0	0	0	0	0	0	0	0
2016	0	0	0	0	0	0	0	0
2017	1	1	1	6	0	0	0	9
2018	0	0	6	4	0	0	0	10
2019	0	0	0	7	0	0	0	7
2020	0	0	2	1	0	0	0	3
2021	0	0	1	2	0	0	0	3
2022	0	0	0	0	0	0	0	0
2023	0	4	0	0	0	0	0	4
2024	0	0	0	0	0	0	0	0
Total	1	5	10	20	0	0	0	36

Injury Status/Year

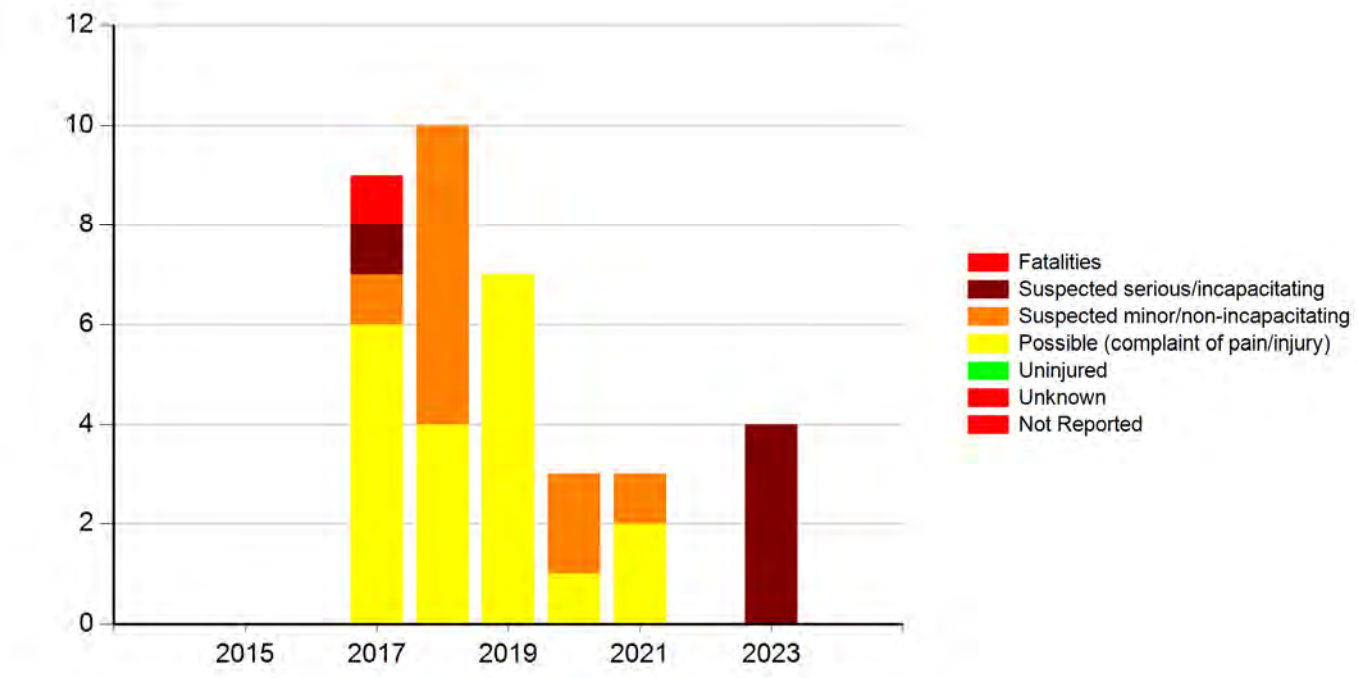


Exhibit J – Traffic Counts (Peak Hour)

PM PEAK TIME PERIOD	NORTHBOUND ON			WESTBOUND ON			SOUTHBOUND ON			EASTBOUND ON			
	L	S	R	L	S	R	L	S	R	L	S	R	
3:45 - 4:00	0	17	7	18	67	0	0	6	19	29	58	1	222
	0	0	0	0	1	0	0	0	0	0	0	0	1
4:00 - 4:15	0	15	8	12	57	0	0	14	11	23	70	1	211
	0	0	0	0	0	0	0	0	0	0	1	0	1
4:15 - 4:30	0	10	7	17	73	0	0	7	20	17	54	0	205
	0	0	0	0	1	0	0	0	0	0	0	0	1
4:30 - 4:45	0	10	8	18	41	0	0	13	17	21	62	1	191
	0	0	0	0	0	0	0	0	0	0	2	0	2
TOTAL	0	52	30	65	240	0	0	40	67	90	247	3	834

These counts were taken on August 6, 2024. When school is in session, there are approximately 40-50 additional left turns from the west bound direction on Mill Creek Parkway during the peak hour.

The left turn lanes in westbound and eastbound direction are warranted during peak hours at this intersection while school is in session, at approximately 105 westbound left turns and 90 east bound left turns.

County:	Clinton	Prepared By:	ECIA
Location:	Mill Creek Parkway & 16th St. NW, Ci	Date Prepared:	8/12/2024
Proposed Improvements:	Add left-turn lanes to westbound and eastbound legs.		
Estimated Improvement Cost:	$ 449,090		
Inflation on Crash Costs:	4%	Annual Maintenance:	2%
Discount Rate:	4%	(% of Improvement Cost)	
Estimated Service Life:	15	Annual Maintenance Cost:	$ 8,982

Method Choice: CRF Method

The Crash Reduction Factor (CRF) Method applies one to three CRFs to historical crashes to estimate reductions in future crashes. Crash Modification Factors (CMFs) can be converted to CRFs. For additional information, click the "Learn More" button.

Crash Reduction Factor (CRF) Method

Traffic Growth Factor:	1%
Number of CRFs:	1
Years of Crash History:	7

Combined CRF (Dominant Common Residuals Method)

Iowa DOT's preferred methodology for combining CRFs is Dominant Common Residuals, since it is more conservative than the other options.

	CRF 1:	Combined CRF
CRF Value (%)	30	**30.0**

Crash Severity	Rounded Societal Costs	Crash History (Total):	CRF (from above)	Crash History - Annual Avg	Crashes Saved Annually
Fatal (K)	$ 4,200,000	1	30.0	**0.14**	**0.04**
Serious Injury (A)	$ 4,200,000	2	30.0	**0.29**	**0.09**
Minor Injury (B)	$ 280,000	6	30.0	**0.86**	**0.26**
Possible/Unknown Injury (C)	$ 130,000	8	30.0	**1.14**	**0.34**
Property Damage Only (O)	$ 20,000	17	30.0	**2.43**	**0.73**

Crash Severity	Annual Societal Benefit
Fatal (K)	**$ 180,000**
Serious Injury (A)	**$ 360,000**
Minor Injury (B)	**$ 72,000**
Possible/Unknown Injury (C)	**$ 44,571**
Property Damage Only (O)	**$ 14,571**

Total Benefits and Costs

		Implementation Cost	$ 449,090
		Present Value of Maint.	$ 99,863
Present Value Benefits (Societal Benefits)	$ 7,949,802	Present Value Costs (Impl. and Maint. Costs)	$ 548,953
Present Value Net Return	$ 7,400,849		
Benefit Cost Ratio	**14.48**		

Form continues on next page

County:	Clinton	Prepared By:	ECIA
Location:	Mill Creek Parkway & 16th St. NW, Ci	Date Prepared:	8/12/2024

User Input Required - Custom Values Used

General Customizations

No change to Crash Costs

No change to Discount Rate

No change to Maintenance Costs

Method-Specific Customizations

No change to Traffic Growth Rate

Justification for deviation from default Crash History	A fatal crash occurred at this intersection in 2017 and no major changes have been made to the configuration of the intersection since. Therefore, it is useful to include when performing the benefit-cost analysis.

Traffic Safety Improvement Program Funding Application

FY 2026

Heartland Drive and Commerce Drive Roundabout

Coralville, Iowa

August 15, 2024

Prepared By:

McCLURE™

411 3rd Street SE

Cedar Rapids, IA 52402

Rev. 07/23

Application for SITE-SPECIFIC TSIP FUNDS

GENERAL INFORMATION **DATE:** 08/15/2024

Location / Title of Project Heartland Drive and Commerce Drive Roundabout

Applicant City of Coralville

Contact Person Scott Larson, PE Title City Engineer

Complete Mailing Address 1512 7th Street

Coralville, IA 52241

Phone 319.248.1720 (Area Code) E-Mail slarson@coralville.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) _____

Contact Person _____ Title _____

Complete Mailing Address _____

_____

Phone _____ (Area Code) E-Mail _____

PLEASE COMPLETE THE FOLLOWING PROJECT INFORMATION:

Funding Amount

Total Safety Cost	$	1,133,000
Total Project Cost	$	1,258,000
Safety Funds Requested	**$**	**500,000**

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
2017149180	Heartland Dr and Commerce Dr	☒	☐	1.48	N/A
		☐	☐		

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 Coralville

Signed: Meghann Foster — August 13, 2024

Signature — Date Signed

Meghann Foster, Mayor

Printed Name

Attest: 8/13/2024

Signature — Date Signed

Thorsten J. Johnson, City Clerk

Printed Name

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FOR RESOLUTION

NARRATIVE

Heartland Drive and Commerce Drive Roundabout

Existing Conditions

Heartland Drive and Commerce Drive intersect on the west side of a commercial development directly north of Interstate 80 in Coralville. Both roadways are classified as Major Collectors and are undivided, low-speed, two-lane roads. The existing intersection is stop-controlled in each direction, and each leg has two lanes: a dedicated left-turn lane and a combination through-right lane. An 8-foot-wide shared-use path runs along the west side of Heartland Drive and the south side of Commerce Drive, separated from both roadways by a grass buffer.

The west leg of the intersection serves as an entrance to Costco Wholesale, which has over 140,000 square feet of floor space and over 250,000 square feet of covered parking. The Heartland and Commerce intersection is one of two potential access points to the facilities but is the only intersection offering stop control in all directions.

The posted speed limits are 25 mph along Commerce Drive and 35 mph along Heartland Drive. According to Iowa DOT traffic counts, Heartland Drive carried an AADT of 3,610 (4,300) in 2006 south of the intersection and 5,900 (6,700) in 2010 north of the intersection. Commerce Drive carried an AADT of 15,000 (17,200) in 2010. Present-day values are noted in parentheses, assuming a conservative 1% annual growth rate.

Both Heartland and Commerce have existing roundabouts within the same commercial development, approximately 2,100 feet north and 900 feet east of the existing intersection.

Proposed Concept

Due to the number and types of crashes and the existing intersection geometry, a single-lane roundabout is proposed as a safety improvement. The proposed roundabout concept provides the following advantages:

- The roundabout center will be shifted east along Commerce to minimize right-of-way acquisition while ensuring safe passage.
- Splitter islands will notify motorists of the intersection, temper speeds, and provide pedestrian refuge along the two shared-use path crossings.
- Crosswalks and curb ramps will be provided at two legs of the intersection, in conjunction with rectangular rapid flashing beacons (RRFB), to preserve ADA compliance and maintain pedestrian connectivity throughout the development.

Refer to Section G for a plan view of the proposed improvements.

Safety Justification

Intersection crash history, collected using the Iowa Crash Analysis Tool, shows that between 2020 and 2024, there were 42 crashes with over 10 resulting in injury (KABC). In total, 34 crashes were broadside (front to side) and 4 crashes were angle (oncoming left turn) crashes. Refer to Section I for a detailed report on the intersection including a collision diagram.

The majority of crashes at the intersection are broadside crashes caused by drivers failing to yield at stop signs. Reconfiguring the intersection into a roundabout will have the following safety benefits:

- Significantly reduces the occurrence of T-bone and head-on crashes
- The amount of conflict points will be greatly reduced
- Crashes within the proposed roundabout would be less severe rear end or sideswipes
- Vehicle speeds and potential crash angles will be reduced, and which would lower the severity of crashes

The intersection has a High Potential for Crash Reduction (PCR) value of 1.48 across all crash types, indicating the need for safety improvements. This ranks the intersection in the 99th percentile statewide and in its specific category, Undivided Low Speed Partial Stop Control (>5,000 AADT).

Iowa DOT planning-level Crash Reduction Factors (CRF) estimate that replacing an unsignalized intersection in an urban area with a roundabout can result in a 45% reduction in all crashes and a 75% reduction in fatal and injury crashes. CRF US-61A was applied to this intersection given the volume of KABC crashes in the past 5 years. The Benefit Cost Analysis in Section L omits all Property Damage Only crashes and quantifies the Societal Benefits solely for KABC crashes at a 75% reduction.

CRF #	COUNTERMEASURE NAME	PRIOR CONDITION	AREA TYPE	CRASH SEVERITY	CRF VALUE
US-61	Install Roundabout	Unsignalized	Urban	All	45
US-61A	Install Roundabout	Unsignalized	Urban	Fatal and Injury (K, A, B, C)	75

A roundabout at the intersection of Heartland and Commerce offers much-needed safety improvements that traffic data supports (PCR = 1.48) at a net benefit to the City of Coralville and the travelers relying on their network (BCR = 9.18).

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ENGINEER'S OPINION OF PROBABLE CONSTRUCTION COST

Heartland Drive and Commerce Drive Roundabout
City of Coralville
TSIP Application - August 15, 2024

Item No.	Item Code	Item Description	Quantity	Unit	Unit Price	Extended Price
1	2102-2710070	EXCAVATION, CLASS 10, ROADWAY AND BORROW	1500	CY	$ 12.00	$ 18,000.00
2	2105-8425015	TOPSOIL, STRIP, SALVAGE AND SPREAD	650	CY	$ 15.00	$ 9,750.00
3	2109-8225100	SPECIAL COMPACTION OF SUBGRADE	16.5	STA	$ 800.00	$ 13,200.00
4	2115-0100000	MODIFIED SUBBASE, 8 IN.	1000	CY	$ 50.00	$ 50,000.00
5	2301-1033080	STANDARD OR SLIP FORM PCC PAVEMENT, CLASS C, CLASS 3 DURABILITY, 8 IN.	3400	SY	$ 75.00	$ 255,000.00
6	2301-4875006	MEDIAN, P.C. CONCRETE, 6 IN.	540	SY	$ 100.00	$ 54,000.00
7	2435-0250700	INTAKE, SW-507	4	EACH	$ 6,100.00	$ 24,400.00
8	2435-0250800	INTAKE, SW-508	2	EACH	$ 8,000.00	$ 16,000.00
9	2435-0250900	INTAKE, SW-509	4	EACH	$ 8,200.00	$ 32,800.00
10	2502-8212036	SUBDRAIN, LONGITUDINAL, (SHOULDER) 6 IN. DIA.	1650	LF	$ 17.00	$ 28,050.00
11	2502-8221303	SUBDRAIN OUTLET, DR-303	18	EACH	$ 465.00	$ 8,370.00
12	2503-0114215	STORM SEWER GRAVITY MAIN, TRENCHED, RCP, 2000D (CLASS III), 15 IN.	110	LF	$ 95.00	$ 10,450.00
13	2503-0114218	STORM SEWER GRAVITY MAIN, TRENCHED, RCP, 2000D (CLASS III), 18 IN.	350	LF	$ 105.00	$ 36,750.00
14	2503-0114224	STORM SEWER GRAVITY MAIN, TRENCHED, RCP, 2000D (CLASS III), 24 IN.	80	LF	$ 135.00	$ 10,800.00
15	2503-0200036	REMOVE STORM SEWER PIPE LESS THAN OR EQUAL TO 36 IN.	500	LF	$ 30.00	$ 15,000.00
16	2510-6745850	REMOVAL OF PAVEMENT	4000	SY	$ 22.00	$ 88,000.00
17	2510-6750600	REMOVAL OF INTAKES AND UTILITY ACCESSES	6	EACH	$ 1,000.00	$ 6,000.00
18	2511-0302600	RECREATIONAL TRAIL, PORTLAND CEMENT CONCRETE, 6 IN.	240	SY	$ 55.00	$ 13,200.00
19	2511-0310100	SPECIAL COMPACTION OF SUBGRADE FOR RECREATIONAL TRAIL	2.5	STA	$ 500.00	$ 1,250.00
20	2511-6745900	REMOVAL OF SIDEWALK	265	SY	$ 17.00	$ 4,505.00
21	2511-7528101	DETECTABLE WARNINGS	130	SF	$ 60.00	$ 7,800.00
22	2526-8285000	CONSTRUCTION SURVEY	1	LS	$ 30,000.00	$ 30,000.00
23	2527-9263109	PAINTED PAVEMENT MARKING, WATERBORNE OR SOLVENT-BASED	20	STA	$ 110.00	$ 2,200.00
24	2528-8445110	TRAFFIC CONTROL	1	LS	$ 20,000.00	$ 20,000.00
25	2533-4980005	MOBILIZATION	1	LS	$ 60,000.00	$ 60,000.00
26	2599-9999005	RECTANGULAR RAPID FLASHING BEACON (RRFB) ASSEMBLY	2	EACH	$ 20,000.00	$ 40,000.00
27	2599-9999010	LIGHTING	1	LS	$ 80,000.00	$ 80,000.00
28	2601-2634105	MULCHING, BONDED FIBER MATRIX	0.6	ACRE	$ 4,500.00	$ 2,700.00
29	2601-2636044	SEEDING AND FERTILIZING (URBAN)	2	ACRE	$ 4,000.00	$ 6,000.00
					Subtotal (ROUNDED):	$ 944,000.00
					Contingency (20%):	$ 189,000.00
					Construction Total:	$ 1,133,000.00
					Other Costs	
					ROW Acquisition	$ 25,000.00
					Landscape Improvements	$ 100,000.00
					TOTAL PROJECT COSTS (ROUNDED):	$ 1,258,000.00

*Acquisition costs are based on the following: $4.00/SF for permanent acquisitions, $0.40/SF for temporary easements

PROJECT SCHEDULE

Heartland Drive and Commerce Drive Roundabout

The following is the anticipated schedule of major project events for this project:

TSIP Funding Application Submittal.....August 2024

Notification of TSIP Funding Award.....January 2025

Design .....January – November 2025

TSIP Funds Available.....July 2025

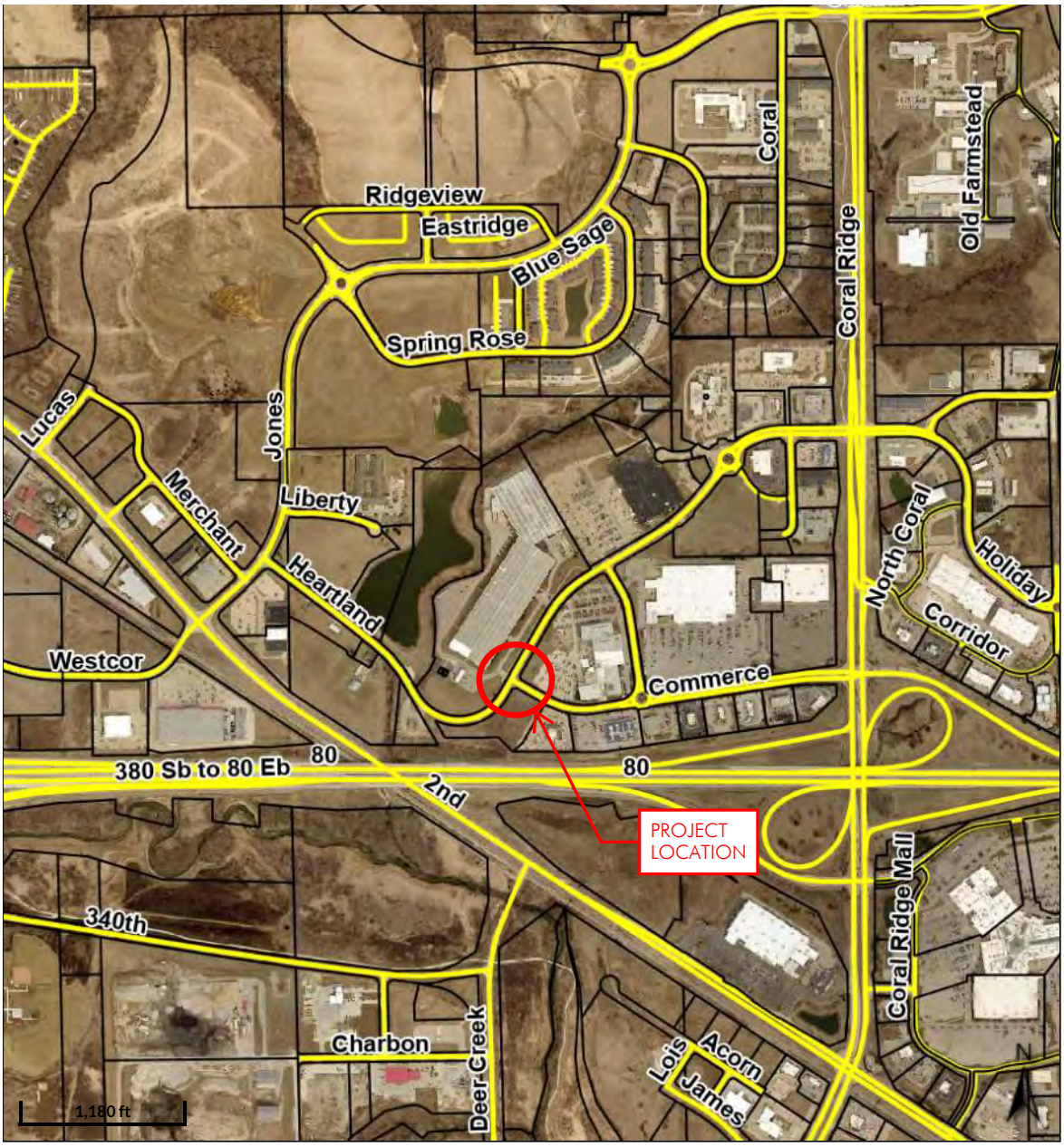
Iowa DOT Bid Letting.....January 2026

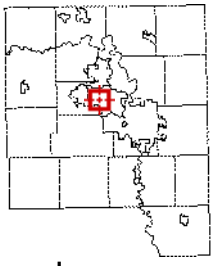
Project begins construction .....Spring 2026

Project Completed.....November 2026

PROJECT MAP

Heartland Drive and Commerce Drive Roundabout





Legend

- Parcels
- Centerlines

Date created: 7/30/2024
Last Data Uploaded: 7/29/2024 7:06:02 PM

Developed by Schneider GEOSPATIAL

McCLURE

PROJECT SITE PHOTOS

Heartland Drive and Commerce Drive Roundabout

Picture 1: View of the intersection from the north

Picture 2: View of the intersection from the east

Picture 3: View of the intersection from the south

Picture 4: View of the Intersection from the west

COMMERCE DRIVE AND HEARTLAND DRIVE ROUNDABOUT

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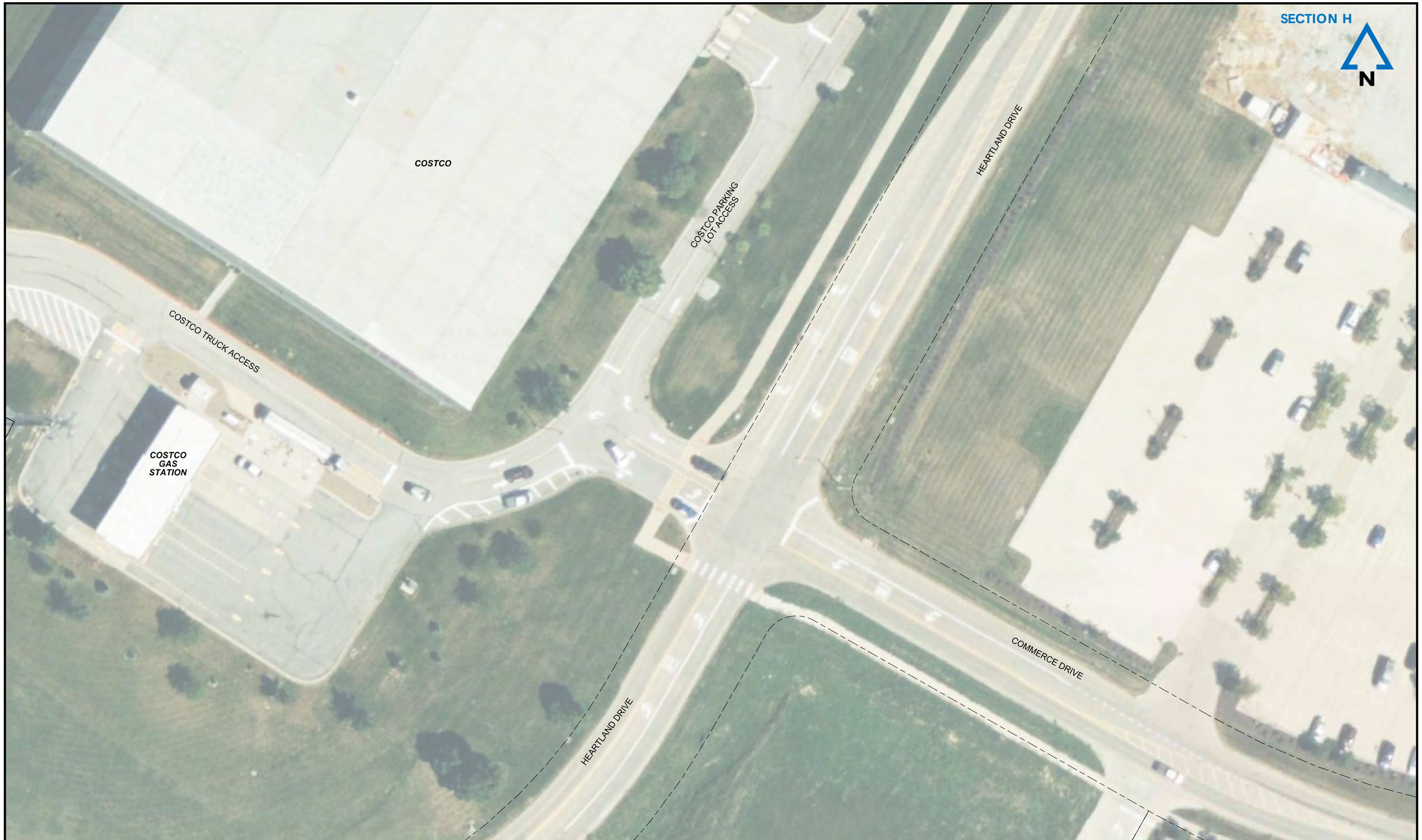

COMMERCE DRIVE AND HEARTLAND DRIVE ROUNDABOUT

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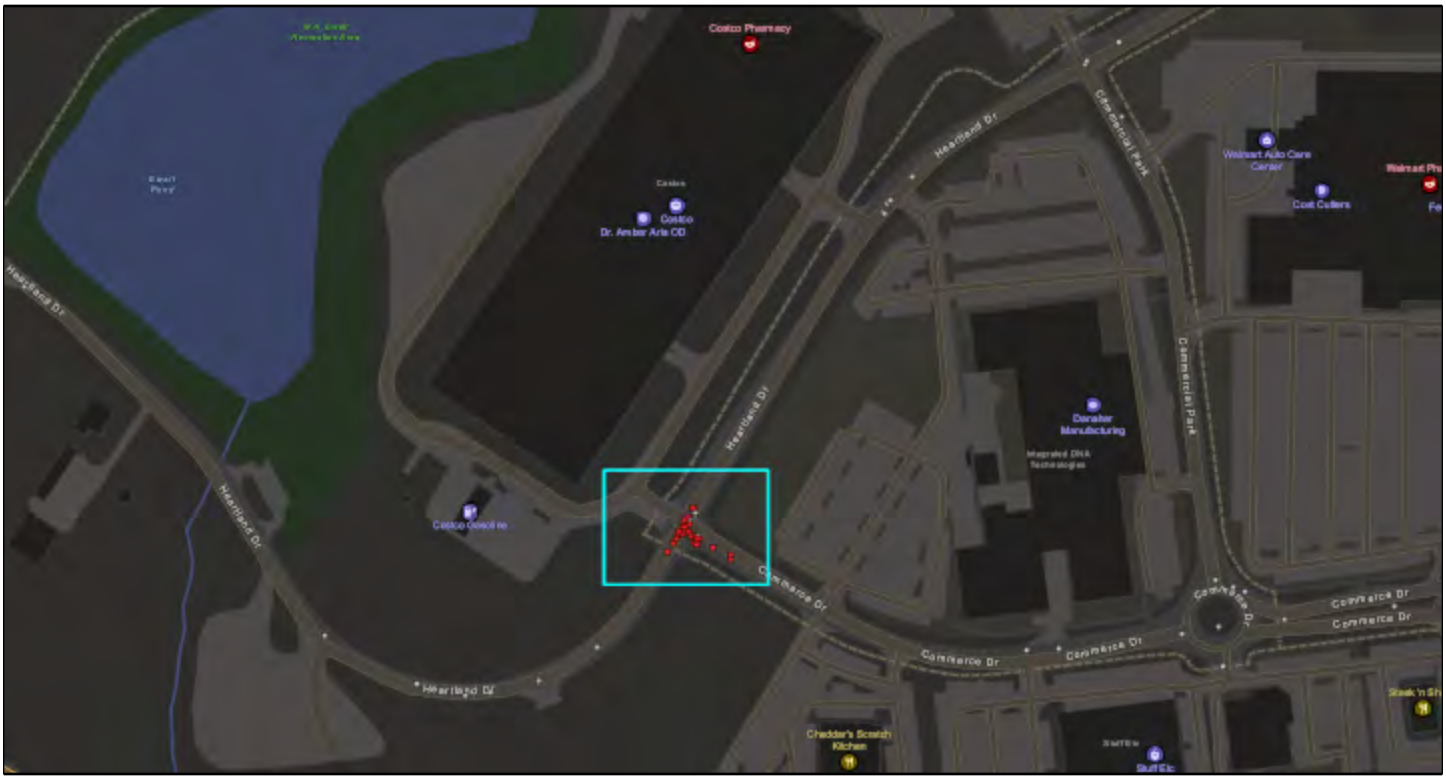
Iowa Crash Analysis Tool
Quick Report
2020-2024

Crash Severity	42
Fatal Crash	0
Suspected Serious Injury Crash	1
Suspected Minor Injury Crash	4
Possible/Unknown Injury Crash	5
Property Damage Only	32

Injury Status Summary	14
Fatalities	0
Suspected serious/incapacitating	2
Suspected minor/non-incapacitating	4
Possible (complaint of pain/injury)	8
Uninjured	0
Unknown	0
Not Reported	0

Property/Vehicles/Occupants	
Property Damage Total (dollars):	410,750.00
Average (per crash dollars):	9,779.76
Total Vehicles:	89.00
Average (per crash):	2.12
Total Occupants:	140.00
Average (per crash):	3.33

Average Severity	
Fatalities/Fatal Crash:	0.00
Fatalities/Crash:	0.00
Injuries/Crash:	0.33
Major Injuries/Crash:	0.05
Minor Injuries/Crash:	0.10
Possible/Unknown Injuries/Crash:	0.19



Iowa Crash Analysis Tool
Quick Report
2020-2024

Major Cause			**42**
Animal	0	Ran traffic signal	0
Ran stop sign	5	Failed to yield to emergency vehicle	0
FTYROW: At uncontrolled intersection	0	FTYROW: Making right turn on red signal	0
FTYROW: From stop sign	23	FTYROW: From yield sign	0
FTYROW: Making left turn	5	FTYROW: From driveway	1
FTYROW: From parked position	0	FTYROW: To pedestrian	0
FTYROW: Other	2	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	0
Exceeded authorized speed	0	Improper or erratic lane changing	0
Operating vehicle in an reckless/erratic/care...	1	Followed too close	1
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	2	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	1
Unknown	1	Not reported	0
Other: No improper action	0		

Iowa Crash Analysis Tool
Quick Report
2020-2024

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	1	2	1	3	0	0	0	0	7
Monday	0	0	0	0	1	2	1	2	1	1	0	0	0	8
Tuesday	0	0	0	0	0	1	2	2	1	0	0	0	0	6
Wednesday	0	0	0	0	0	0	1	1	1	0	0	0	0	3
Thursday	0	0	0	0	0	0	2	0	1	0	0	0	0	3
Friday	0	0	0	0	0	1	1	2	1	0	0	0	0	5
Saturday	0	0	0	0	2	1	4	1	2	0	0	0	0	10
Total	0	0	0	0	3	6	13	9	10	1	0	0	0	42

Manner of Crash Collision	**42**
Non-collision (single vehicle)	0
Head-on (front to front)	1
Rear-end (front to rear)	2
Angle (oncoming left turn)	4
Broadside (front to side)	34
Sideswipe (same direction)	0
Sideswipe (opposite direction)	0
Rear to rear	0
Rear to side	0
Not reported	0
Other	1
Unknown	0

Surface Conditions	**42**
Dry	35
Wet	5
Ice/frost	1
Snow	1
Slush	0
Mud/dirt	0
Water (standing or moving)	0
Sand	0
Oil	0
Gravel	0
Not reported	0
Other	0
Unknown	0

Fixed Object Struck			**89**
Bridge overhead structure	0	Bridge pier or support	0
Bridge/bridge rail parapet	0	Curb/island/raised median	0
Ditch	0	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)	89

Iowa Crash Analysis Tool
Quick Report
2020-2024

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	0	0	0	0	0
= 18	2	4	0	0	6
= 19	3	1	0	0	4
= 20	0	0	0	0	0
>= 21 and <= 24	4	2	0	0	6
>= 25 and <= 29	3	3	0	0	6
>= 30 and <= 34	6	4	0	0	10
>= 35 and <= 39	5	2	0	0	7
>= 40 and <= 44	1	4	0	0	5
>= 45 and <= 49	1	6	1	0	8
>= 50 and <= 54	7	4	0	0	11
>= 55 and <= 59	2	0	0	0	2
>= 60 and <= 64	4	6	0	0	10
>= 65 and <= 69	0	1	0	0	1
>= 70 and <= 74	5	2	0	0	7
>= 75 and <= 79	1	0	0	0	1
>= 80 and <= 84	0	2	0	0	2
>= 85 and <= 89	1	1	0	0	2
>= 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	45	42	2	0	89

Drug/Alcohol Related	42
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	42

Alcohol Test Given	89
None	88
Blood	0
Urine	0
Breath	0
Vitreous	0
Refused	0
Not reported	1

Drug Test Given	89
None	88
Blood	0
Urine	0
Breath	0
Vitreous	0
Refused	0
Not reported	1

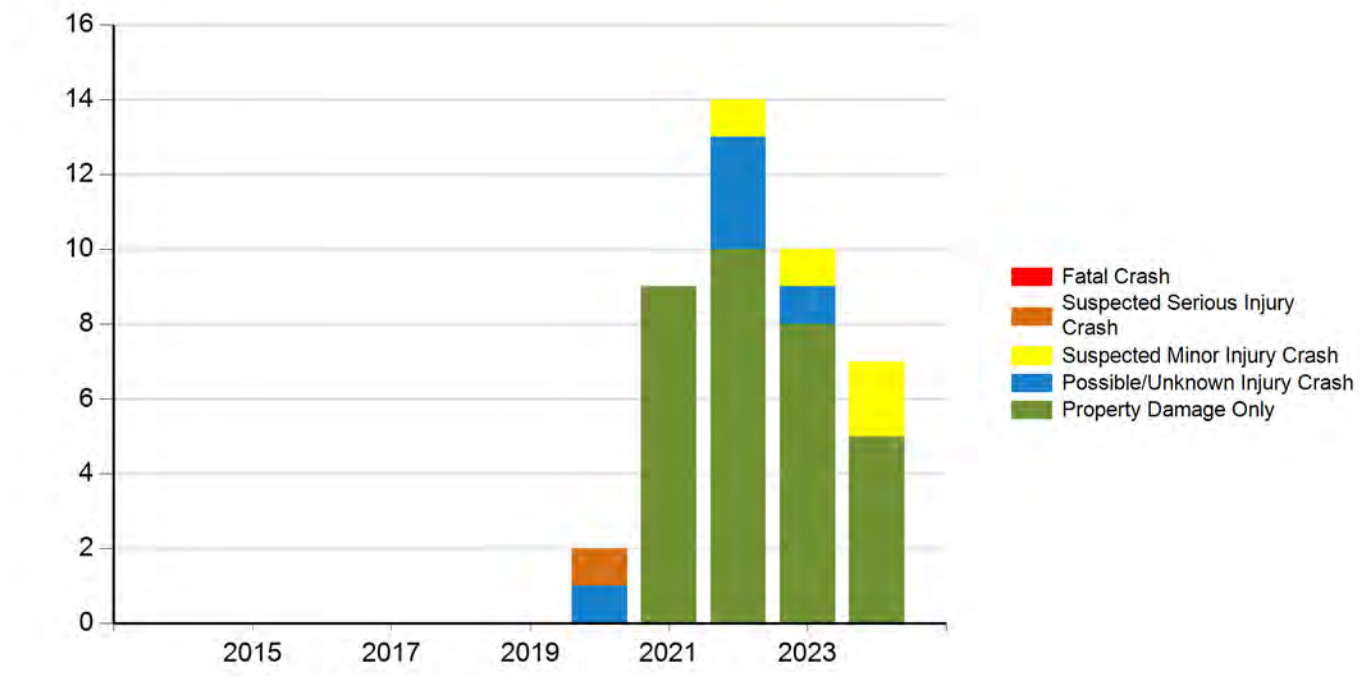
Drug Test Result	89
Negative	0
Cannabis	0
Central Nervous System depressants	0
Central Nervous System stimulants	0
Hallucinogens	0
Inhalants	0
Narcotic Analgesics	0
Dissociative Anesthetic (PCP)	0
Prescription Drug	0
Not reported	89
Other	0

Iowa Crash Analysis Tool
Quick Report
2020-2024

Crash Severity - Annual

Crash Year	Fatal Crash	Suspected Serious Injury Crash	Suspected Minor Injury Crash	Possible/Unknown Injury Crash	Property Damage Only	**Total**
2014	0	0	0	0	0	0
2015	0	0	0	0	0	0
2016	0	0	0	0	0	0
2017	0	0	0	0	0	0
2018	0	0	0	0	0	0
2019	0	0	0	0	0	0
2020	0	1	0	1	0	2
2021	0	0	0	0	9	9
2022	0	0	1	3	10	14
2023	0	0	1	1	8	10
2024	0	0	2	0	5	7
Total	0	1	4	5	32	42

Severity/Year

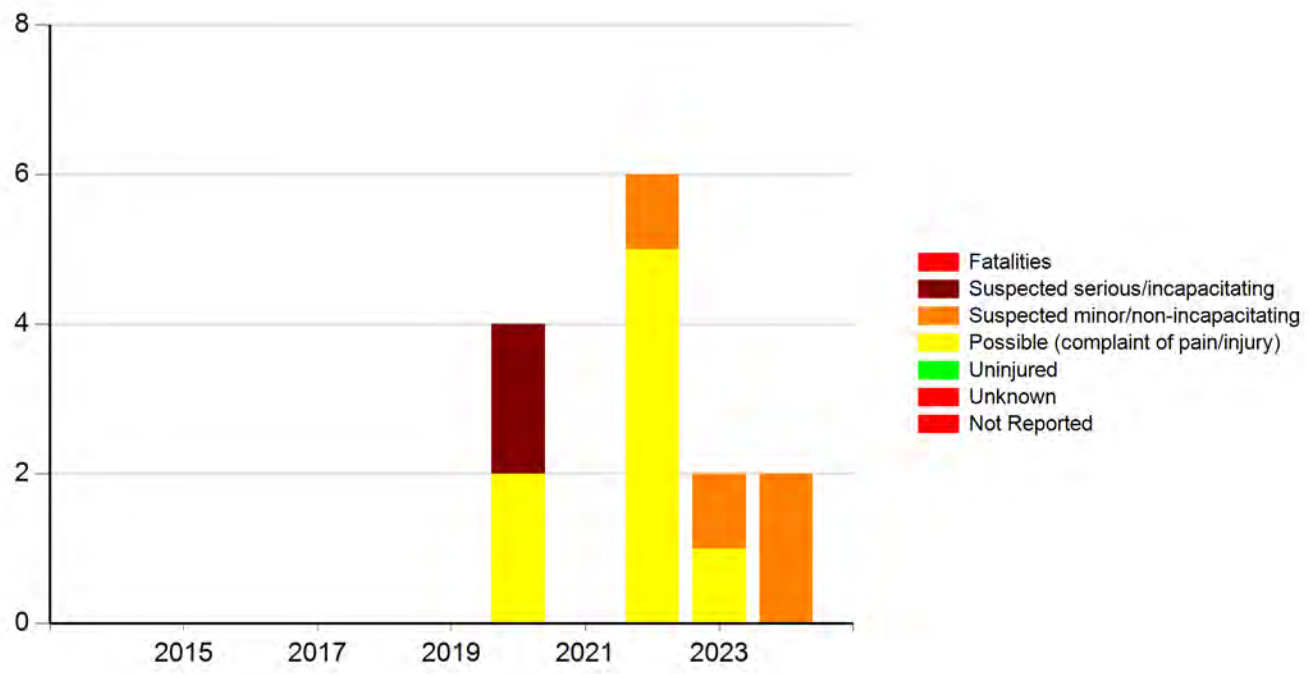


Iowa Crash Analysis Tool
Quick Report
2020-2024

Injury Status - Annual

Crash Year	Fatalities	Suspected serious/incapacitating	Suspected minor/non-incapacitating	Possible (complaint of pain/injury)	Uninjured	Unknown	Not Reported	**Total**
2014	0	0	0	0	0	0	0	0
2015	0	0	0	0	0	0	0	0
2016	0	0	0	0	0	0	0	0
2017	0	0	0	0	0	0	0	0
2018	0	0	0	0	0	0	0	0
2019	0	0	0	0	0	0	0	0
2020	0	2	0	2	0	0	0	4
2021	0	0	0	0	0	0	0	0
2022	0	0	1	5	0	0	0	6
2023	0	0	1	1	0	0	0	2
2024	0	0	2	0	0	0	0	2
Total	0	2	4	8	0	0	0	14

Injury Status/Year



Iowa Crash Analysis Tool
Quick Report
2020-2024

Meeting the following criteria

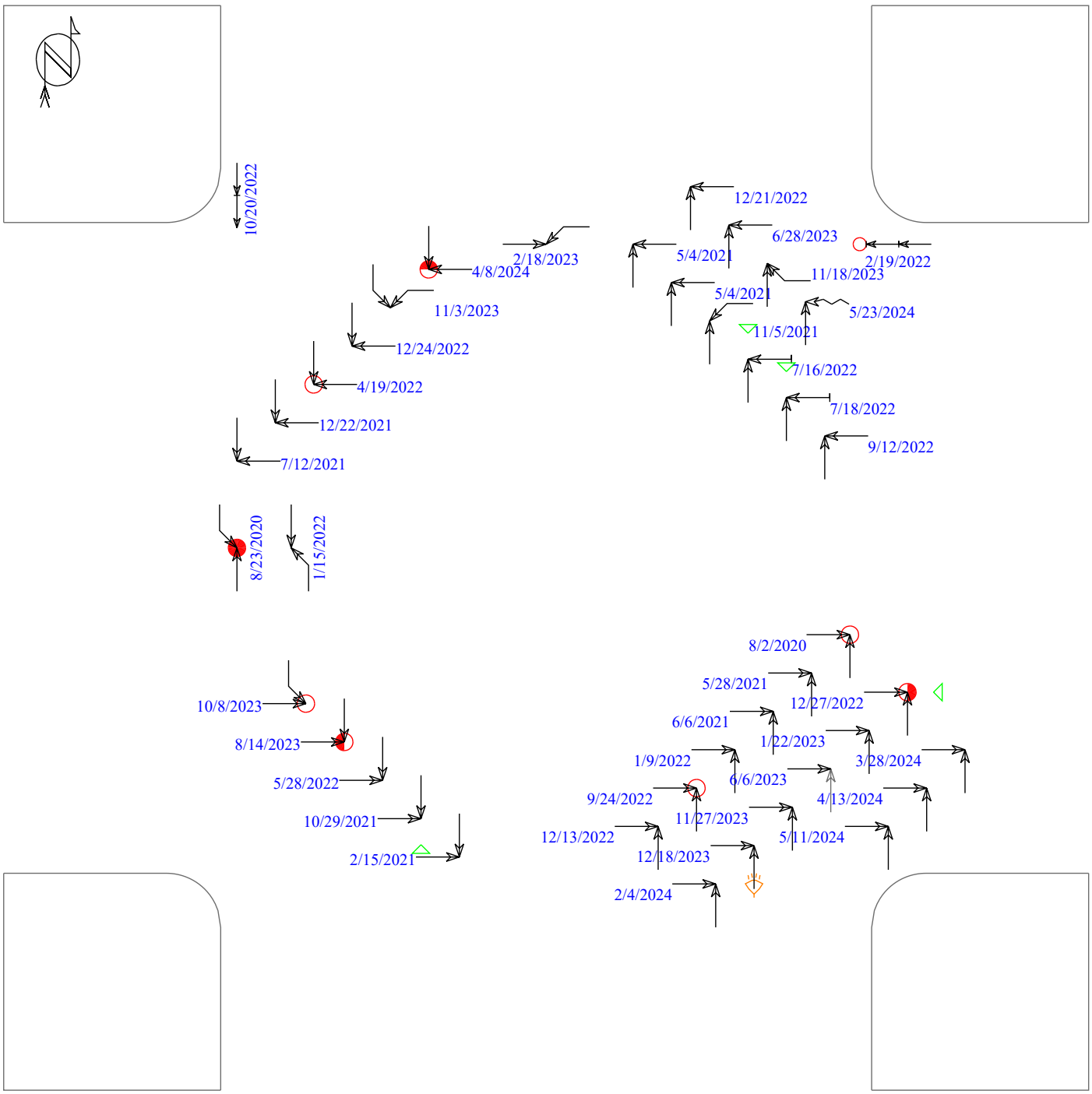
Jurisdiction: Statewide
Year: 2020, 2021, 2022, 2023, 2024
Map Selection: Yes
Filter: None

Analyst Information

Collision Diagram

41 Crashes

Clear



Straight
Stopped
Unknown
Backing
Overtaking
Sideswipe

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

Fatal
Major
Minor
Injury
Pedestrian
Bicycle

Fixed objects:
General
Signal
Tree
Pole
Curb
Animal

DUI
3rd vehicle
Nighttime

Crash Magic Online 7/31/2024

EXISTING TRAFFIC VOLUMES

Heartland Drive and Commerce Drive Roundabout

Iowa DOT Traffic Map Data

Road Name	Iowa DOT AADT
Heartland Drive – North Leg	5900 (Last counted in 2010)
Heartland Drive – South Leg	3610 (Last counted in 2006)
Commerce Drive – East Leg	15,000 (Last counted in 2010)
Commerce Drive – West Leg	No traffic count information available

County:	Johnson	Prepared By:	McClure
Location:	Heartland and Commerce	Date Prepared:	7/31/2024
Proposed Improvements:	Install Roundabout at intersection of Heartland Drive and Commerce Drive		
Estimated Improvement Cost:	$ 1,133,000		
Inflation on Crash Costs:	4%	Annual Maintenance: (% of Improvement Cost)	2%
Discount Rate:	4%		
Estimated Service Life:	20	Annual Maintenance Cost:	$ 22,660

Method Choice: CRF Method

The Crash Reduction Factor (CRF) Method applies one to three CRFs to historical crashes to estimate reductions in future crashes. Crash Modification Factors (CMFs) can be converted to CRFs. For additional information, click the "Learn More" button.

Crash Reduction Factor (CRF) Method

Traffic Growth Factor:	1%
Number of CRFs:	1
Years of Crash History:	5

Combined CRF (Dominant Common Residuals Method)

Iowa DOT's preferred methodology for combining CRFs is Dominant Common Residuals, since it is more conservative than the other options.

	CRF 1:	Combined CRF
CRF Value (%)	75	**75.0**

Crash Severity	Rounded Societal Costs	Crash History (Total):	CRF (from above)	Crash History - Annual Avg	Crashes Saved Annually
Fatal (K)	$ 4,200,000	0	75.0	**0.00**	**0.00**
Serious Injury (A)	$ 4,200,000	1	75.0	**0.20**	**0.15**
Minor Injury (B)	$ 280,000	4	75.0	**0.80**	**0.60**
Possible/Unknown Injury (C)	$ 130,000	5	75.0	**1.00**	**0.75**
Property Damage Only (O)	$ 20,000		75.0	**0.00**	**0.00**

Crash Severity	Annual Societal Benefit
Fatal (K)	**$ -**
Serious Injury (A)	**$ 630,000**
Minor Injury (B)	**$ 168,000**
Possible/Unknown Injury (C)	**$ 97,500**
Property Damage Only (O)	**$ -**

Total Benefits and Costs

		Implementation Cost	$ 1,133,000
		Present Value of Maint.	$ 307,957
Present Value Benefits (Societal Benefits)	$ 13,227,168	Present Value Costs (Impl. and Maint. Costs)	$ 1,440,957
Present Value Net Return	$ 11,786,211		
Benefit Cost Ratio	**9.18**		

Form continues on next page

County:	Johnson	Prepared By:	McClure
Location:	Heartland and Commerce	Date Prepared:	7/31/2024

No Input Necessary - No Custom Values In Use

General Customizations

No change to Crash Costs

No change to Discount Rate

No change to Maintenance Costs

Method-Specific Customizations

No change to Traffic Growth Rate

No change to Crash History

RESOLUTION NO. 2024-111

RESOLUTION AUTHORIZING THE CITY OF CORALVILLE, IOWA, TO MAKE AN APPLICATION TO THE IOWA DEPARTMENT OF TRANSPORTATION TRAFFIC SAFETY IMPROVEMENT PROGRAM (TSIP) FOR THE PARTIAL FUNDING OF THE HEARTLAND DRIVER AND COMMERCE DRIVE INTERSECTION IMPROVEMENTS, WHICH INCLUDES THE RECONSTRUCTING THE INTERSECTION AS A ROUNDABOUT.

WHEREAS, the Iowa Department of Transportation has established the TSIP and provides funding where vehicular safety is a concern and documented; and

WHEREAS, said program allows for funding to be provided to local jurisdictions for eligible transportation projects or programs that will improve traffic safety at a specific site or corridor with crash history; and

WHEREAS, the City of Coralville has determined that by reconstructing the intersection of Heartland Drive and Commerce Drive as a roundabout will help reduce crashes, thus improving safety.

NOW, THEREFORE, BE IT RESOLVED, by the City Council of the City of Coralville, Johnson County, Iowa, that

1. the City Council supports and approves the attached application for TSIP funding.

2. the City Council hereby commits the additional City funds necessary for construction of the project beyond any TSIP funding.

3. The City Council herby commits to accepting and maintaining these improvements.

BE IT FURTHER RESOLVED, the Mayor is hereby authorized to execute said application on behalf of the City.

Passed and approved this 13th day of August, 2024.

Meghann Foster, Mayor

ATTEST:

Thorsten J. Johnson, City Clerk

The above foregoing Resolution 2024-111 was introduced by Council Member Goodrich moved for its adoption. This motion was seconded by Council Member Peterson after discussion, the following roll was called:

AYES: Huynh, Peterson, Goodrich, Knudson
NAYS: None
ABSENT: Vogelzang

Whereupon the Mayor declared the motion duly carried and the Resolution duly adopted August 13, 2024.

Meghann Foster, Mayor

ATTEST:

Thorsten J. Johnson, City Clerk

Rev. 07/23

A

Application for SITE-SPECIFIC TSIP FUNDS

GENERAL INFORMATION **DATE:** 8/15/2024

Location / Title of Project Elmore Avenue at 46th Street Signal Installation

Applicant City of Davenport

Contact Person Gary Statz, P.E. Title Traffic Engineer

Complete Mailing Address 1200 E 46th St Davenport, IA 52807

Phone (563) 326-7754 (Area Code) E-Mail gary.statz@davenportiowa.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	$	300,000
Total Project Cost	$	300,000
Safety Funds Requested	**$**	**300,000**

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
2017138274	E 46th St and Elmore Ave	☐	☒	0.29	
		☐	☐		

A

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 Davenport, Iowa

Signed: _____ 8/14/2024
Signature Date Signed

Mike Matson, Mayor
Printed Name

Attest: Brian Krup 8/14/2024
Signature Date Signed

Brian Krup, Deputy City Clerk
Printed Name

Action item # 2024-335

A

Resolution No. 2024-335

Resolution offered by Alderman R. Dunn.

RESOLVED by the City Council of the City of Davenport, Iowa.

RESOLUTION authorizing submission of a grant application to the Iowa Department of Transportation's Traffic Safety Improvement Program for financial assistance to install traffic signals at the intersection of Elmore Avenue and East 46th Street.

WHEREAS, the City of Davenport, Iowa believes it is necessary to improve the intersection of Elmore Avenue and East 46th Street by installing traffic signals; and

WHEREAS, if awarded funding through the Traffic Safety Improvement Program, the City shall commit any additional funds necessary to complete this project.

NOW, THEREFORE, BE IT RESOLVED by the City Council of the City of Davenport, Iowa that staff is hereby authorized to prepare and submit a grant application to the Iowa Department of Transportation's Traffic Safety Program for financial assistance to install traffic signals at the intersection of Elmore Avenue and East 46th Street.

Passed and approved this 14th day of August, 2024.

Approved:

Mike Matson
Mayor

Attest:

Brian Krup
Deputy City Clerk

NARRATIVE **Section B**

With traffic increasing in this commercial area, there is a need for signalization at the intersection of Elmore Avenue and 46th Street. The traffic signal warrants had not been met in the past because the volume on 46th Street was a little too low. During the busy times of the day, turning left at the intersection can be difficult due to the heavy traffic volume and because Elmore curves to the west as it heads north. Because of this situation, many drivers turn left at the business road that is 275 feet west of the intersection to get to their destination. They can use 2 other signals between 46th and 53rd Streets to cross Elmore. This has led to the deterioration of the business road. We believe that there would be a large increase in traffic on 46th at Elmore if traffic signals were installed because drivers would no longer use the business road as an alternate route.

EXISTING CONDITIONS

The intersection of Elmore Avenue and 46th Street is a T-intersection with a delivery truck exit located across the street from 46th Street. Elmore has the right of way and the east-west directions have stop signs. Elmore is a 5-lane road with turn lanes in the middle. The speed limit is 45 mph and the traffic volume is 17,000 vehicles per day. The right of way is 100 feet wide. 46th Street has left and right turn lanes at the intersection. The speed limit is 25 mph and the traffic volume is 6000 vehicles per day about 3000 feet west of the intersection. The right of way is 80 feet wide. There are no obstructions within the right of way at this intersection so there are no clear zone issues. The business road that many drivers use to avoid Elmore at 46th has poor pavement conditions and for the most part, sub-standard signage. Our goal is to encourage drivers to use 46th at Elmore instead of the business road, but we need to add traffic signals in order to make the intersection safer. If right turns are included when counting 46th Street and we use the 2-lane condition in the traffic warrant, the volumes do meet the warrants for signalization. If even half the traffic that turns left at the business road turn left at Elmore instead, there would be a much greater need for signalization. This is what we expect if Elmore at 46th becomes signalized. The warrant analysis is shown in Section J, with the traffic counts.

CRASH HISTORY

For this safety improvement, we are trying to correct angle type crashes. The CMF chosen was CMF ID 323, Install A Traffic Signal (major road speed limit at least 40 mph). For this CMF, the crash type is ‘Angle’, and the crash severity is ‘All”. The CMF Value is 67%.

At the intersection of Elmore Avenue and E 46th Street, there have been 17 crashes in the last five years. Of those 17:

10 were broadside
4 were rear-end
1 was sideswipe, same direction
1 was angle
1 was head-on

NARRATIVE Cont. **Section B**

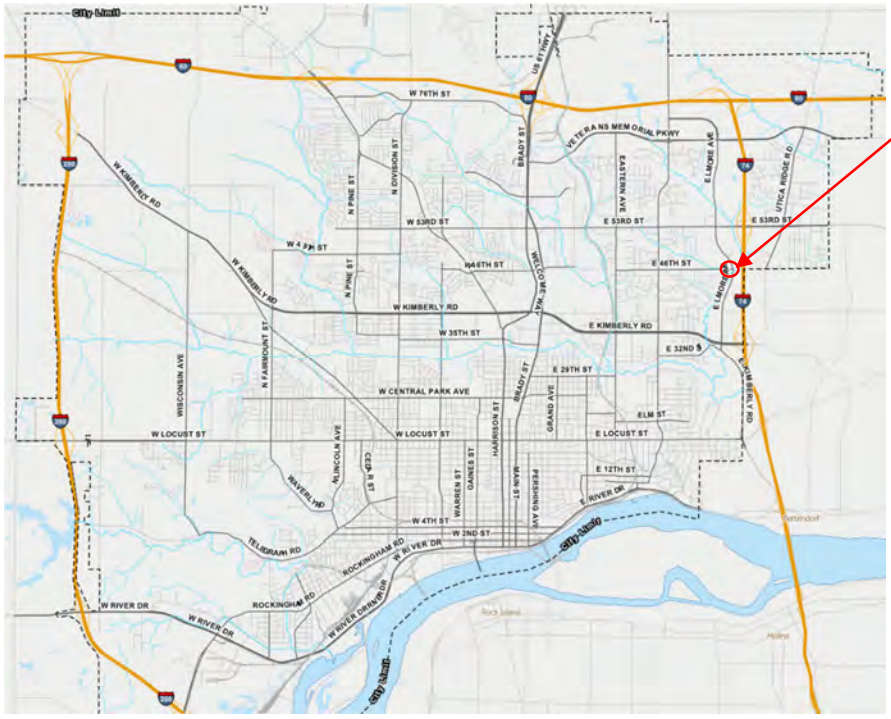
The head-on crash involved a northbound vehicle making a left turn which was considered an angle-type crash. Since the CMF chosen was only for angle crashes, the 10 broadside crashes, 1 angle crash, and 1 head-on crash were used to calculate the benefit cost ratio. Of these 12 angle-type crashes, 7 were property damage only and 5 were possible/unknown injury crashes.

BREAKDOWN OF COSTS **Section C**

This project will be bid as a lump sum because it will only involve installation of new traffic signals and not any roadwork. The cost is estimated to be $300,000.

TIME SCHEDULE **Section D**

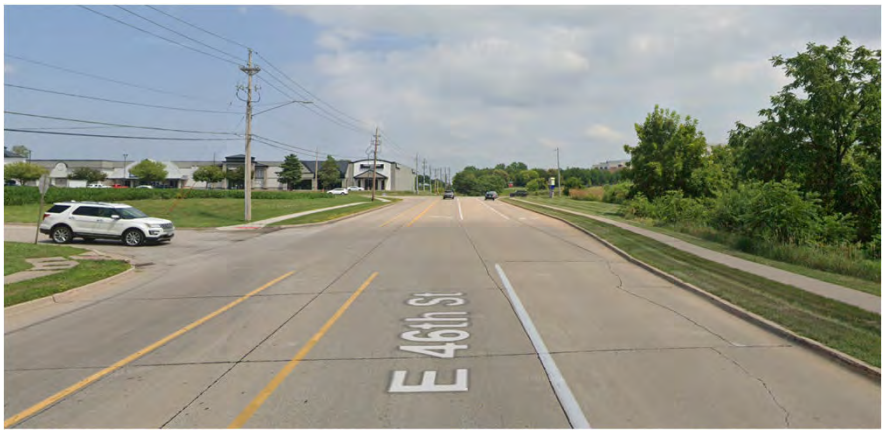
This project will be added to the City of Davenport's FY 2026 Capital Improvements Program for work that begins on July 1, 2025. We expect to design this project during the spring of 2025 with a letting in July 2025. The construction would begin when the weather allows in 2026 with a scheduled completion date of May 23, 2026. This completion date will only be achievable if the mast arms and poles arrive in a timely manner. The lead time on some of the signal equipment has been quite long recently, but there should be enough time over the winter of 2025-2026 for the equipment to arrive in time. If the equipment arrives more quickly than expected, we will work with the contractor to do the work as soon as possible.



Section E

Project Location

Section F – Color Photos



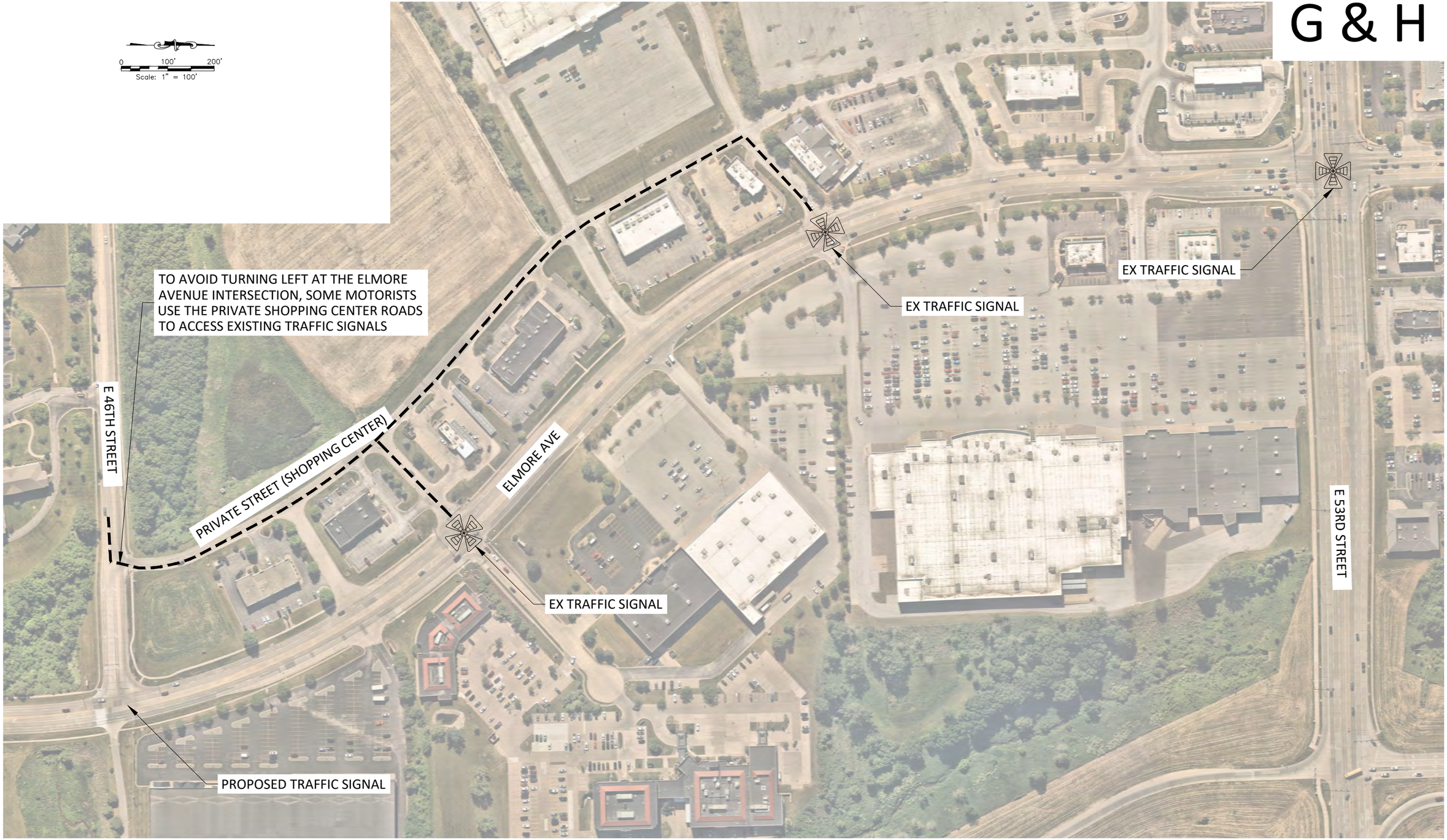
Looking east. Private street (shopping center access) in the foreground, intersection of Elmore Ave and E 46th St in the background

Looking west

Looking south. E 46th Street is on the right.

Looking north. E 46th Street in on the left and curve straight ahead..

G & H



ELMORE AVENUE & E 46TH STREET
TRAFFIC SIGNAL

City of Davenport, Iowa
Engineering Division
1200 E. 46th Street
(563) 326-7729
Davenport, Iowa 52807
Fax (563) 327-5182

PROJECT NUMBER: RISE PROJECT NO. RMX-XXXX(XXX)--9E-82	PLOT DATE: 8/14/2024
CIP NUMBER: XXXXX	PLOT SCALE: 6" = 1'-0"_XREF
REVISION:	DESIGNED BY: XXX
	DRAWN BY: XXX
	CHECKED BY: XXX
DWG.FILE :Aerial.dwg	

TSIP APPLICATION
PLAN VIEW
AERIAL PHOTOGRAPH

SHEET NO.
G.1
TOTAL SHEET NO.
1

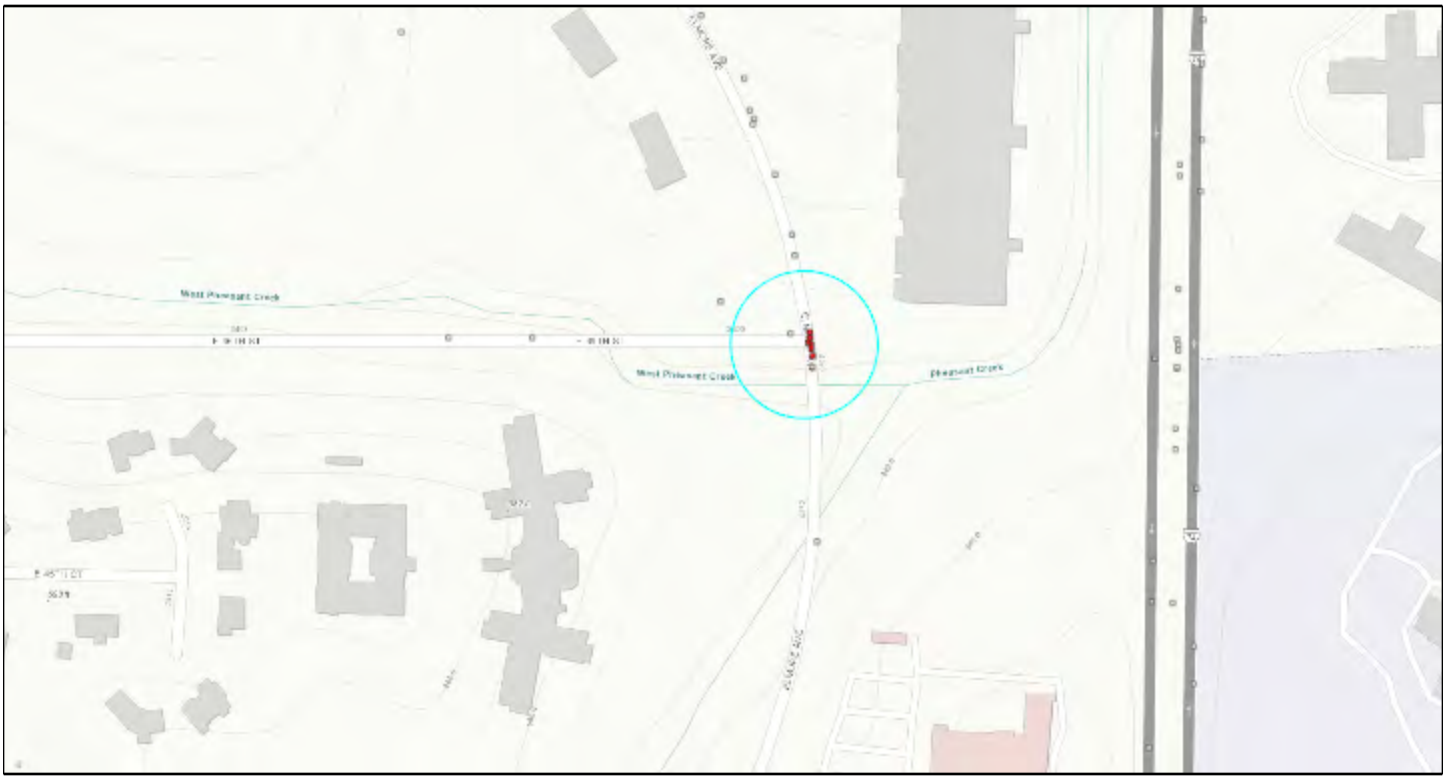
Iowa Crash Analysis Tool
Quick Report
2019-2024

Crash Severity	18
Fatal Crash	0
Suspected Serious Injury Crash	0
Suspected Minor Injury Crash	0
Possible/Unknown Injury Crash	6
Property Damage Only	12

Injury Status Summary	12
Fatalities	0
Suspected serious/incapacitating	0
Suspected minor/non-incapacitating	0
Possible (complaint of pain/injury)	11
Uninjured	0
Unknown	0
Not Reported	1

Property/Vehicles/Occupants	
Property Damage Total (dollars):	176,700.00
Average (per crash dollars):	9,816.67
Total Vehicles:	38.00
Average (per crash):	2.11
Total Occupants:	55.00
Average (per crash):	3.06

Average Severity	
Fatalities/Fatal Crash:	0.00
Fatalities/Crash:	0.00
Injuries/Crash:	0.61
Major Injuries/Crash:	0.00
Minor Injuries/Crash:	0.00
Possible/Unknown Injuries/Crash:	0.61



Major Cause			18
Animal	0	Ran traffic signal	0
Ran stop sign	0	Failed to yield to emergency vehicle	0
FTYROW: At uncontrolled intersection	0	FTYROW: Making right turn on red signal	0
FTYROW: From stop sign	7	FTYROW: From yield sign	0
FTYROW: Making left turn	2	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	0
Exceeded authorized speed	0	Improper or erratic lane changing	1
Operating vehicle in an reckless/erratic/care...	0	Followed too close	3
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	1
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...	1
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	1
Unknown	2	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	1	1	1	0	0	0	0	0	3
Monday	0	0	0	0	0	0	0	0	1	0	0	0	0	1
Tuesday	0	0	0	0	0	0	0	0	0	0	0	1	0	1
Wednesday	0	0	0	0	0	0	0	0	1	0	1	0	0	2
Thursday	0	0	0	0	0	2	2	1	1	0	0	0	0	6
Friday	0	0	0	0	0	2	0	1	0	0	0	0	0	3
Saturday	0	0	0	0	0	0	0	1	0	1	0	0	0	2
Total	0	0	0	0	0	5	3	4	3	1	1	1	0	18

Manner of Crash Collision	**18**
Non-collision (single vehicle)	0
Head-on (front to front)	1
Rear-end (front to rear)	4
Angle (oncoming left turn)	1
Broadside (front to side)	11
Sideswipe (same direction)	1
Sideswipe (opposite direction)	0
Rear to rear	0
Rear to side	0
Not reported	0
Other	0
Unknown	0

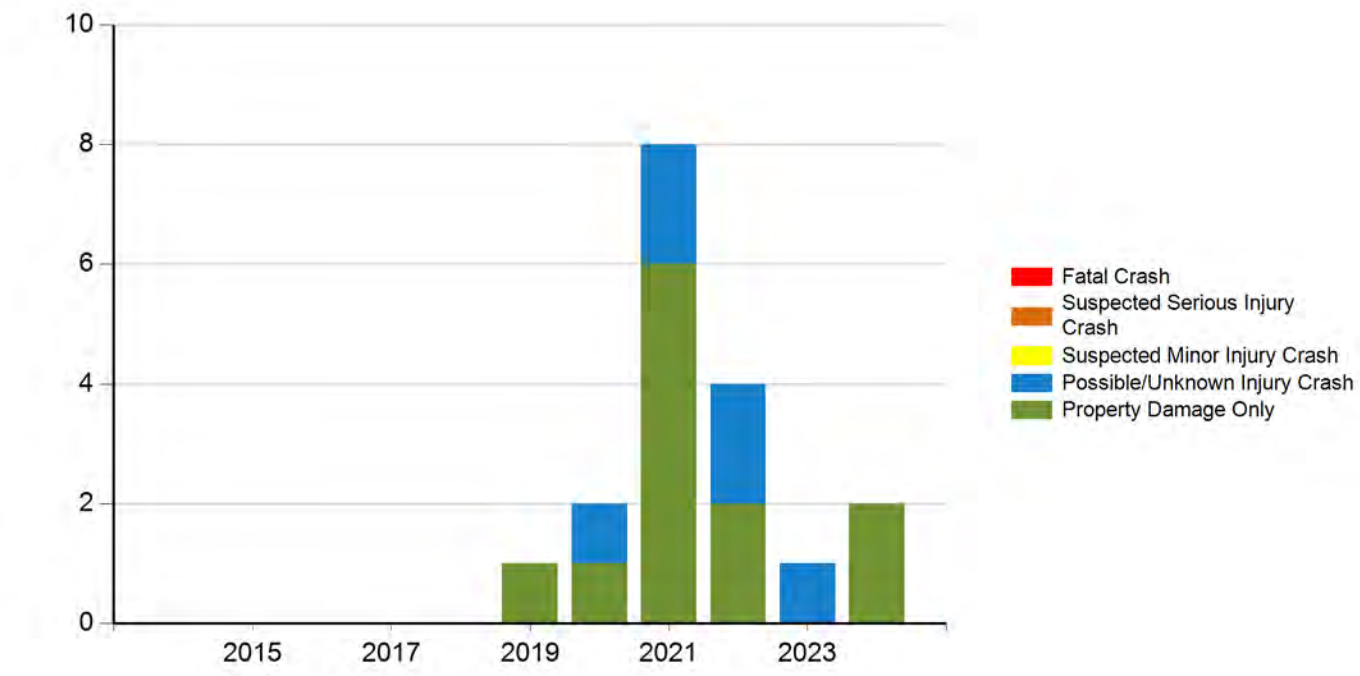
Surface Conditions	**18**
Dry	13
Wet	3
Ice/frost	0
Snow	1
Slush	0
Mud/dirt	0
Water (standing or moving)	0
Sand	0
Oil	0
Gravel	0
Not reported	1
Other	0
Unknown	0

Fixed Object Struck			**38**
Bridge overhead structure	0	Bridge pier or support	0
Bridge/bridge rail parapet	0	Curb/island/raised median	0
Ditch	0	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	1
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)	37

Crash Severity - Annual

Crash Year	Fatal Crash	Suspected Serious Injury Crash	Suspected Minor Injury Crash	Possible/Unknown Injury Crash	Property Damage Only	**Total**
2014	0	0	0	0	0	0
2015	0	0	0	0	0	0
2016	0	0	0	0	0	0
2017	0	0	0	0	0	0
2018	0	0	0	0	0	0
2019	0	0	0	0	1	1
2020	0	0	0	1	1	2
2021	0	0	0	2	6	8
2022	0	0	0	2	2	4
2023	0	0	0	1	0	1
2024	0	0	0	0	2	2
Total	0	0	0	6	12	18

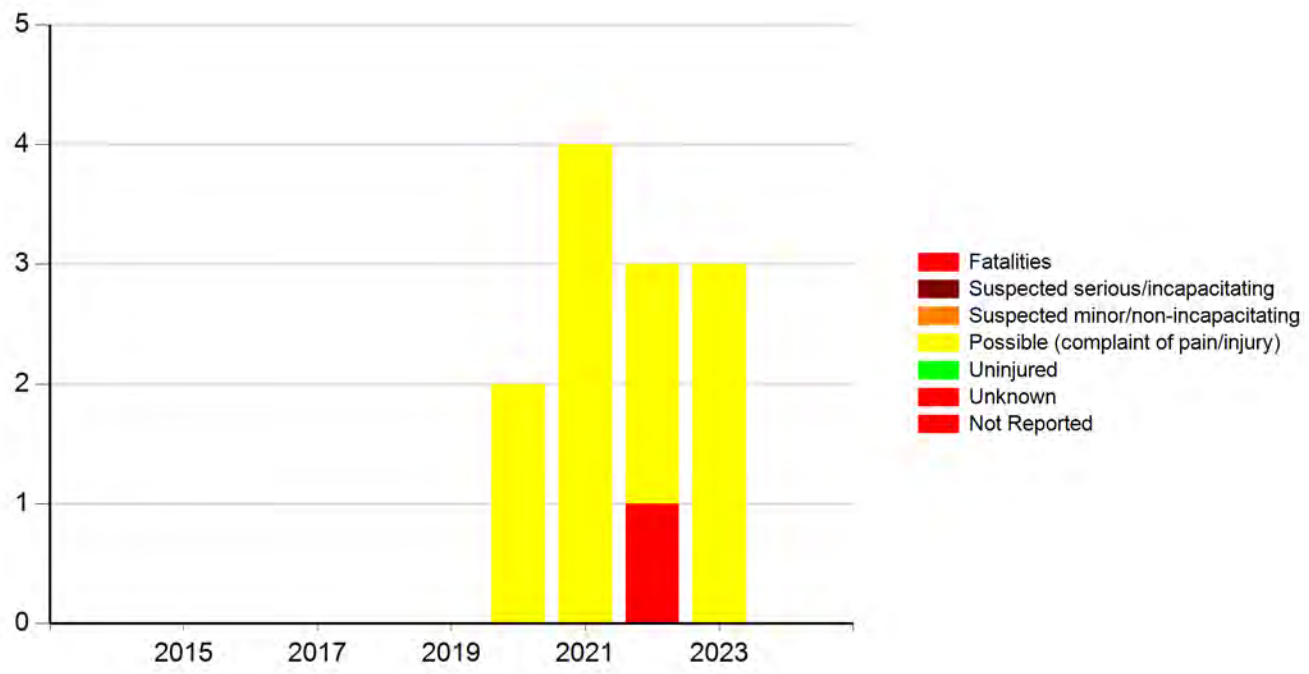
Severity/Year



Injury Status - Annual

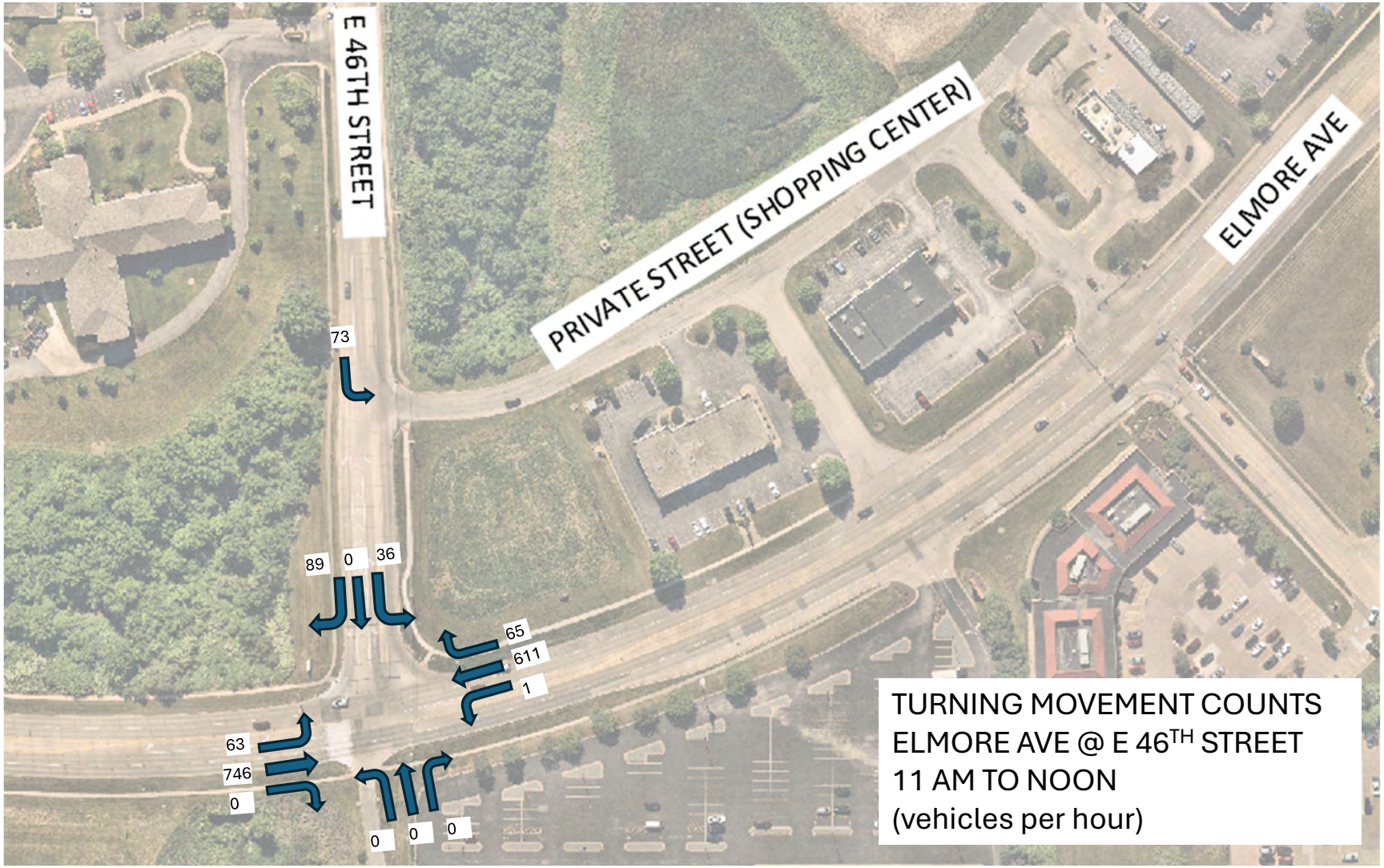
Crash Year	Fatalities	Suspected serious/incapacitating	Suspected minor/non-incapacitating	Possible (complaint of pain/injury)	Uninjured	Unknown	Not Reported	**Total**
2014	0	0	0	0	0	0	0	0
2015	0	0	0	0	0	0	0	0
2016	0	0	0	0	0	0	0	0
2017	0	0	0	0	0	0	0	0
2018	0	0	0	0	0	0	0	0
2019	0	0	0	0	0	0	0	0
2020	0	0	0	2	0	0	0	2
2021	0	0	0	4	0	0	0	4
2022	0	0	0	2	0	0	1	3
2023	0	0	0	3	0	0	0	3
2024	0	0	0	0	0	0	0	0
Total	0	0	0	11	0	0	1	12

Injury Status/Year



TURNING MOVEMENT COUNTS
ELMORE AVE & E 46TH ST

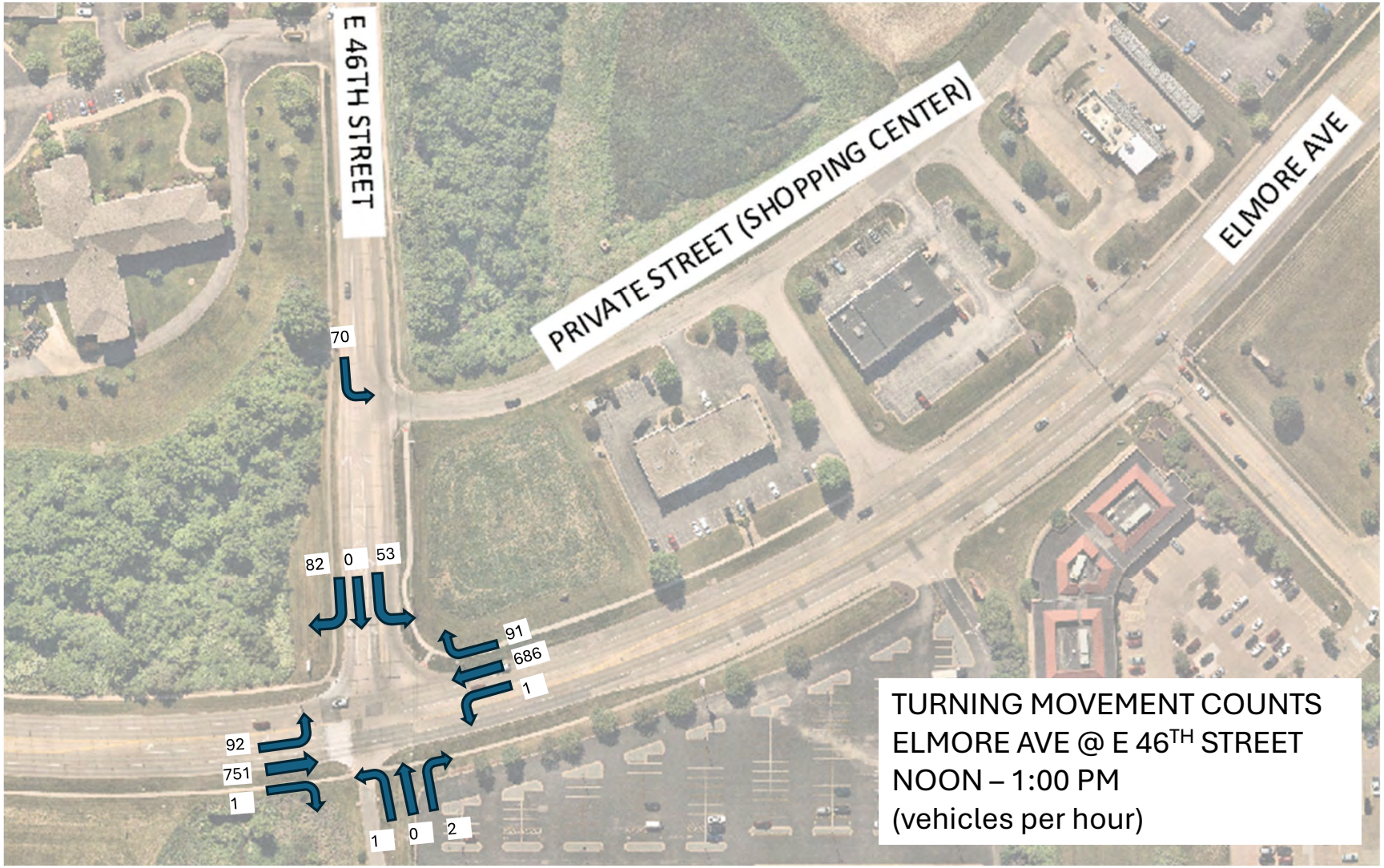
J



NORTH

J

TURNING MOVEMENT COUNTS
ELMORE AVE & E 46TH ST



NORTH

J

TURNING MOVEMENT COUNTS
ELMORE AVE & E 46TH ST

NORTH

J

TURNING MOVEMENT COUNTS
ELMORE AVE & E 46TH ST

NORTH

TURNING MOVEMENT COUNTS
ELMORE AVE & E 46TH ST

J

Hourly (Cars + Trucks)	Southbound				Westbound				Northbound				Eastbound				Intersection
Time	Left	Through	Right	Total	Left	Through	Right	Total	Left	Through	Right	Total	Left	Through	Right	Total	Total 1 Hour
6:00	0	84	10	94	0	0	0	0	21	93	0	114	25	0	23	48	256
7:00	0	148	24	172	0	0	0	0	33	189	0	222	45	0	31	76	470
8:00	0	214	27	241	0	0	0	0	48	301	0	349	62	0	60	122	712
9:00	1	374	47	422	0	0	0	0	47	424	0	471	43	1	64	108	1001
10:00	3	564	60	627	0	0	0	0	67	575	0	642	38	0	81	119	1388
11:00	1	611	65	677	0	0	0	0	63	746	0	809	36	0	89	125	1611
12:00	1	686	91	778	1	0	2	3	92	751	1	844	53	0	82	135	1760
13:00	1	688	77	766	0	0	0	0	51	692	0	743	45	1	89	135	1644
14:00	1	625	65	691	0	0	0	0	73	659	0	732	40	0	69	109	1532
15:00	0	589	94	683	0	0	0	0	81	648	0	729	33	0	91	124	1536
16:00	0	630	106	736	0	0	1	1	83	651	0	734	45	0	105	150	1621
17:00	2	563	85	650	228	199	34	461	57	565	0	622	41	0	76	117	1850

TURNING MOVEMENT COUNTS
ELMORE AVE & E 46TH ST
(15 MINUTE INCREMENTS)

J

15 Minute (Cars + Trucks)	Southbound				Westbound				Northbound				Eastbound				Intersection
Time	Left	Through	Right	Total	Left	Through	Right	Total	Left	Through	Right	Total	Left	Through	Right	Total	Total 15 Min.
0:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6:00	0	24	4	28	0	0	0	0	4	11	0	15	5	0	5	10	53
6:15	0	17	2	19	0	0	0	0	4	14	0	18	3	0	6	9	46
6:30	0	16	1	17	0	0	0	0	5	30	0	35	10	0	7	17	69
6:45	0	27	3	30	0	0	0	0	8	38	0	46	7	0	5	12	88
7:00	0	27	6	33	0	0	0	0	5	34	0	39	5	0	6	11	83
7:15	0	31	7	38	0	0	0	0	8	38	0	46	11	0	6	17	101
7:30	0	37	4	41	0	0	0	0	6	53	0	59	10	0	8	18	118
7:45	0	53	7	60	0	0	0	0	14	64	0	78	19	0	11	30	168
8:00	0	39	2	41	0	0	0	0	7	53	0	60	14	0	16	30	131
8:15	0	42	6	48	0	0	0	0	13	83	0	96	9	0	12	21	165
8:30	0	62	9	71	0	0	0	0	10	76	0	86	20	0	21	41	198
8:45	0	71	10	81	0	0	0	0	18	89	0	107	19	0	11	30	218
9:00	0	67	10	77	0	0	0	0	14	95	0	109	9	1	15	25	211
9:15	0	83	14	97	0	0	0	0	11	100	0	111	12	0	19	31	239
9:30	0	115	15	130	0	0	0	0	12	102	0	114	10	0	10	20	264
9:45	1	109	8	118	0	0	0	0	10	127	0	137	12	0	20	32	287
10:00	0	127	8	135	0	0	0	0	14	126	0	140	15	0	22	37	312
10:15	0	135	21	156	0	0	0	0	22	161	0	183	2	0	18	20	359
10:30	2	151	17	170	0	0	0	0	16	138	0	154	11	0	24	35	359
10:45	1	151	14	166	0	0	0	0	15	150	0	165	10	0	17	27	358
11:00	0	145	15	160	0	0	0	0	11	195	0	206	9	0	14	23	389
11:15	0	161	23	184	0	0	0	0	17	161	0	178	14	0	28	42	404
11:30	1	141	13	155	0	0	0	0	14	210	0	224	6	0	21	27	406
11:45	0	164	14	178	0	0	0	0	21	180	0	201	7	0	26	33	412
12:00	0	163	19	182	0	0	0	0	20	193	0	213	15	0	26	41	436
12:15	1	173	24	198	0	0	0	0	16	179	1	196	13	0	18	31	425
12:30	0	171	23	194	0	0	2	2	29	184	0	213	11	0	20	31	440
12:45	0	179	25	204	1	0	0	1	27	195	0	222	14	0	18	32	459
13:00	1	164	23	188	0	0	0	0	13	172	0	185	14	0	30	44	417
13:15	0	171	21	192	0	0	0	0	19	176	0	195	12	0	23	35	422
13:30	0	173	14	187	0	0	0	0	9	157	0	166	11	1	12	24	377
13:45	0	180	19	199	0	0	0	0	10	187	0	197	8	0	24	32	428
14:00	0	160	14	174	0	0	0	0	21	180	0	201	16	0	22	38	413
14:15	0	164	14	178	0	0	0	0	14	156	0	170	7	0	21	28	376
14:30	1	148	22	171	0	0	0	0	18	167	0	185	9	0	13	22	378
14:45	0	153	15	168	0	0	0	0	20	156	0	176	8	0	13	21	365
15:00	0	150	19	169	0	0	0	0	25	141	0	166	10	0	23	33	368
15:15	0	153	26	179	0	0	0	0	21	173	0	194	4	0	17	21	394
15:30	0	136	20	156	0	0	0	0	21	169	0	190	10	0	25	35	381
15:45	0	150	29	179	0	0	0	0	14	165	0	179	9	0	26	35	393
16:00	0	155	24	179	0	0	0	0	13	164	0	177	15	0	31	46	402
16:15	0	165	28	193	0	0	0	0	22	158	0	180	14	0	19	33	406
16:30	0	159	25	184	0	0	1	1	21	174	0	195	7	0	25	32	412
16:45	0	151	29	180	0	0	0	0	27	155	0	182	9	0	30	39	401
17:00	2	146	21	169	0	0	0	0	18	145	0	163	15	0	23	38	370
17:15	0	152	23	175	90	71	11	172	17	138	0	155	8	0	22	30	532
17:30	0	139	21	160	74	77	12	163	8	154	0	162	5	0	10	15	500
17:45	0	126	20	146	64	51	11	126	14	128	0	142	13	0	21	34	448
18:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
18:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
18:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
18:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
19:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
19:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
19:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
19:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
20:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
20:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
20:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
20:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
21:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
21:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
21:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
21:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
22:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
22:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
22:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
22:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
23:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
23:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
23:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
23:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

All of the eastbound right turns were included in the analysis and eastbound was analyzed as two lanes. None of the vehicles using the private street (shopping center) to avoid delays at Elmore Avenue were included in this warrant analysis.

J

Traffic Signal Warrant Summary Worksheet 70%

The Worksheet(s) attached are provided as an attachment to the Engineering Investigation Study for:

Intersection: Elmore Ave & E 46th Street
County: Scott
City: Davenport

Major Street: Elmore Ave
Critical Approach Speed: 45 mph
Lanes: 2 or more lanes

Minor Street: E 46th Street
Critical Approach Speed: 25 mph
Lanes: 2 or more lanes

% Right Turns Included
From North (SB) 100%
From East (WB) 100%
From South (NB) 100%
From West (EB) 100%

In built-up area of isolated community of < 10,000 population? No
Total number of approaches at intersection? 4 or more
If it is a "T" intersection, inflate minor threshold to 150%? No
Manually set volume level? No

Analysis based on EXISTING volume data.

Date	Day of the Week	Time (HH:MM)			
		From	AM / PM	To	AM / PM

Warrant Evaluation Summary	Warrant Met:
Warrant 1: Eight - Hour Vehicular Volume	**Yes**
Condition A: Minimum Vehicular Volume	No
Condition B: Interruption of Continuous Traffic	Yes
Condition C: Combination: 80% of A and B	Yes
Warrant 2: Four-Hour Volume	**Yes**
Warrant 3: Peak Hour Volume	**Yes**
Warrant 4: Pedestrian Volume	**N/A**
Criterion A: Four-Hour	
Criterion B: Peak-Hour	
Warrant 5: School Crossing	**N/A**
Warrant 6: Coordinated Signal System	**N/A**
Warrant 7: Crash Experience	**N/A**
Warrant 8: Roadway Network	**N/A**
Warrant 9: Intersection Near a Grade Crossing	**N/A**

Warrant Analysis Conducted By:
Name:
Agency:
Date:

J

Warrant 1: Eight - Hour Vehicular Volume 70%

Warrant Evaluated? Yes **Warrant Satisfied? Yes** **Manually Set To:**

Condition A : Min. Veh. Volume		
Volume Level	70%	56%
Major Rd. Req	420	336
Minor Rd. Req	140	112
Number of Hours	1	8

Satisfied? No

Condition B: Interruption of Continuous Traffic		
Volume Level	70%	56%
Major Rd. Req	630	504
Minor Rd. Req	70	56
Number of Hours	9	10

Satisfied? Yes

Condition C: Combination of A & B at 56%

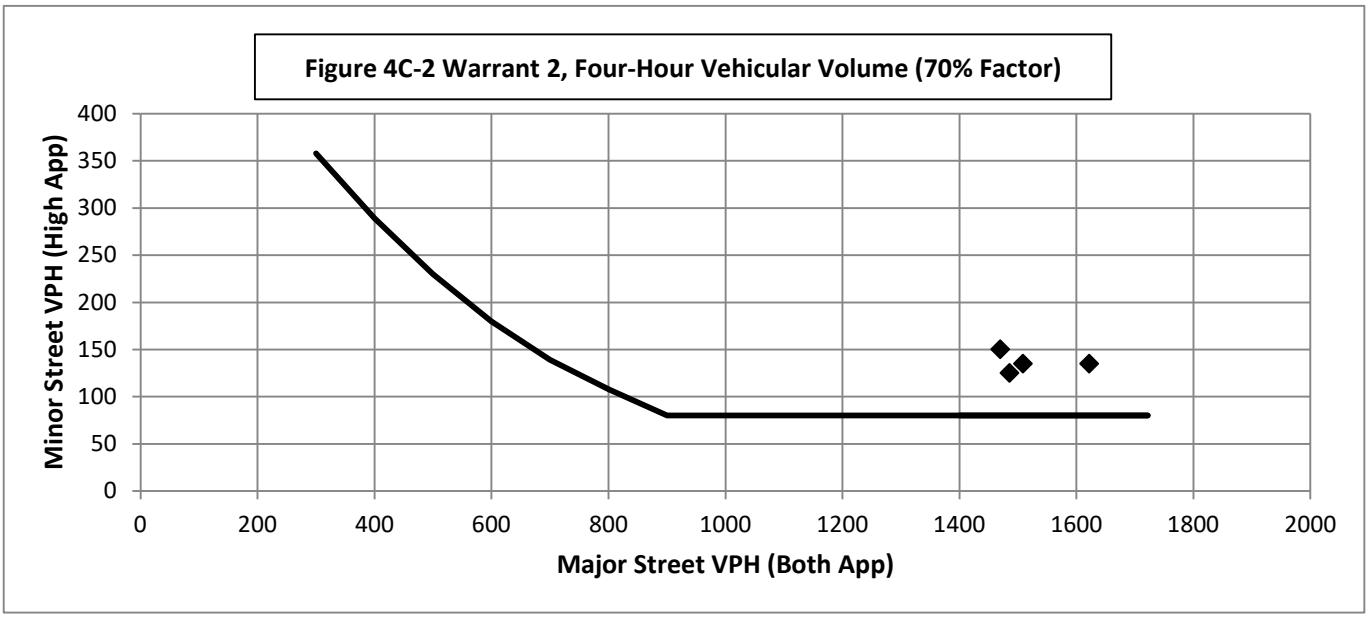
Satisfied? Yes

6:00 AM		Enter Start Time (Military Time) (HH:MM)			
Time Period	**From**	**To**	**Major Road: Both App. (VPH)**	**Minor Road: High App. (VPH)**	**Total**
1	6:00	7:00	0	0	0
2	7:00	8:00	0	0	0
3	8:00	9:00	0	0	0
4	9:00	10:00	590	122	712
5	10:00	11:00	893	108	1001
6	11:00	12:00	1269	119	1388
7	12:00	13:00	1486	125	1611
8	13:00	14:00	1622	135	1757
9	14:00	15:00	1509	135	1644
10	15:00	16:00	1423	109	1532
11	16:00	17:00	1413	124	1537
12	17:00	18:00	1470	150	1620
13	18:00	19:00	1272	117	1389
14	19:00	20:00	0	0	0
15	20:00	21:00	0	0	0
16	21:00	22:00	0	0	0

Warrant 2: Four-Hour Volume 70%

Warrant Evaluated? Yes
Warrant Satisfied? Yes
Manually Set To:

Hour Start	13:00	14:00	17:00	12:00
Major Road Vol.	1622	1509	1470	1486
Minor Road Vol.	135	135	150	125



Warrant 3: Peak Hour Volume 70%

Warrant Evaluated? Yes **Warrant Satisfied? Yes** **Manually Set To:**

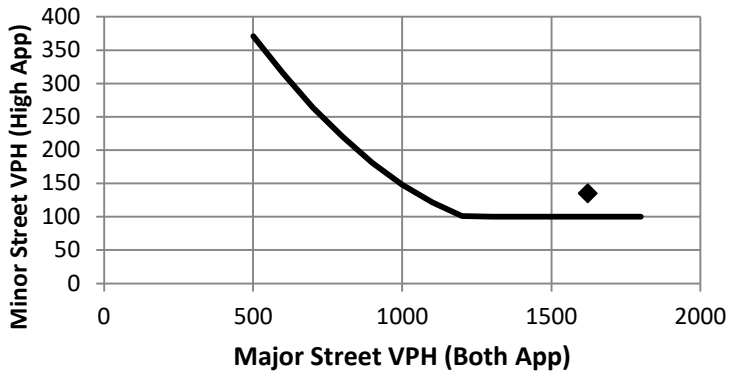
Condition justifying use of warrant:

Criteria		Met?
Delay on Minor Approach	5	
Volume on Minor Approach	150	Yes
Total Entering Volume (veh/h)	800	

Manually Set Peak Hour?

Peak Hour	Major Road Vol. (Both App.)	Minor Road Vol. (High App.)
13:00	1622	135

Figure 4C-4 Warrant 3, Peak Hour (70% Factor)



Warrant 4: Pedestrian Volume 70%

Warrant Evaluated? No **Warrant Satisfied? N/A** **Manually Set To:**

Criterion A: Four Hour

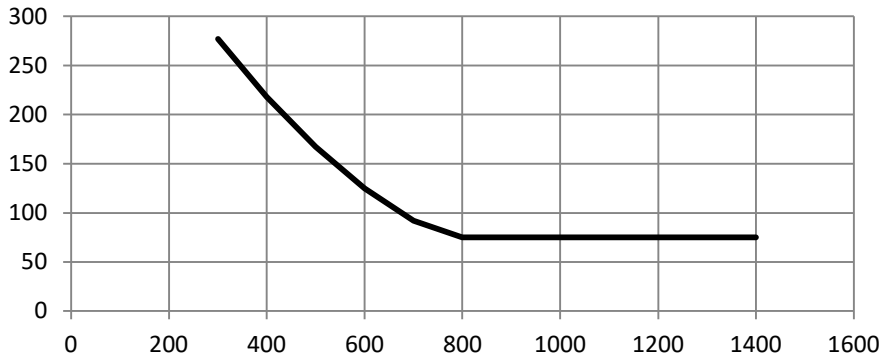
Hour (Start)	Pedestrian Volume	Major Road Vol.
		0
		0
		0
		0

Manually Set Major Rd Vol?

Avg. walk speed less than 3.5 ft/s?

Criterion A Satisfied?

Figure 4C-6 Warrant 4, Pedestrian Four-Hour Volume (70% Factor)

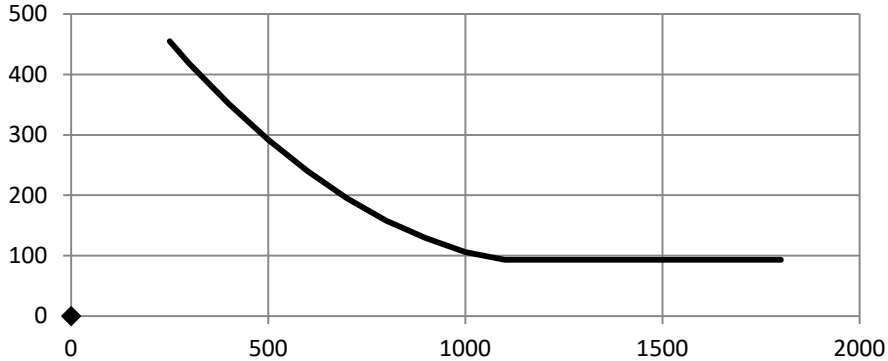


Criterion B: Peak Hour

Peak Hour	Pedestrian Vol.	Major Road Vol.
0:00	0	0

Criterion B Satisfied?

Figure 4C-8 Warrant 4, Pedestrian Peak Hour (70% Factor)



All of the eastbound right turns were removed from the analysis and eastbound was considered as one lane. It was assumed that one-half of the left turns at the private street (shopping center) were cutting through the shopping center to avoid delays at Elmore Avenue. Therefore, these lefts were added to the volumes at Elmore Avenue for the warrant analysis.

J

Traffic Signal Warrant Summary Worksheet 70%

The Worksheet(s) attached are provided as an attachment to the Engineering Investigation Study for:

Intersection: Elmore Ave & E 46th Street
County: Scott
City: Davenport

Major Street: Elmore Ave
Critical Approach Speed: 45 mph
Lanes: 2 or more lanes

Minor Street: E 46th Street
Critical Approach Speed: 25 mph
Lanes: 1 lane

% Right Turns Included
From North (SB) 100%
From East (WB) 100%
From South (NB) 100%
From West (EB) 0%

In built-up area of isolated community of < 10,000 population? No
Total number of approaches at intersection? 4 or more
If it is a "T" intersection, inflate minor threshold to 150%? No
Manually set volume level? No

Analysis based on EXISTING volume data.

Date	Day of the Week	Time (HH:MM)			
		From	AM / PM	To	AM / PM

Warrant Evaluation Summary	Warrant Met:
Warrant 1: Eight - Hour Vehicular Volume	**No**
Condition A: Minimum Vehicular Volume	No
Condition B: Interruption of Continuous Traffic	No
Condition C: Combination: 80% of A and B	No
Warrant 2: Four-Hour Volume	**Yes**
Warrant 3: Peak Hour Volume	**Yes**
Warrant 4: Pedestrian Volume	**N/A**
Criterion A: Four-Hour	
Criterion B: Peak-Hour	
Warrant 5: School Crossing	**N/A**
Warrant 6: Coordinated Signal System	**N/A**
Warrant 7: Crash Experience	**N/A**
Warrant 8: Roadway Network	**N/A**
Warrant 9: Intersection Near a Grade Crossing	**N/A**

Warrant Analysis Conducted By:
Name:
Agency:
Date:

J

Warrant 1: Eight - Hour Vehicular Volume 70%

Warrant Evaluated? Yes **Warrant Satisfied? No** **Manually Set To:**

Condition A : Min. Veh. Volume		
Volume Level	70%	56%
Major Rd. Req	420	336
Minor Rd. Req	105	84
Number of Hours	0	2

Satisfied? No

Condition B: Interruption of Continuous Traffic		
Volume Level	70%	56%
Major Rd. Req	630	504
Minor Rd. Req	53	42
Number of Hours	4	6

Satisfied? No

Condition C: Combination of A & B at 56%

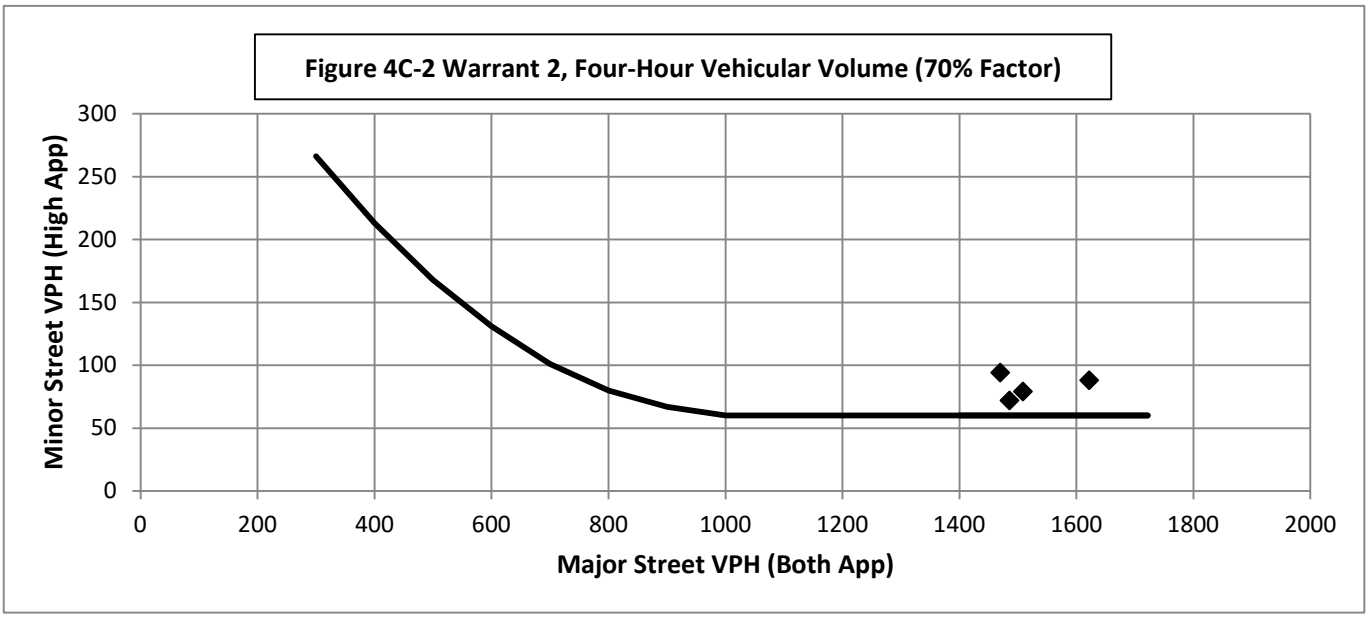
Satisfied? No

6:00 AM		Enter Start Time (Military Time) (HH:MM)			
Time Period	**From**	**To**	**Major Road: Both App. (VPH)**	**Minor Road: High App. (VPH)**	**Total**
1	6:00	7:00	0	0	0
2	7:00	8:00	0	0	0
3	8:00	9:00	0	0	0
4	9:00	10:00	590	62	652
5	10:00	11:00	893	44	937
6	11:00	12:00	1269	38	1307
7	12:00	13:00	1486	72	1558
8	13:00	14:00	1622	88	1710
9	14:00	15:00	1509	79	1588
10	15:00	16:00	1423	40	1463
11	16:00	17:00	1413	33	1446
12	17:00	18:00	1470	94	1564
13	18:00	19:00	1272	41	1313
14	19:00	20:00	0	0	0
15	20:00	21:00	0	0	0
16	21:00	22:00	0	0	0

Warrant 2: Four-Hour Volume 70%

Warrant Evaluated? Yes
Warrant Satisfied? Yes
Manually Set To:

Hour Start	13:00	14:00	17:00	12:00
Major Road Vol.	1622	1509	1470	1486
Minor Road Vol.	88	79	94	72



J

Warrant 3: Peak Hour Volume 70%

Warrant Evaluated? Yes **Warrant Satisfied? Yes** **Manually Set To:**

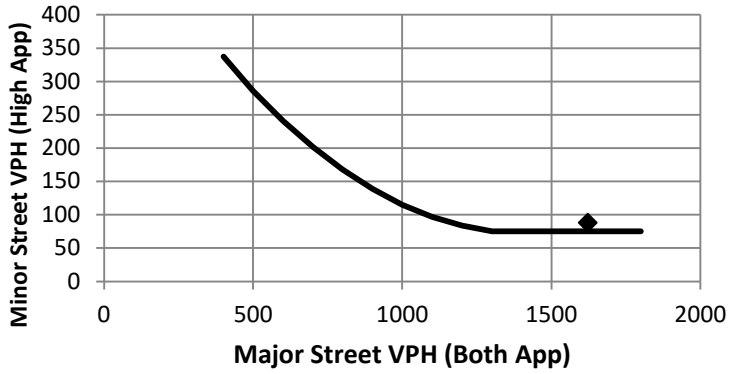
Condition justifying use of warrant:

Criteria		Met?
Delay on Minor Approach	4	
Volume on Minor Approach	100	No
Total Entering Volume (veh/h)	800	

Manually Set Peak Hour?

Peak Hour	Major Road Vol. (Both App.)	Minor Road Vol. (High App.)
13:00	1622	88

Figure 4C-4 Warrant 3, Peak Hour (70% Factor)



Warrant 4: Pedestrian Volume 70%

Warrant Evaluated? No **Warrant Satisfied? N/A** **Manually Set To:**

Criterion A: Four Hour

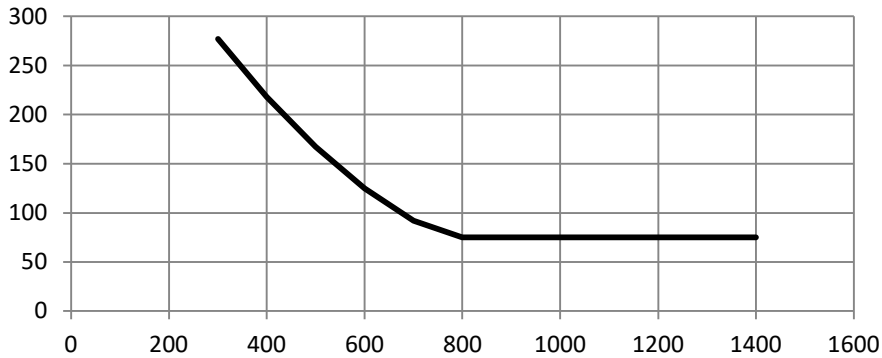
Hour (Start)	Pedestrian Volume	Major Road Vol.
		0
		0
		0
		0

Manually Set Major Rd Vol?

Avg. walk speed less than 3.5 ft/s?

Criterion A Satisfied?

Figure 4C-6 Warrant 4, Pedestrian Four-Hour Volume (70% Factor)

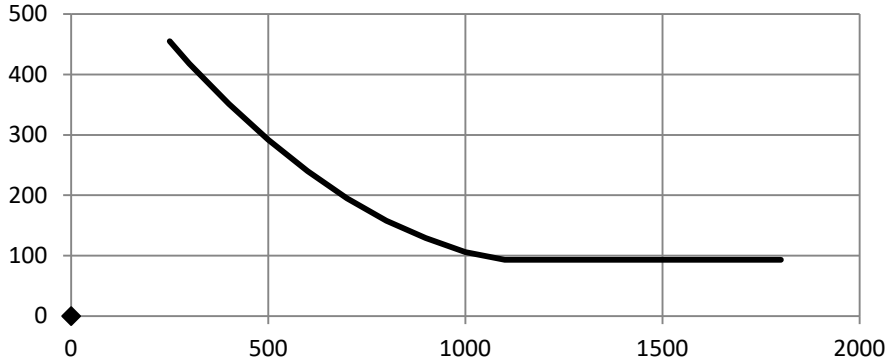


Criterion B: Peak Hour

Peak Hour	Pedestrian Vol.	Major Road Vol.
0:00	0	0

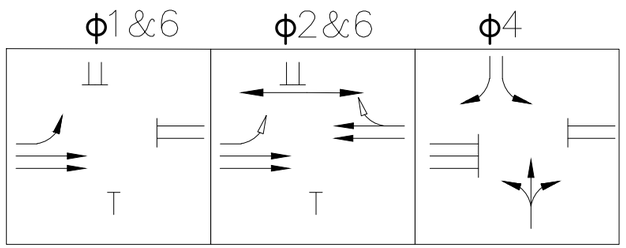
Criterion B Satisfied?

Figure 4C-8 Warrant 4, Pedestrian Peak Hour (70% Factor)



0 20' 40'
Scale: 1" = 20'

PHASING DIAGRAM

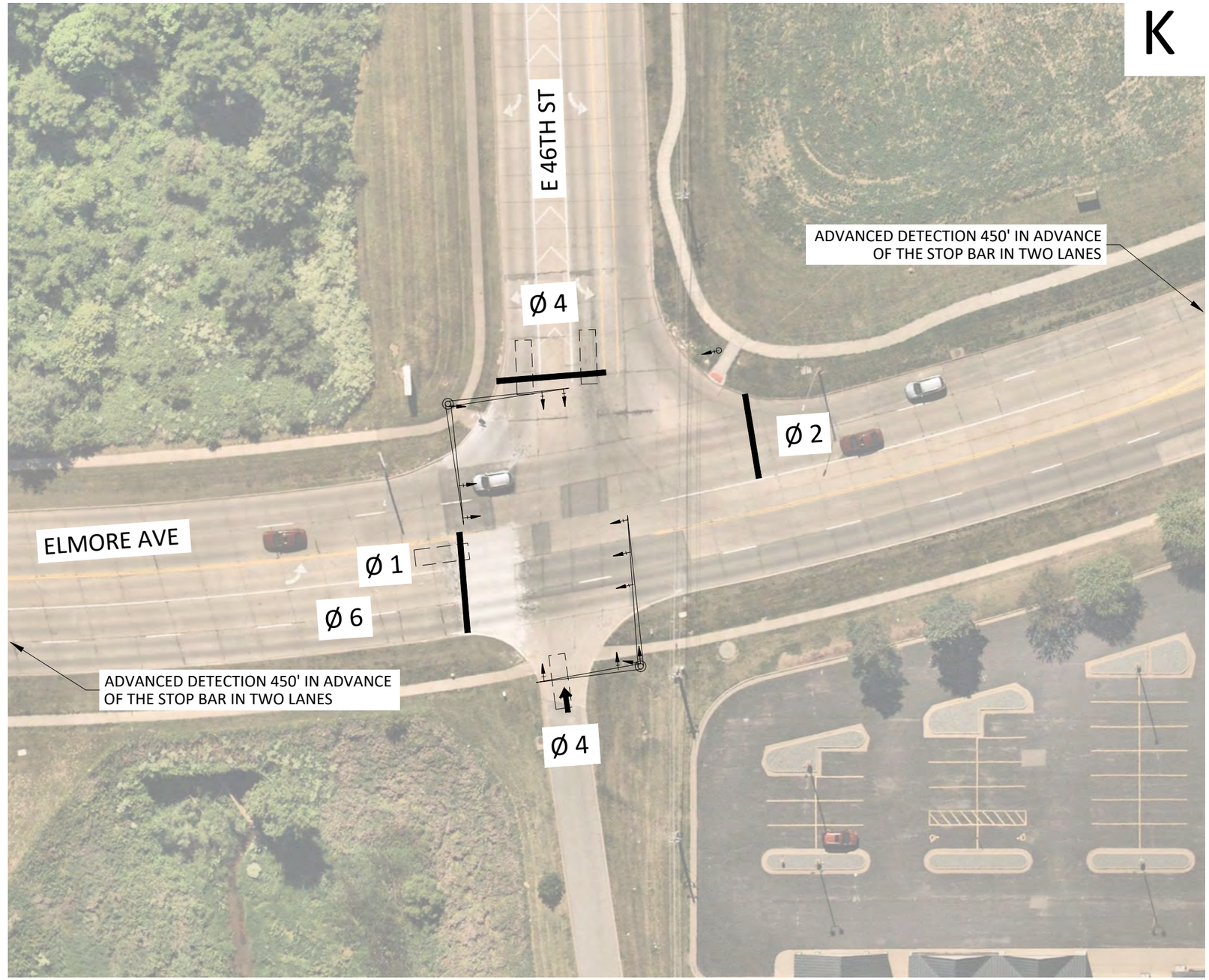


PROTECTIVE MOVEMENT

PERMISSIVE MOVEMENT

WALK

VIDEO VEHICULAR DETECTION ZONE



ELMORE AVENUE & E 46TH STREET TRAFFIC SIGNAL	City of Davenport, Iowa Engineering Division 1200 E. 46th Street (563) 326-7729 Davenport, Iowa 52807 Fax (563) 327-5182	PROJECT NUMBER: RISE PROJECT NO. RMX-XXXX(XXX)--9E-82 CIP NUMBER: XXXXX REVISION: DWG.FILE :Aerial.dwg	PLOT DATE: 8/14/2024 PLOT SCALE: 0.476841 DESIGNED BY: XXX DRAWN BY: XXX CHECKED BY: XXX	TSIP APPLICATION TRAFFIC SIGNAL LAYOUT	SHEET NO. K.1 TOTAL SHEET NO. 1

L

County:	Scott	Prepared By:	J Vondera
Location:	Elmore Ave & E 46th St	Date Prepared:	8/6/2024
Proposed Improvements:	Traffic signal installation		
Estimated Improvement Cost:	$ 300,000		
Inflation on Crash Costs:	4%	Annual Maintenance:	2%
Discount Rate:	4%	(% of Improvement Cost)	
Estimated Service Life:	15	Annual Maintenance Cost:	$ 6,000

Method Choice: CRF Method

The Crash Reduction Factor (CRF) Method applies one to three CRFs to historical crashes to estimate reductions in future crashes. Crash Modification Factors (CMFs) can be converted to CRFs. For additional information, click the "Learn More" button.

Crash Reduction Factor (CRF) Method

Traffic Growth Factor:	1%
Number of CRFs:	1
Years of Crash History:	5

Combined CRF (Dominant Common Residuals Method)

Iowa DOT's preferred methodology for combining CRFs is Dominant Common Residuals, since it is more conservative than the other options.

	CRF 1:	Combined CRF
CRF Value (%)	67	**67.0**

Crash Severity	Rounded Societal Costs	Crash History (Total):	CRF (from above)	Crash History - Annual Avg	Crashes Saved Annually
Fatal (K)	$ 4,200,000	0	67.0	**0.00**	**0.00**
Serious Injury (A)	$ 4,200,000	0	67.0	**0.00**	**0.00**
Minor Injury (B)	$ 280,000	0	67.0	**0.00**	**0.00**
Possible/Unknown Injury (C)	$ 130,000	5	67.0	**1.00**	**0.67**
Property Damage Only (O)	$ 20,000	7	67.0	**1.40**	**0.94**

Crash Severity	Annual Societal Benefit
Fatal (K)	**$ -**
Serious Injury (A)	**$ -**
Minor Injury (B)	**$ -**
Possible/Unknown Injury (C)	**$ 87,100**
Property Damage Only (O)	**$ 18,760**

Total Benefits and Costs

		Implementation Cost	$ 300,000
		Present Value of Maint.	$ 66,710
Present Value Benefits (Societal Benefits)	$ 1,253,930	Present Value Costs (Impl. and Maint. Costs)	$ 366,710
Present Value Net Return	$ 887,220		
Benefit Cost Ratio	**3.42**		

Form continues on next page

L

County:	Scott	Prepared By:	J Vondera
Location:	Elmore Ave & E 46th St	Date Prepared:	8/6/2024

No Input Necessary - No Custom Values In Use

General Customizations

No change to Crash Costs

No change to Discount Rate

No change to Maintenance Costs

Method-Specific Customizations

No change to Traffic Growth Rate

No change to Crash History

Rev. 07/23

A

Application for SITE-SPECIFIC TSIP FUNDS

GENERAL INFORMATION **DATE:** 8/15/2024

Location / Title of Project Kimberly Road at 36th Street Intersection Improvement

Applicant Contact Person City of Davenport

Gary Statz, P.E. Title Traffic Engineer

Complete Mailing Address 1200 E 46th St Davenport, IA 52807

Phone (563) 326-7754 (Area Code) E-Mail gary.statz@davenportiowa.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	$	150,000
Total Project Cost	$	150,000
Safety Funds Requested	**$**	**150,000**

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
2017135651	US 6 and E 36th St	☒	☐	1.61	
		☐	☐		

Rev. 07/23

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 City of Davenport, Iowa

Signed: _____ 8/14/2024
Signature Date Signed

Mike Matson, Mayor
Printed Name

Attest: Brian Krup 8/14/2024
Signature Date Signed

Brian Krup, Deputy City Clerk
Printed Name

Action item # 2024-336

A

Resolution No. 2024-336

Resolution offered by Alderman R. Dunn.

RESOLVED by the City Council of the City of Davenport, Iowa.

RESOLUTION authorizing submission of a grant application to the Iowa Department of Transportation's Traffic Safety Improvement Program for financial assistance to improve the intersection of Kimberly Road and East 36th Street.

WHEREAS, the City of Davenport, Iowa believes it is necessary to improve the intersection of Kimberly Road and East 36th Street by changing the median and turn lanes to prohibit through traffic and left turns from East 36th Street and the private drive; and

WHEREAS, if awarded funding through the Traffic Safety Improvement Program, the City shall commit any additional funds necessary to complete this project.

NOW, THEREFORE, BE IT RESOLVED by the City Council of the City of Davenport, Iowa that staff is hereby authorized to prepare and submit a grant application to the Iowa Department of Transportation's Traffic Safety Program for financial assistance to improve the intersection of Kimberly Road and East 36th Street.

Passed and approved this 14th day of August, 2024.

Approved:

Mike Matson
Mayor

Attest:

Brian Krup
Deputy City Clerk

NARRATIVE - Section B

The intersection of Kimberly Rd (US 6) and 36th Street is difficult to cross from north to south due to the many conflict points. With the median opening that is 60 feet wide, all turn movements are allowed and there is often congestion in the middle with drivers waiting to turn or go through at the same time. Our goal is to change this intersection to a right-in, right-out, left-in access by using a directional median which will prohibit both left turns onto Kimberly and north-south through movements. We would also remove the yield signs from the medians that face north and south.

EXISTING CONDITIONS

The intersection of Kimberly Road and 36th Street is a T-intersection with a full business entrance on the north side located across the street from 36th Street. Kimberly has the right of way and the north-south directions have stop signs. Kimberly is a 4-lane road with turn lanes at the intersections. The speed limit is 45 mph and the traffic volume is 37,000 vehicles per day. The right of way is 100 feet wide. The pavement on 36th Street is 29 feet wide with plenty of right of way near the intersection due to the large amount of right of way for Kimberly Road. This roadway width will work much better with northbound being restricted to right turns only rather than providing room for two northbound and one southbound lane. There are no obstructions within the right of way at this intersection so there are no clear zone issues. The traffic volume on 36th Street is 5800 vehicles per day. Both the DOT and the City of Davenport agree that a traffic signal should not be installed here because of the downhill curve on Kimberly when heading west. The better solution is to restrict some of the movements to eliminate conflict points.

CRASH HISTORY

In the last five years, there have been 29 crashes. The most recent occurred on August 7th, 2024, involved a minor injury, and was not included in the Iowa Crash Analysis Tool Quick Report which is in Section I. A copy of the police report for that crash is also in Section I. The crash statistics are in the table below and in Section I.

	Fatal (K)	Serious Injury (A)	Minor Injury (B)	Possible / Unknown Injury (C)	Property Damage Only (O)	TOTAL
2019	0	0	0	0	2	2
2020	0	0	2	5	6	13
2021	0	0	1	0	2	3
2022	0	3	0	1	0	4
2023	0	0	1	2	2	5
2024	0	0	1	0	1	2
	0	3	5	8	13	29

NARRATIVE cont. – Section B

The CMF used is CMF ID:5453, Convert an Open Median to a Directional Median. It has a CMF Value of 23 for all crash types, but only fatal, serious injury, minor injury and possible injury severities. Therefore, none of the property damage only crashes were used in calculating the benefit cost ratio.

ITEMIZED BREAKDOWN OF ALL COSTS – Section C

Construction Cost Estimate
E Kimberly Road & E 36th Street

		UNIT PRICE	QTY	
Excavation	CY	$ 50.00	250	$ 12,500.00
Concrete Median	SY	$ 100.00	100	$ 10,000.00
PCC Pavement, 10" (patches)	SY	$ 130.00	650	$ 84,500.00
Pavement Removal	SY	$ 15.00	750	$ 11,250.00
Sign Panels	SF	$ 75.00	48	$ 3,600.00
Sign Posts	LF	$ 25.00	60	$ 1,500.00
Erosion Control	LS	$ 750.00	1	$ 750.00
Pavement Markings, 6" line	LF	$ 2.00	200	$ 400.00
Pavement Markings, arrows	EA	$ 250.00	2	$ 500.00
Temporary Traffic Control	LS	$ 6,000.00	1	$ 6,000.00
Construction Survey	LS	$ 4,000.00	1	$ 4,000.00
Concrete Washout	LS	$ 1,000.00	1	$ 1,000.00
Construction Contingency	LS	$ 14,000.00	1	$ 14,000.00
				$ 150,000.00

TIME SCHEDULE – Section D

This project will be added to the City of Davenport's FY 2026 Capital Improvements Program for work that begins on July 1, 2025. We expect to design this project during the summer of 2025 with a letting later in 2025. The construction would begin when the weather allows in 2026 with a scheduled completion date of June 27, 2026. We will be working closely with the DOT regarding permits to work in State right of way.

Section E – Map

Looking west

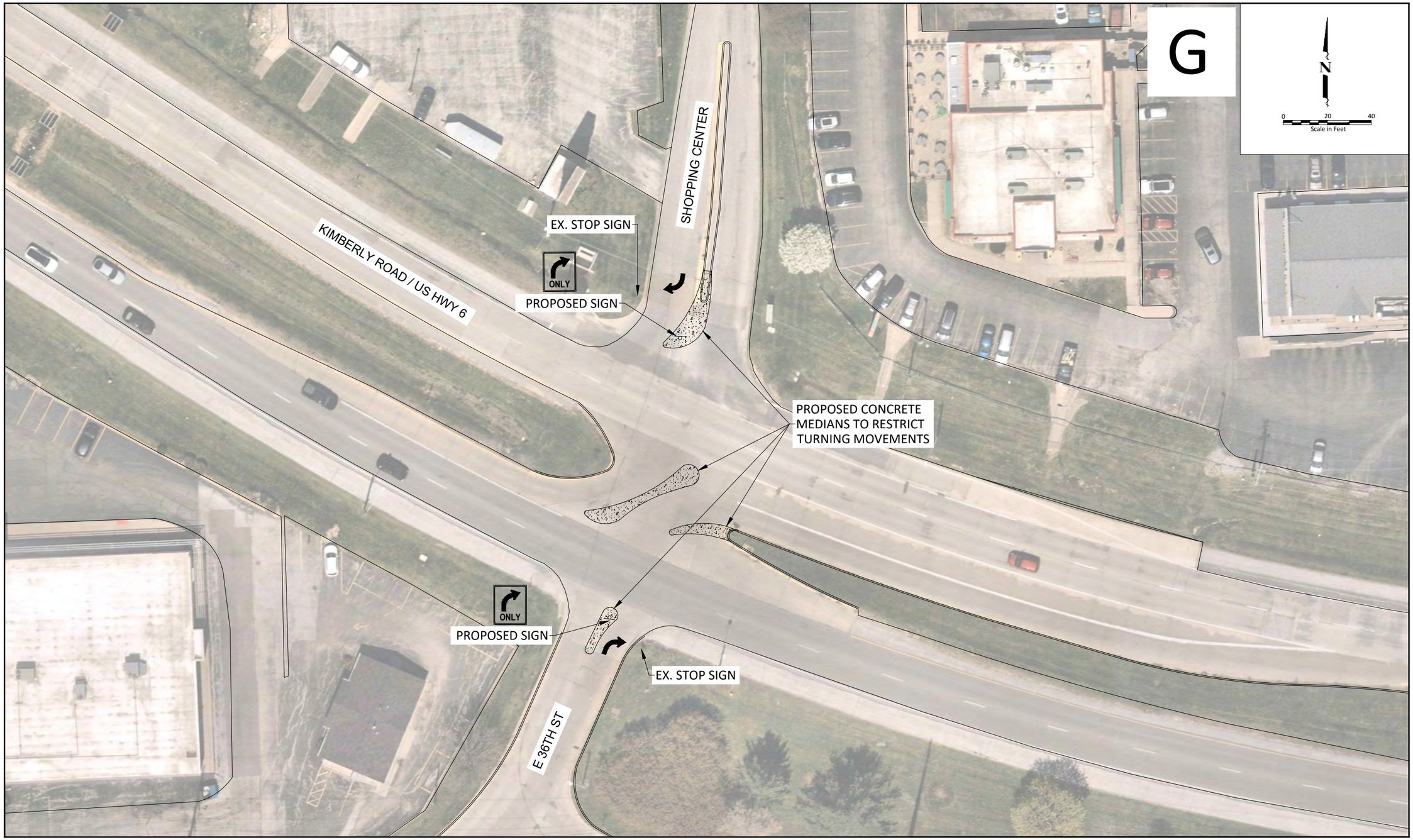
Project Location

Section F – Color Photos

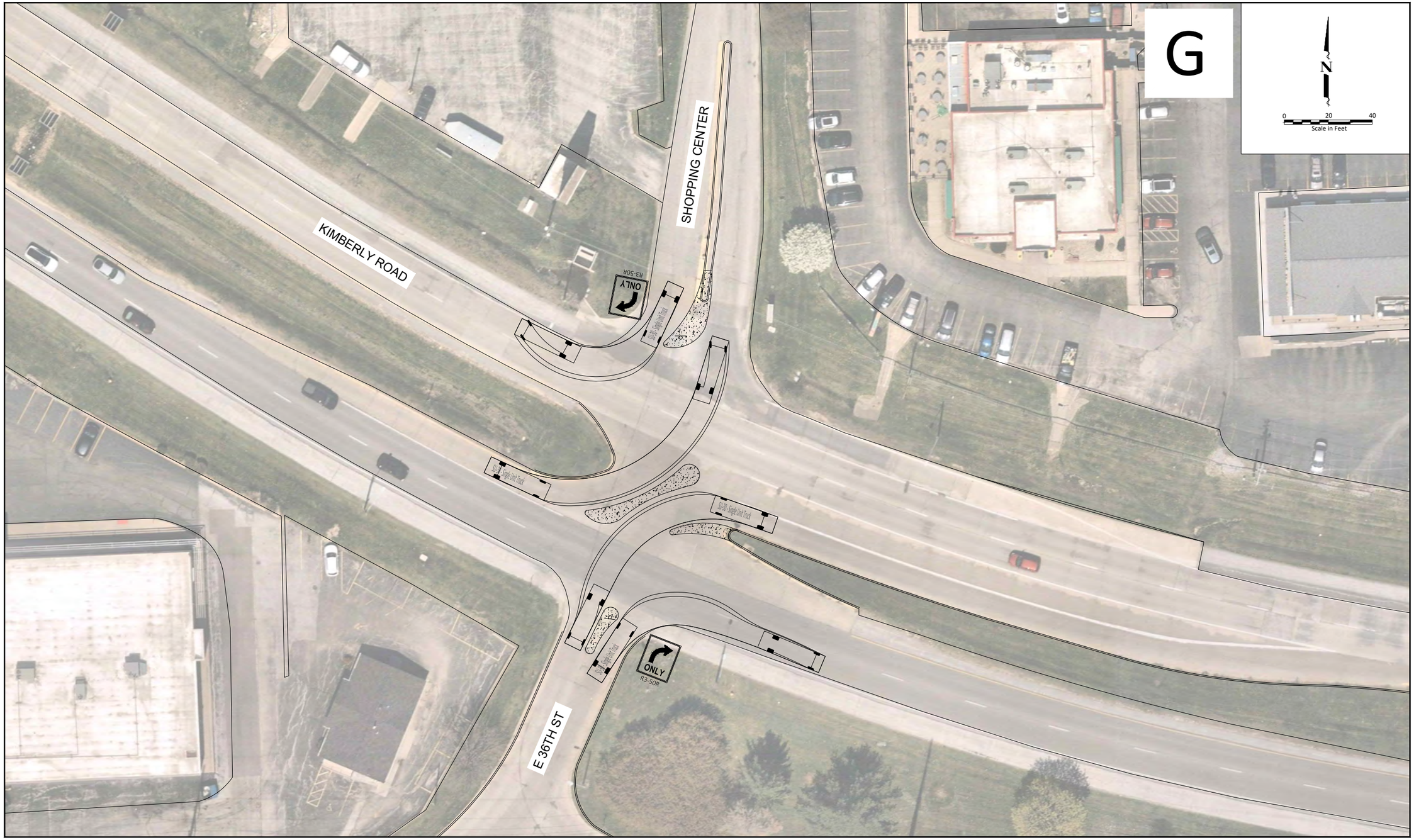
Looking north from E 36th Street

Looking east approaching the intersection

Looking south from the shopping center driveway.



KIMBERLY ROAD & E 36TH STREET TURN RESTRICTIONS	City of Davenport, Iowa Engineering Division 1200 E. 46th Street (563) 326-7729 Davenport, Iowa 52807 Fax (563) 327-5182	PROJECT NUMBER: PRJ-4135 CIP NUMBER: 35062 REVISION: DWG.FILE : C.01.dwg	PLOT DATE: 8/15/2024 PLOT SCALE: 0.460612 DESIGNED BY: JMV DRAWN BY: JMV CHECKED BY: ---	TSIP APPLICATION PLAN VIEW	SHEET NO. G.1 TOTAL SHEETS 2



KIMBERLY ROAD & E 36TH STREET TURN RESTRICTIONS	City of Davenport, Iowa Engineering Division 1200 E. 46th Street (563) 326-7729 Davenport, Iowa 52807 Fax (563) 327-5182	PROJECT NUMBER: PRJ-4135 CIP NUMBER: 35062 REVISION: DWG.FILE : C.01.dwg	PLOT DATE: 8/15/2024 PLOT SCALE: 0.460612 DESIGNED BY: JMV DRAWN BY: JMV CHECKED BY: ---	TSIP APPLICATION TURNING TEMPLATE FOR SU-30	SHEET NO. G.2 TOTAL SHEETS 2

KIMBERLY ROAD & E 36TH STREET TURN RESTRICTIONS	City of Davenport, Iowa Engineering Division 1200 E. 46th Street (563) 326-7729 Davenport, Iowa 52807 Fax (563) 327-5182	PROJECT NUMBER: PRJ-4135 CIP NUMBER: 35062 REVISION: DWG.FILE : C.02.dwg	PLOT DATE: 8/15/2024 PLOT SCALE: 0.460612 DESIGNED BY: JMV DRAWN BY: JMV CHECKED BY: ---	TSIP APPLICATION AERIAL PHOTOGRAPH	SHEET NO. H.1 TOTAL SHEETS 1

Iowa Crash Analysis Tool
Quick Report
2020-2024

Crash Severity	26
Fatal Crash	0
Suspected Serious Injury Crash	3
Suspected Minor Injury Crash	4
Possible/Unknown Injury Crash	8
Property Damage Only	11

Injury Status Summary	23
Fatalities	0
Suspected serious/incapacitating	3
Suspected minor/non-incapacitating	7
Possible (complaint of pain/injury)	9
Uninjured	0
Unknown	2
Not Reported	2

Property/Vehicles/Occupants	
Property Damage Total (dollars):	218,751.00
Average (per crash dollars):	8,413.50
Total Vehicles:	51.00
Average (per crash):	1.96
Total Occupants:	73.00
Average (per crash):	2.81

Average Severity	
Fatalities/Fatal Crash:	0.00
Fatalities/Crash:	0.00
Injuries/Crash:	0.73
Major Injuries/Crash:	0.12
Minor Injuries/Crash:	0.27
Possible/Unknown Injuries/Crash:	0.35

Major Cause			26
Animal	0	Ran traffic signal	0
Ran stop sign	0	Failed to yield to emergency vehicle	0
FTYROW: At uncontrolled intersection	0	FTYROW: Making right turn on red signal	0
FTYROW: From stop sign	5	FTYROW: From yield sign	6
FTYROW: Making left turn	2	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	0
Exceeded authorized speed	2	Improper or erratic lane changing	0
Operating vehicle in an reckless/erratic/care...	0	Followed too close	2
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...	2
Driver Distraction: Exterior distraction	0	Ran off road - right	0
Ran off road - straight	0	Ran off road - left	0
Lost control	2	Swerving/Evasive Action	1
Over correcting/over steering	0	Failed to keep in proper lane	1
Failure to signal intentions	0	Traveling on prohibited traffic way	0
Vehicle stopped on railroad tracks	0	Other: Vision obstructed	1
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	1	Not reported	0
Other: No improper action	1		

Iowa Crash Analysis Tool
Quick Report
2020-2024

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	1	0	0	0	1
Monday	0	0	1	0	0	1	0	1	1	0	0	0	0	4
Tuesday	0	0	0	0	0	1	1	0	1	0	0	0	0	3
Wednesday	1	0	0	0	0	0	0	1	0	1	0	2	0	5
Thursday	0	0	0	1	1	0	0	1	2	0	0	0	0	5
Friday	0	0	0	0	0	0	0	1	1	1	1	1	0	5
Saturday	0	0	0	0	0	0	0	1	0	1	1	0	0	3
Total	1	0	1	1	1	2	1	5	5	4	2	3	0	26

Manner of Crash Collision	**26**
Non-collision (single vehicle)	4
Head-on (front to front)	0
Rear-end (front to rear)	2
Angle (oncoming left turn)	0
Broadside (front to side)	14
Sideswipe (same direction)	4
Sideswipe (opposite direction)	1
Rear to rear	0
Rear to side	0
Not reported	0
Other	1
Unknown	0

Surface Conditions	**26**
Dry	20
Wet	5
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	0

Fixed Object Struck			**51**
Bridge overhead structure	0	Bridge pier or support	0
Bridge/bridge rail parapet	0	Curb/island/raised median	0
Ditch	1	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	1	Traffic sign support	1
Traffic signal support	0	Other post/pole/support	0
Fire hydrant	0	Mailbox	0
Tree	0	Landscape/shrubbery	0
Snow bank	1	Fence	0
Wall	0	Building	0
Other fixed object	0	None (no fixed object struck)	47

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	2	0	0	2
= 17	3	1	0	0	4
= 18	1	0	0	0	1
= 19	1	4	0	0	5
= 20	0	2	0	0	2
>= 21 and <= 24	1	5	0	0	6
>= 25 and <= 29	1	2	0	0	3
>= 30 and <= 34	2	2	0	0	4
>= 35 and <= 39	1	2	0	0	3
>= 40 and <= 44	1	1	0	0	2
>= 45 and <= 49	2	1	0	0	3
>= 50 and <= 54	1	3	0	0	4
>= 55 and <= 59	1	1	0	0	2
>= 60 and <= 64	1	0	0	0	1
>= 65 and <= 69	1	1	1	0	3
>= 70 and <= 74	0	1	0	0	1
>= 75 and <= 79	0	2	0	0	2
>= 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	3	0	3
Total	17	30	4	0	51

Drug/Alcohol Related	26
Drug	1
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	25

Alcohol Test Given	51
None	46
Blood	0
Urine	0
Breath	0
Vitreous	0
Refused	0
Not reported	5

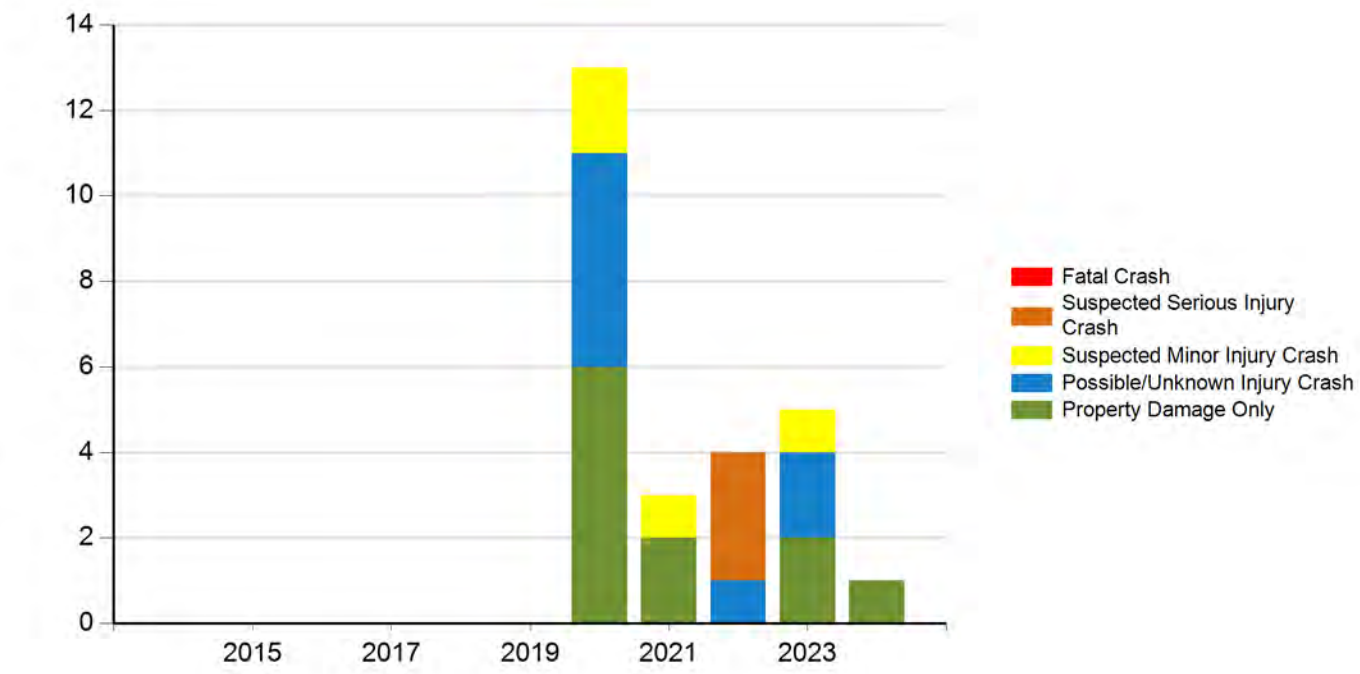
Drug Test Given	51
None	46
Blood	0
Urine	0
Breath	0
Vitreous	0
Refused	0
Not reported	5

Drug Test Result	51
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	51
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**
2014	0	0	0	0	0	0
2015	0	0	0	0	0	0
2016	0	0	0	0	0	0
2017	0	0	0	0	0	0
2018	0	0	0	0	0	0
2019	0	0	0	0	0	0
2020	0	0	2	5	6	13
2021	0	0	1	0	2	3
2022	0	3	0	1	0	4
2023	0	0	1	2	2	5
2024	0	0	0	0	1	1
Total	0	3	4	8	11	26

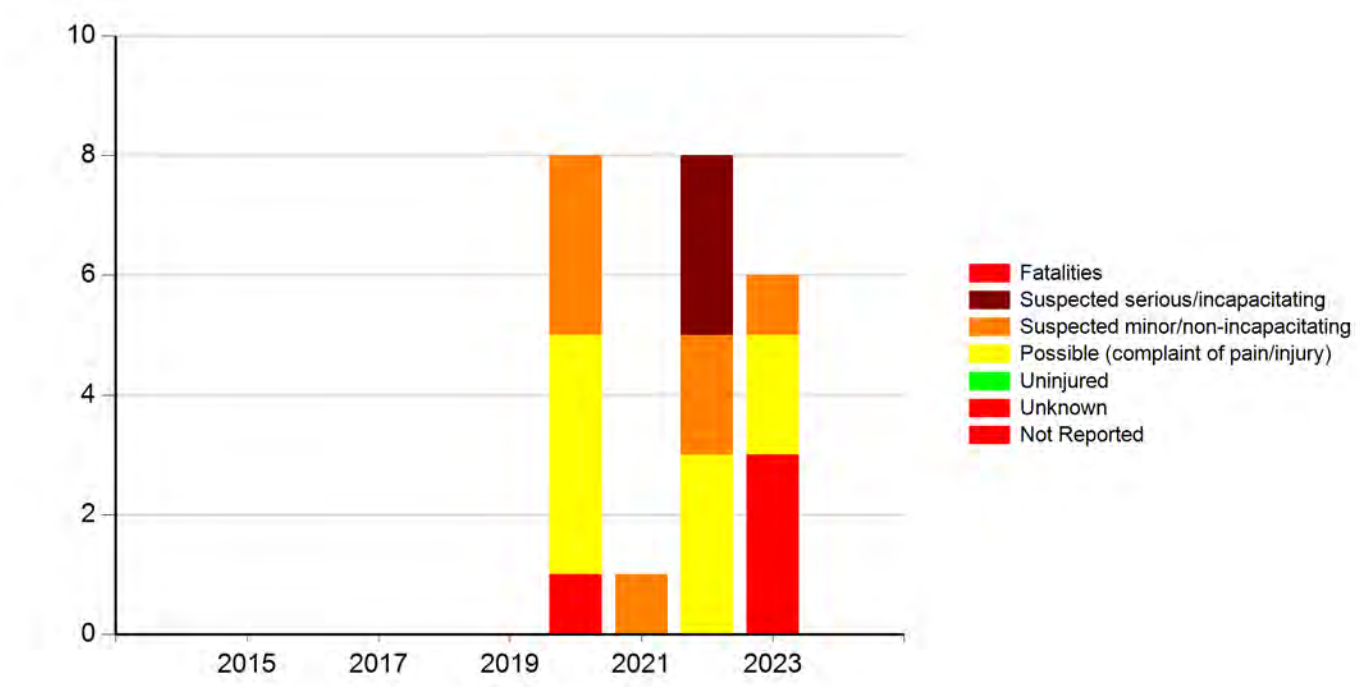
Severity/Year



Injury Status - Annual

Crash Year	Fatalities	Suspected serious/incapacitating	Suspected minor/non-incapacitating	Possible (complaint of pain/injury)	Uninjured	Unknown	Not Reported	**Total**
2014	0	0	0	0	0	0	0	0
2015	0	0	0	0	0	0	0	0
2016	0	0	0	0	0	0	0	0
2017	0	0	0	0	0	0	0	0
2018	0	0	0	0	0	0	0	0
2019	0	0	0	0	0	0	0	0
2020	0	0	3	4	0	1	0	8
2021	0	0	1	0	0	0	0	1
2022	0	3	2	3	0	0	0	8
2023	0	0	1	2	0	1	2	6
2024	0	0	0	0	0	0	0	0
Total	0	3	7	9	0	2	2	23

Injury Status/Year



Meeting the following criteria

Jurisdiction: Statewide
Year: 2020, 2021, 2022, 2023, 2024
Map Selection: Yes
Filter: None

Analyst Information

Form 4433003 (11-13)

INVESTIGATING OFFICER'S REPORT OF MOTOR VEHICLE ACCIDENT

MAIL REPORTS TO: Iowa Department of Transportation, Office of Driver Services, P.O. Box 9204, Des Moines, Iowa 50306-9204

Form Number: **2024-56757**

LOCATION

Date of Accident	Time of Accident	County	Accident occurred within corporate limits of (city)	Legal Intervention?	Private Property?
08/07/2024	**18:15** Hrs.	**SCOTT - 82**	**DAVENPORT - 1827**	☐	☐

Literal Description: **US 6 W**

County: **82** Route:

If accident occurred outside of city limits show general vicinity: N NE E SE S SW W NW ○ ○ ○ ○ ○ ○ ○ ○ of nearest city

X Coordinate: **703342.625**

On Road, Street or Highway:

At Intersection with:

Y Coordinate: **4603556.5**

Note: Unless accident occurred at an intersection which is completely described above, use the space below to give the exact location from a milepost or definable intersection, bridge, or railroad crossing, using two distances and directions if neccessary.

N NE E SE S SW W NW ○ ○ ○ ○ ○ ○ ○ ○ and N NE E SE S SW W NW ○ ○ ○ ○ ○ ○ ○ ○ of

If Divided Highway, Provide Route (Cardinal) Travel Direction: NB ○ SB ○ EB ○ WB ○

Milepost Number Or Definable intersection, bridge, or railroad crossing

ACCIDENT ENVIRONMENT				ROADWAY CHARACTERISTICS	
Location of First Harmful Event	**01**	Weather Conditions (up to two)		Major Contributing Circumstances Environment	**01**
Manner of Crash/Collision	**05**		**01**	Roadway	**01**
Light Conditions	**1**	Surface Conditions	**01**	Type of Roadway Junction/Feature	**05**
				FRA No.	

First Harmful Event (Crash)	WORKZONE RELATED?	Yes	No	Activity	Location	Type	Workers Present
33		○	●				

NON MOTORISTS

Name	Phone Number	DOB:	Sex	Struck by Unit No.	Injury Status	Non-Motorist Type	Location (prior to impact)	Action (prior to crash)	Condition	Safety Equipment	Contributing Circumstances	Source of Transport	Died at scene/enroute
Name **001**													
Name	Phone Number	DOB:											

Address:	Alcohol Test Given	Test Results:	Drug Test Given	Result	Charged Yes	No
					○	○

Transported to:	Transported by:

Address:	Alcohol Test Given	Test Results:	Drug Test Given	Result	Charged Yes	No
					○	○

Transported to:	Transported by:

NONVEHICULAR PROPERTY DMG

If Property other than vehicles damaged explain	Object Damaged	Estimate of Damage

Owner's Last Name	First Name	Middle Name	Phone Number

Address	City	State	Zip Code	Was owner or tenant notified? 1 = Yes 2 = No 9 = Unknown

If Property other than vehicles damaged explain	Object Damaged	Estimate of Damage

Owner's Last Name	First Name	Middle Name	Phone Number

Address	City	State	Zip Code	Was owner or tenant notified? 1 = Yes 2 = No 9 = Unknown

WITNESS

Last Name	First Name	Address	City	State	Zip Code	Phone Number

Is This a Secondary Crash?	Type of Primary Incident	Roadway Clearance Date	Incident Clearance Date
Y ○ N ●		**08/07/2024**	**08/07/2024**

Signature of Officer	Badge Number	Time Officer Notified of Accident	Roadway Clearance Time	Incident Clearance Time
OFC JAMIE BENNETT	**0929**	**18:21** Hrs.	**18:38** Hrs.	**18:38** Hrs.

Name of Agency	Date of Report	Time Officer Arrived At Scene	Total Roadway Clearance Time	Total Incident Clearance Time
DAVENPORT POLICE DEPARTMENT	**08/07/2024**	**18:24** Hrs.	**000:17**	**000:17**

Report Reviewed By	Date of Review	Investigation made at scene?	T.I. No.	Other Technical Investigating Agency
		Y ● N ○		

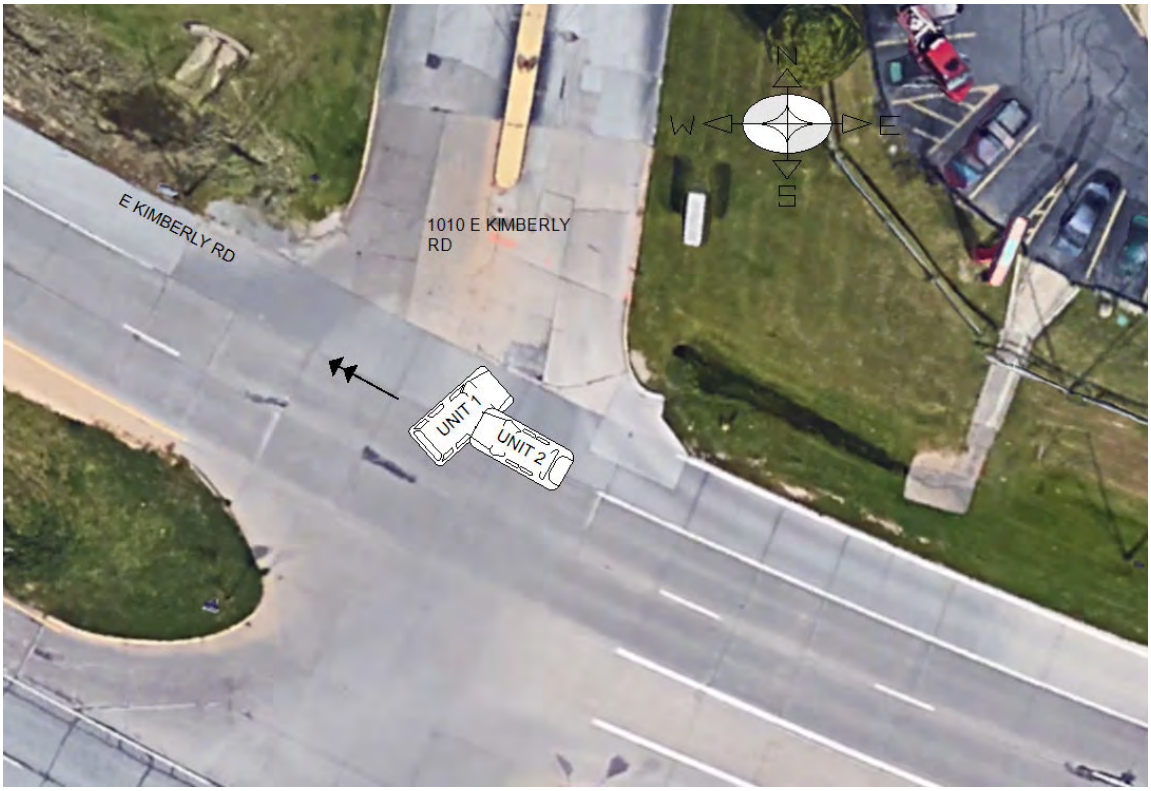
Form 4433003 (11-13)

INVESTIGATING OFFICER'S REPORT OF MOTOR VEHICLE ACCIDENT

MAIL REPORTS TO: Iowa Department of Transportation, Office of Driver Services, P.O. Box 9204, Des Moines, Iowa 50306-9204

Form Number: **2024-56757**

DIAGRAM



NARRATIVE

UNIT 1 WAS TRAVELING EAST ON E KIMBERLY RD NEAR 1010 E KIMBERLY RD. UNIT 2 WAS TRAVELING WEST ON E KIMBERLY RD NEAR 1010 E KIMBERLY RD. UNIT 1 ATTEMPTED TO TURN LEFT INTO THE PARKING LOT OF 1010 E KIMBERLY RD BUT FAILED TO YIELD TO ONCOMING TRAFFIC. UNIT 2 STRUCK UNIT 1. UNIT 1 SUFFERED MINOR INJURIES AND WAS TRANSPORTED TO TRINITY HOSPITAL.

J

Traffic Count - E Kimberly Road & E 36th Street

15 Minute (Cars + Trucks)	Southbound				Westbound				Northbound				Eastbound				Intersection
Time	Left	Through	Right	Total	Left	Through	Right	Total	Left	Through	Right	Total	Left	Through	Right	Total	Total 15 Min.
0:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6:00	0	0	3	3	2	67	0	69	0	0	8	8	3	76	0	79	159
6:15	0	0	2	2	2	96	0	98	1	2	11	14	5	109	0	114	228
6:30	0	0	3	3	1	122	0	123	2	1	19	22	2	145	1	148	296
6:45	0	1	2	3	2	135	0	137	4	0	16	20	6	134	2	142	302
7:00	0	0	4	4	1	140	0	141	1	2	23	26	5	146	3	154	325
7:15	1	0	6	7	2	192	1	195	2	3	18	23	12	183	1	196	421
7:30	0	0	5	5	6	206	0	212	1	4	24	29	8	226	2	236	482
7:45	1	0	4	5	8	246	0	254	2	5	29	36	12	207	3	222	517
8:00	0	0	1	1	4	180	0	184	1	1	22	24	7	186	2	195	404
8:15	0	0	4	4	9	204	1	214	1	4	17	22	9	207	2	218	458
8:30	2	0	6	8	7	179	1	187	1	4	26	31	7	246	4	257	483
8:45	0	0	5	5	10	191	2	203	2	6	29	37	10	205	2	217	462
9:00	0	2	5	7	7	173	2	182	1	2	28	31	6	174	2	182	402
9:15	1	0	1	2	7	172	0	179	1	4	18	23	6	223	0	229	433
9:30	0	1	3	4	10	216	3	229	1	3	18	22	5	195	1	201	456
9:45	0	2	3	5	9	230	2	241	1	3	32	36	11	224	0	235	517
10:00	3	1	9	13	9	231	3	243	1	1	24	26	10	235	5	250	532
10:15	1	1	4	6	13	254	7	274	0	1	21	22	7	222	1	230	532
10:30	1	0	9	10	12	263	7	282	1	1	22	24	11	244	2	257	573
10:45	2	0	9	11	12	269	9	290	1	7	25	33	10	233	4	247	581
11:00	0	1	9	10	12	271	4	287	2	4	22	28	17	219	1	237	562
11:15	0	1	8	9	8	290	3	301	0	5	29	34	18	222	2	242	586
11:30	6	0	6	12	11	257	2	270	2	2	40	44	10	267	6	283	609
11:45	1	1	16	18	11	326	5	342	1	1	45	47	14	249	5	268	675
12:00	0	2	19	21	12	268	6	286	3	2	39	44	13	240	7	260	611
12:15	3	2	8	13	9	284	3	296	2	2	36	40	15	289	1	305	654
12:30	2	2	11	15	14	284	7	305	1	5	26	32	13	283	4	300	652
12:45	6	0	11	17	10	278	13	301	1	2	32	35	16	243	4	263	616
13:00	4	1	18	23	16	317	6	339	4	5	29	38	6	258	0	264	664
13:15	2	0	7	9	11	279	2	292	0	1	36	37	13	218	2	233	571
13:30	1	0	5	6	8	248	3	259	2	2	24	28	8	245	2	255	548
13:45	4	1	6	11	9	260	5	274	2	5	24	31	9	261	3	273	589
14:00	2	1	11	14	9	238	5	252	0	4	21	25	12	246	5	263	554
14:15	3	0	10	13	9	272	6	287	2	3	22	27	4	259	6	269	596
14:30	0	0	13	13	8	283	4	295	0	4	31	35	11	254	4	269	612
14:45	0	3	8	11	7	285	3	295	5	4	30	39	13	297	2	312	657
15:00	4	1	7	12	12	298	6	316	1	4	41	46	21	270	5	296	670
15:15	2	0	12	14	15	274	4	293	1	3	27	31	12	271	3	286	624
15:30	2	0	13	15	12	293	3	308	0	6	34	40	12	271	5	288	651
15:45	2	0	12	14	19	273	5	297	0	9	25	34	19	263	0	282	627
16:00	1	3	5	9	13	325	4	342	0	5	27	32	8	300	3	311	694
16:15	0	1	9	10	11	307	2	320	1	9	24	34	9	258	1	268	632
16:30	1	4	11	16	12	327	2	341	0	2	31	33	21	225	3	249	639
16:45	1	1	9	11	10	301	6	317	2	2	27	31	9	210	1	220	579
17:00	2	1	19	22	9	304	6	319	1	4	27	32	7	262	4	273	646
17:15	3	0	14	17	21	304	8	333	2	8	23	33	7	262	1	270	653
17:30	0	2	16	18	11	276	4	291	2	1	31	34	21	212	1	234	577
17:45	0	1	8	9	19	281	4	304	2	2	27	31	9	215	1	225	569
18:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
18:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
18:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
18:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
19:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
19:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
19:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
19:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
20:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
20:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
20:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
20:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
21:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
21:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
21:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
21:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
22:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
22:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
22:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
22:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
23:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
23:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
23:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
23:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

J

Hourly Traffic Counts - E Kimberly Road & E 36th Street

Hourly (Cars + Trucks)	Southbound				Westbound				Northbound				Eastbound				Intersection	
Time	Left	Through	Right	Total	Left	Through	Right	Total	Left	Through	Right	Total	Left	Through	Right	Total	Total 1 Hour	
0:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
0:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
0:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
0:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
1:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
1:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
1:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
1:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
2:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
2:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
2:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
2:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
3:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
3:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
3:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
3:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
4:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
4:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
4:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
4:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
5:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
5:15	0	0	3	3	2	67	0	69	0	0	8	8	3	76	0	79	159	
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5:45	0	0	8	8	5	285	0	290	3	3	38	44	10	330	1	341	683	
6:00	0	1	10	11	7	420	0	427	7	3	54	64	16	464	3	483	985	
6:15	0	1	11	12	6	493	0	499	8	5	69	82	18	534	6	558	1151	
6:30	1	1	15	17	6	589	1	596	9	6	76	91	25	608	7	640	1344	
6:45	1	1	17	19	11	673	1	685	8	9	81	98	31	689	8	728	1530	
7:00	2	0	19	21	17	784	1	802	6	14	94	114	37	762	9	808	1745	
7:15	2	0	16	18	20	824	1	845	6	13	93	112	39	802	8	849	1824	
7:30	1	0	14	15	27	836	1	864	5	14	92	111	36	826	9	871	1861	
7:45	3	0	15	18	28	809	2	839	5	14	94	113	35	846	11	892	1862	
8:00	2	0	16	18	30	754	4	788	5	15	94	114	33	844	10	887	1807	
8:15	2	2	20	24	33	747	6	786	5	16	100	121	32	832	10	874	1805	
8:30	3	2	17	22	31	715	5	751	5	16	101	122	29	848	8	885	1780	
8:45	1	3	14	18	34	752	7	793	5	15	93	113	27	797	5	829	1753	
9:00	1	5	12	18	33	791	7	831	4	12	96	112	28	816	3	847	1808	
9:15	4	4	16	24	35	849	8	892	4	11	92	107	32	877	6	915	1938	
9:30	4	5	19	28	41	931	15	987	3	8	95	106	33	876	7	916	2037	
9:45	5	4	25	34	43	978	19	1040	3	6	99	108	39	925	8	972	2154	
10:00	7	2	31	40	46	1017	26	1089	3	10	92	105	38	934	12	984	2218	
10:15	4	2	31	37	49	1057	27	1133	4	13	90	107	45	918	8	971	2248	
10:30	3	2	35	40	44	1093	23	1160	4	17	98	119	56	918	9	983	2302	
10:45	8	2	32	42	43	1087	18	1148	5	18	116	139	55	941	13	1009	2338	
11:00	7	3	39	49	42	1144	14	1200	5	12	136	153	59	957	14	1030	2432	
11:15	7	4	49	60	42	1141	16	1199	6	10	153	169	55	978	20	1053	2481	
11:30	10	5	49	64	43	1135	16	1194	8	7	160	175	52	1045	19	1116	2549	
11:45	6	7	54	67	46	1162	21	1229	7	10	146	163	55	1061	17	1133	2592	
12:00	11	6	49	66	45	1114	29	1188	7	11	133	151	57	1055	16	1128	2533	
12:15	15	5	48	68	49	1163	29	1241	8	14	123	145	50	1073	9	1132	2586	
12:30	14	3	47	64	51	1158	28	1237	6	13	123	142	48	1002	10	1060	2503	
12:45	13	1	41	55	45	1122	24	1191	7	10	121	138	43	964	8	1015	2399	
13:00	11	2	36	49	44	1104	16	1164	8	13	113	134	36	982	7	1025	2372	
13:15	9	2	29	40	37	1025	15	1077	4	12	105	121	42	970	12	1024	2262	
13:30	10	2	32	44	35	1018	19	1072	6	14	91	111	33	1011	16	1060	2287	
13:45	9	2	40	51	35	1053	20	1108	4	16	98	118	36	1020	18	1074	2351	
14:00	5	4	42	51	33	1078	18	1129	7	15	104	126	40	1056	17	1113	2419	
14:15	7	4	38	49	36	1138	19	1193	8	15	124	147	49	1080	17	1146	2535	
14:30	6	4	40	50	42	1140	17	1199	7	15	129	151	57	1092	14	1163	2563	
14:45	8	4	40	52	46	1150	16	1212	7	17	132	156	58	1109	15	1182	2602	
15:00	10	1	44	55	58	1138	18	1214	2	22	127	151	64	1075	13	1152	2572	
15:15	7	3	42	52	59	1165	16	1240	1	23	113	137	51	1105	11	1167	2596	
15:30	5	4	39	48	55	1198	14	1267	1	29	110	140	48	1092	9	1149	2604	PEAK
15:45	4	8	37	49	55	1232	13	1300	1	25	107	133	57	1046	7	1110	2592	
16:00	3	9	34	46	46	1260	14	1320	3	18	109	130	47	993	8	1048	2544	
16:15	4	7	48	59	42	1239	16	1297	4	17	109	130	46	955	9	1010	2496	
16:30	7	6	53	66	52	1236	22	1310	5	16	108	129	44	959	9	1012	2517	
16:45	6	4	58	68	51	1185	24	1260	7	15	108	130	44	946	7	997	2455	
17:00	5	4	57	66	60	1165	22	1247	7	15	108	130	44	951	7	1002	2445	
17:15	3	3	38	44	51	861	16	928	6	11	81	98	37	689	3	729	1799	
17:30	0	3	24	27	30	557	8	595	4	3	58	65	30	427	2	459	1146	
17:45	0	1	8	9	19	281	4	304	2	2	27	31	9	215	1	225	569	
18:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
18:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
18:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
18:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
19:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
19:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
19:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
19:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
20:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
20:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
20:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
20:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
21:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
21:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
21:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
21:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
22:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
22:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
22:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
22:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
23:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
23:15																		2604
23:30																		
23:45																		

L

County:	Scott	Prepared By:	Jeri Vondera
Location:	Kimberly Road (Hwy 6) & E 36th St	Date Prepared:	8/9/2024
Proposed Improvements:	Convert open median to a directional median		
Estimated Improvement Cost:	$ 150,000		
Inflation on Crash Costs:	4%	Annual Maintenance: (% of Improvement Cost)	2%
Discount Rate:	4%		
Estimated Service Life:	15	Annual Maintenance Cost:	$ 3,000
Method Choice:	CRF Method		

The Crash Reduction Factor (CRF) Method applies one to three CRFs to historical crashes to estimate reductions in future crashes. Crash Modification Factors (CMFs) can be converted to CRFs. For additional information, click the "Learn More" button.

Crash Reduction Factor (CRF) Method

Traffic Growth Factor:	1%
Number of CRFs:	1
Years of Crash History:	5

Combined CRF (Dominant Common Residuals Method)

Iowa DOT's preferred methodology for combining CRFs is Dominant Common Residuals, since it is more conservative than the other options.

	CRF 1:	Combined CRF
CRF Value (%)	23	**23.0**

Crash Severity	Rounded Societal Costs	Crash History (Total):	CRF (from above)	Crash History - Annual Avg	Crashes Saved Annually
Fatal (K)	$ 4,200,000		23.0	**0.00**	**0.00**
Serious Injury (A)	$ 4,200,000	3	23.0	**0.60**	**0.14**
Minor Injury (B)	$ 280,000	5	23.0	**1.00**	**0.23**
Possible/Unknown Injury (C)	$ 130,000	8	23.0	**1.60**	**0.37**
Property Damage Only (O)	$ 20,000		23.0	**0.00**	**0.00**

Crash Severity	Annual Societal Benefit
Fatal (K)	**$ -**
Serious Injury (A)	**$ 579,600**
Minor Injury (B)	**$ 64,400**
Possible/Unknown Injury (C)	**$ 47,840**
Property Damage Only (O)	**$ -**

Total Benefits and Costs

		Implementation Cost	$ 150,000
		Present Value of Maint.	$ 33,355
Present Value Benefits (Societal Benefits)	$ 8,194,964	Present Value Costs (Impl. and Maint. Costs)	$ 183,355
Present Value Net Return	$ 8,011,608		
Benefit Cost Ratio	**44.69**		

Form continues on next page

L

County: Scott

Location: Kimberly Road (Hwy 6) & E 36th St

Prepared By: Jeri Vondera

Date Prepared: 8/9/2024

No Input Necessary - No Custom Values In Use

General Customizations

No change to Crash Costs

No change to Discount Rate

No change to Maintenance Costs

Method-Specific Customizations

No change to Traffic Growth Rate

No change to Crash History

CMF / CRF Details

CMF ID: 5453

CMF Name: Convert an open median to a directional median

Description: Convert a full median opening to a directional median opening

Prior Condition: Roadway with full median openings

Category: Access management

Study ID: *Safety Effects of Median Treatments Using Longitudinal Channelizers: Empirical Bayesian Before-and-After Study*, Zhou et al. 2013

Star Quality Rating	
Star Quality Rating:	4 Stars

Crash Modification Factor (CMF)	
Value:	0.77
Adjusted Standard Error:	
Unadjusted Standard Error:	0.0632

Crash Reduction Factor	
Value:	23
Adjusted Standard Error:	
Unadjusted Standard Error:	6.32

Applicability	
Crash Type:	All
Crash Severity:	K (fatal),A (serious injury),B (minor injury),C (possible injury)
Roadway Types:	Principal Arterial Other
Minimum Number of Lanes:	4
Maximum Number of Lanes:	6
Number of Lanes Direction:	
Number of Lanes Comment:	
Road Division Type:	Divided by Median
Minimum Speed Limit:	40
Maximum Speed Limit:	55
Speed Unit:	mph
Speed Limit Comment:	
Area Type:	Urban and suburban
Traffic Volume:	Minimum of 27000 to Maximum of 96000 Annual Average Daily Traffic (AADT)
Average Traffic Volume:	
Time of Day:	Not specified
If countermeasure is intersection-based.	
Intersection Type:	
Intersection Geometry:	
Traffic Control:	
Major Road Traffic Volume:	
Minor Road Traffic Volume:	

Average Major Road Volume:	
Average Minor Road Volume:	

Development Details

Date Range of Data Used:	2003 to 2010
Municipality:	Tampa
State:	FL
Country:	
Type of Methodology Used:	Before/after using empirical Bayes or full Bayes
Sample Size (crashes):	121 crashes after

Other Details

Included in HSM:	No
Date Added to Clearinghouse:	Apr 30, 2014
Comments:	CMF for KAB crashes (based on the KABCO scale). The SPF only included VMT. It was not clear if annual calibration factors or other methods were used to account for trends.

This site is funded by the U.S. Department of Transportation Federal Highway Administration and maintained by the University of North Carolina Highway Safety Research Center

The information contained in the Crash Modification Factors (CMF) Clearinghouse is disseminated under the sponsorship of the U.S. Department of Transportation in the interest of information exchange. The U.S. Government assumes no liability for the use of the information contained in the CMF Clearinghouse. The information contained in the CMF Clearinghouse does not constitute a standard, specification, or regulation, nor is it a substitute for sound engineering judgment.

Application for FY2026 Traffic Safety Improvement Program (TSIP) Funding
Iowa Department of Transportation

(Site Specific)

19th Street

Corridor Improvements

Des Moines Engineering Department
Traffic and Transportation Division
Steve Naber, P.E.
City Engineer

August 15, 2024

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Rev. 07/23

Application for SITE-SPECIFIC TSIP FUNDS

GENERAL INFORMATION **DATE:** August 9, 2024

Location / Title of Project 19th Street Corridor Improvements

Applicant City of Des Moines

Contact Person Calvin Miller Title Engineering Administrative Manager

Complete Mailing Address 400 Robert D. Ray Drive
Des Moines, IA 50309-1891

Phone 515-283-4748 (Area Code) E-Mail cbmiller@dmgov.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 _____ E-Mail _____

PLEASE COMPLETE THE FOLLOWING PROJECT INFORMATION:

Funding Amount

Total Safety Cost	$	625,000
Total Project Cost	$	2,100,000
Safety Funds Requested	**$**	**500,000**

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)	Intersection or Segment	PCR Level High	PCR Level Med	PCR-All value	PCR-Severe value
2017066568	19th St & Day St (I-235 WB Off-Ramp)	☒	☐	11.16	1.78
2017130886	19th St & Atkins St	☐	☒	0.46	-0.02
2017066618	19th St & University Ave	☒	☐	6.14	0.67
201706665	19th St & Keo Way/Carpenter Ave	☐	☒	0.63	0.04
2017066672	19th St & Forest Ave	☒	☐	2.64	0.29
2017130887	19th St & Clark St	☒	☐	1.14	0.14
2017066702	19th St & College Ave	☒	☐	1.82	0.23

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 Des Moines, Iowa

Signed: Connie Bosen 8/5/24

Signature Date Signed

Connie Bosen, Mayor

Printed Name

Attest: Laura Baumgartner 8-5-24

Signature Date Signed

Laura Baumgartner, City Clerk

Printed Name

★ **Roll Call Number**
24-1046

Agenda Item Number
6

Date August 5, 2024

APPROVING THE FISCAL YEAR 2026 TRAFFIC SAFETY IMPROVEMENT PROGRAM (TSIP) APPLICATION TO THE IOWA DEPARTMENT OF TRANSPORTATION (IOWA DOT) FOR THE 19TH STREET IMPROVEMENT PROJECT.

BE IT RESOLVED BY THE CITY COUNCIL OF THE CITY OF DES MOINES, IOWA:

1. That the Fiscal Year 2026 Traffic Safety Improvement Program (TSIP) application for the 19th Street Improvement Project is approved and the Mayor is hereby authorized and directed to execute the application and the City Clerk to attest to the Mayor's signature.

2. The City Manager is authorized to submit applications to the Iowa DOT for TSIP Funds to cover a portion of the construction and property acquisition costs for 19th Street Improvement Project.

3. The City understands if the application is approved it will be responsible for any additional funds, if required, to complete the project and the City of Des Moines will provide adequate resources to maintain the improvements for their useful life.

(Council Letter Number 24-311 attached)
Activity ID 06-2023-014

Moved by Coleman to adopt. Second by Simonson

FORM APPROVED: s/Kathleen Vanderpool
Kathleen Vanderpool
Deputy City Attorney

SLN pw Funding Source: 2024-2025 CIP, Page 125, 19th Street and MLK Modifications, ST311, G.O. Bonds

COUNCIL ACTION	YEAS	NAYS	PASS	ABSENT
BOESEN	✓			
COLEMAN	✓			
GATTO				✓
MANDELBAUM	✓			
SIMONSON	✓			
VOSS	✓			
WESTERGAARD	✓			
TOTAL	6			1

MOTION CARRIED APPROVED

Connie Boesen Mayor

CERTIFICATE

I, LAURA BAUMGARTNER, City Clerk of said City hereby certify that at a meeting of the City Council of said City of Des Moines, held on the above date, among other proceedings the above was adopted.

IN WITNESS WHEREOF, I have hereunto set my hand and affixed my seal the day and year first above written.

Laura Baumgartner City Clerk

Project Description

This project includes a lane reduction from a 3-lane, one-way street with narrow sidewalks to a 2-lane, one-way street with a separated 10-foot shared use path. The shared use path will include a connection via the existing bridge over Interstate 235, which is a significant barrier between the Drake and Good Park Neighborhoods to the north and the downtown core. The goal of this project is to right-size the street cross-section for the traffic volume, slow vehicle speeds, improve pedestrian and bicycle mobility, and improve safety outcomes for all street users. This project will also include street resurfacing from Atkins Street to Washington Avenue, retroreflective backplates, a speed limit reduction from 30 mph to 25 mph, and realignment of the skewed intersection at Keosauqua Way/Carpenter Avenue.

The total project cost of the 19th Street Corridor Improvements project is estimated to be approximately $2,100,000. The portion of the project with direct safety benefits is estimated to be approximately $625,000. A total of $500,000 is being requested from the State Traffic Safety Improvement Program (TSIP) funds.

Existing Conditions

19th Street is the northbound portion of a one-way pair from Cottage Grove Avenue to Washington Avenue. The southbound portion of the one-way pair is Martin Luther King Jr. Parkway, one block to the west. Both 19th Street and Martin Luther King Jr. Parkway are arterial streets. The one-way pair extends for approximately a mile north-south just to the west of the downtown core. 19th Street's existing cross-section varies along the corridor. Below is a table summarizing the average daily traffic and existing/proposed cross-sections for each segment of the corridor.

Table B-1. ADT by Corridor Segment

19th Street Segment	Average Daily Traffic (2016)	Segment Length (ft)	Existing Cross-Section	Proposed Cross-Section
Cottage Grove Ave to I-235	23,800	850	3-lanes with turn lanes	2-lanes with turn lanes & seperated shared use path
I-235 to Atkins St	9,000	450	3-lanes	2-lanes with shared use path
Atkins St to University Ave	9,100	1,000	2-lanes with parking	2-lanes with shared use path
University Ave to Forest Ave	8,600	1,300	3-lanes	2-lanes with shared use path
Forest Ave to Washington Ave	11,500	1,800	2-lanes	2-lanes

The existing speed limit for 19th Street is 30 mph. There are signalized intersections along the corridor at Cottage Grove Avenue, the I-235 on/off ramps, University Avenue, Keosauqua Way/Carpenter Avenue, Forest Avenue, and Clark Street. The adjacent land use is mostly residential; however, from University Avenue to Forest Avenue there are several businesses as well as Polk County Administrative buildings, and the Basilica of St. John.

Project Justification and Proposed Concept

According to the Iowa DOT's Potential for Crash Reduction (PCR) for the timeframe of 2016-2020, several intersections along this corridor have a high PCR. Specifically, the intersection of Day Street (WB I-235 off-ramp) has the highest PCR for injurious crashes of all intersections statewide and the third highest PCR for all crashes statewide. Below is a summary of all the intersections with a high or medium PCR along the corridor.

Table B-2. PCR by Corridor Segment

19th Street Intersection	All Crash PCR		Severe Crash PCR	
	Value	Rank*	Value	Rank*
Day Street (I-235 WB Off-Ramp)	11.16	3	1.78	1
Atkins Street	0.46	1,678	-0.02	112,607
University Avenue	6.14	17	0.67	23
Keo Way/Carpenter Avenue	0.63	1,257	0.04	1,292
Forest Avenue	2.64	124	0.29	176
Clark Street	1.14	630	0.14	412
College Avenue	1.82	212	0.23	329

*Rank is Statewide out of 115,309 locations RED = High PCR YELLOW = Medium PCR

To address safety along this corridor, several improvements are proposed. The proposed project would right-size the street cross-section for the traffic volume and reduce the number of potential vehicular conflict points at each intersection. Completing a road diet of this corridor would also provide slower traffic speeds which could lead to less severe crashes. A credible speed limit analysis using the proposed corridor cross-section recommends a speed limit of 25 mph for 19th Street. The speed limit would be lowered from 30 mph to 25 mph with the project.

The intersections of Day Street, University Avenue, Keo Way/Carpenter Avenue, and Forest Avenue would all be reduced from three northbound travel lanes to two. These intersections account for 62% of all crashes and 75% of the fatal and serious injury crashes along this corridor. The Iowa DOT and Crash Modification Factor (CMF) Clearinghouse do not have a CMF associated with the lane reduction of a one-way facility; however, NCHRP 17-581 (Table 83 on page 148)[1] provides safety prediction models and CMFs for one-way urban streets. Based on this research, reducing a one-way street from three lanes to two lanes results in a reduction of all crashes at signalized intersections by 18%. The work associated with this safety improvement is estimated to cost approximately $600,000.

Backplates with retroreflective borders are an FHWA proven safety countermeasure. Retroreflect backplates were installed on the signals along 19th Street at Day Street, University Avenue, and Forest Avenue in 2023. The proposed project would add retroreflective backplates at the intersection of I-235 EB On-Ramp, Keo Way/Carpenter Avenue, and Clark Street. Based on the FHWA and the Crash Modification Factor (CMF) Clearinghouse (CMF ID: 1410), this proven safety countermeasure is estimated to reduce all crashes by 15%. The work associated with the retroreflective backplates is estimated to cost approximately $25,000.

Additionally, this project would provide an improved pedestrian and bicycle connection between the Drake and Good Park Neighborhoods and downtown Des Moines. These improvements do not have a CRF associated with them; however, they improve safety and comfort for pedestrians and bicyclists by providing separation between the modes of transportation. These improvements are also supported by the City's Transportation Master Plan, MoveDSM, and our Vision Zero Transportation Safety Action.

Based on the Iowa DOT benefit-cost analysis spreadsheet, the estimated benefit cost for the lane reduction is 25.92. The estimated benefit cost for the backplates with retroreflective backplates is 40.56. (See Exhibit L).

[1] NCHRP 17-58: Safety Prediction Models for Six-Lane and One-Way Urban and Suburban Arterials. National Academies of Sciences, Engineering, and Medicine. 2022. Safety Prediction Models for Six-Lane and One-Way Urban and Suburban Arterials. Washington, DC: The National Academies Press. https://doi.org/10.17226/26515.

ITEMIZED BREAKDOWN OF ALL COSTS

Item C

PRELIMINARY ESTIMATE

19th Street Corridor Safety Improvements

DATE: 7/15/2024

ITEM NO.	DESCRIPTION	UNIT	UNIT PRICE	TOTAL PROJECT UNITS	TOTAL PROJECT AMOUNT	TSIP APPLICATION UNITS*	TSIP APPLICATION AMOUNT
1	Shared Use Trail	SY	$60.00	3,700	$222,000.00	1232.1	$73,926.00
2	Curb and Gutter	LF	$35.00	4,690	$164,150.00	1561.77	$54,661.95
3	Milling	SY	$6.00	13,200	$79,200.00	4395.6	$26,373.60
4	2" HMA Overlay	TON	$120.00	1,500	$180,000.00	499.5	$59,940.00
5	Full Depth Pavement Patch	SY	$150.00	1,320	$198,000.00	439.56	$65,934.00
6	Drive Lane Pavement Removal	SY	$15.00	4,300	$64,500.00		$0.00
7	Sidewalk Ramp	EA	$2,500.00	20	$50,000.00	10	$25,000.00
8	Driveway Replacement	EA	$4,000.00	25	$100,000.00		$0.00
9	Sidewalk Removal	SY	$15.00	1,500	$22,500.00	499.5	$7,492.50
10	Sewer Modifications	LS	$75,000.00	1	$75,000.00	0.33	$24,750.00
11	Tree Clearing	LS	$10,000.00	1	$10,000.00		$0.00
12	Sod	SQ	$80.00	700	$56,000.00		$0.00
13	Topsoil	CY	$30.00	1,300	$39,000.00		$0.00
14	Temporary Traffic Control	LS	$50,000.00	1	$50,000.00	0.33	$16,500.00
15	Traffic Signal - Keo/Carpenter Intersection	LS	$250,000.00	1	$250,000.00	0.50	$125,000.00
16	Traffic Signal Pole Relocation	EA	$25,000.00	2	$50,000.00	0.50	$12,500.00
17	Pavement Markings & Signage	LS	$50,000.00	1	$50,000.00	0.20	$10,000.00
				ESTIMATED CONSTRUCTION COSTS	$1,660,350.00		$502,078.05
				CONTENGENCY (25%)	$439,650.00		$122,921.95
				ESTIMATED TOTAL PROJECT COST	**$2,100,000.00**		
						ESTIMATED SAFETY-RELATED PROJECT COSTS	**$625,000.00**

Anticipated Funding Sources:

Traffic Safety Improvement Program	$ 500,000
General Obligation Bonds	$ 1,600,000
Total	**$ 2,100,000**

TIME SCHEDULE

Item D

August 2024 – August 2025..... Preliminary Plan Design

January 2025 – May 2025 ..... Final Plan Preparation

January 2025 – August 2025..... Property Acquisition

January 2025..... Iowa DOT Approval

Spring 2025 ..... TSIP Agreement

November 2025 – January 2026 ..... Plan Approval & Project Letting

March 2026 – June 2027 ..... Construction

MAP **Item E**

Project Location
Euclid Ave
E Euclid Ave
Urbandale Ave
Adams Ave
Payne Rd
Sheridan Ave
Holcomb Ave
Hickman Rd
Jefferson Ave
Riverview Park
North High School
Broadlawns Hospital
Birdland Park
Mondamin Ave
Clark St
Forest Ave
Carpenter Ave
Drake University
University Ave
E University Ave
Mercy Hospital Medical Center
Kingman Blvd
School St
W I235 Hwy
E I235 Hwy
Iowa Methodist Medical Center
Park St
Des Moines
Iowa State Capitol
E Grand Ave
E Court Ave
Grand Ave
Ingersoll Ave
Forest Dr
Terrace Dr
Lincoln Place Dr
Raccoon River
Fleur Dr
Tuttle St
Gray's Lake Open Space
Gray's Station Wetland
Gray's Lake Park
Des Moines River Open Space
E Dunham Ave
Hartford Ave
Martin Luther King Jr Pkwy
952 ft
901 ft

COLOR PICTURES

Item F

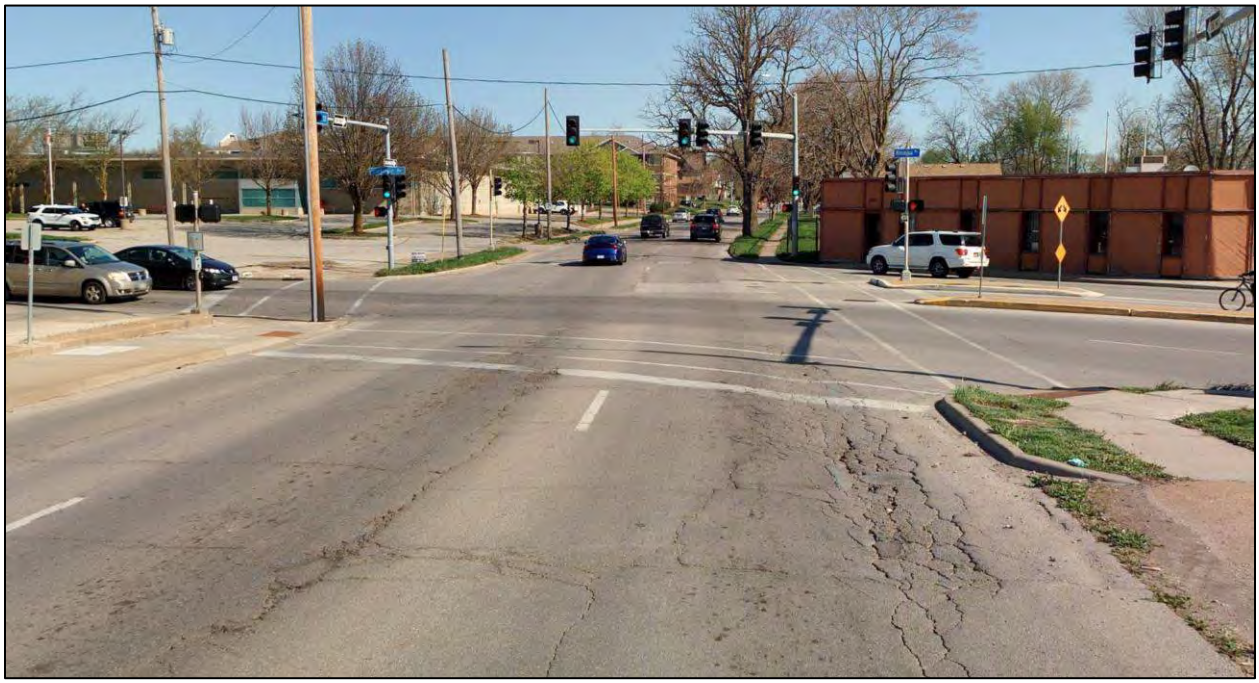
19th Street between Cottage Grove Ave & I-235 – looking north

19th Street between I-235 & Atkins St – looking north

COLOR PICTURES

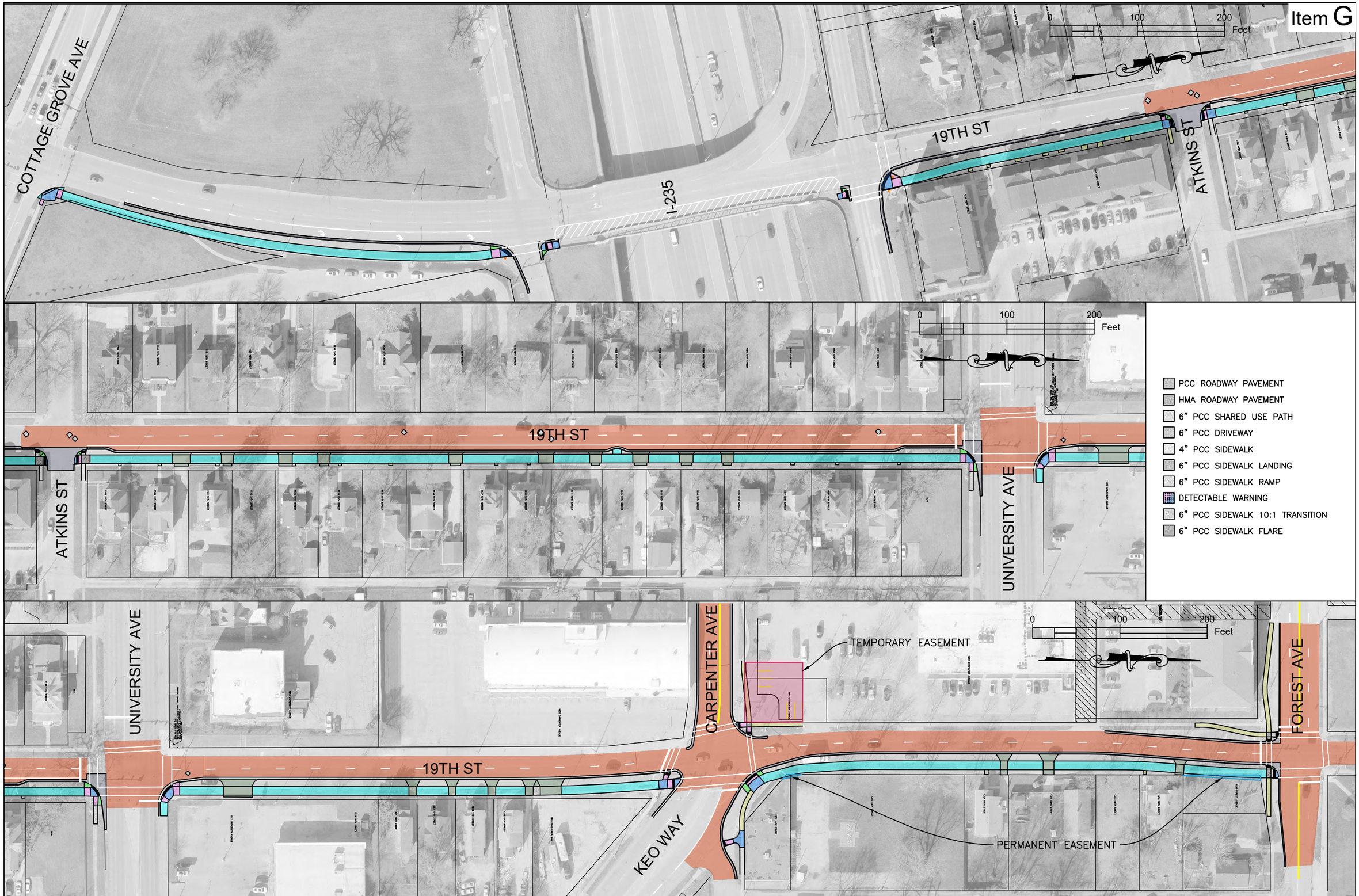
Item F

19th Street at University Ave – looking north



19th Street at Carpenter Ave – looking north

Item G



DESIGN TEAM	DSM ENGINEERING DEPT.	PROJECT	FY2026 TSIP Application: 19th Street Corridor Improvements	SHEET TITLE	PLAN VIEW	ACTIVITY I.D.	06-2023-014	FILE NO.		SHEET	13

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Item H

DESIGN TEAM	DSM ENGINEERING DEPT.	PROJECT	FY2026 TSIP Application: 19th Street Corridor Improvements	SHEET TITLE	AERIAL PHOTOGRAPH	ACTIVITY I.D.	06-2023-014	FILE NO.	SHEET	14

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ICAT CRASH SUMMARY OF MOTOR VEHICLE ACCIDENTS Item I

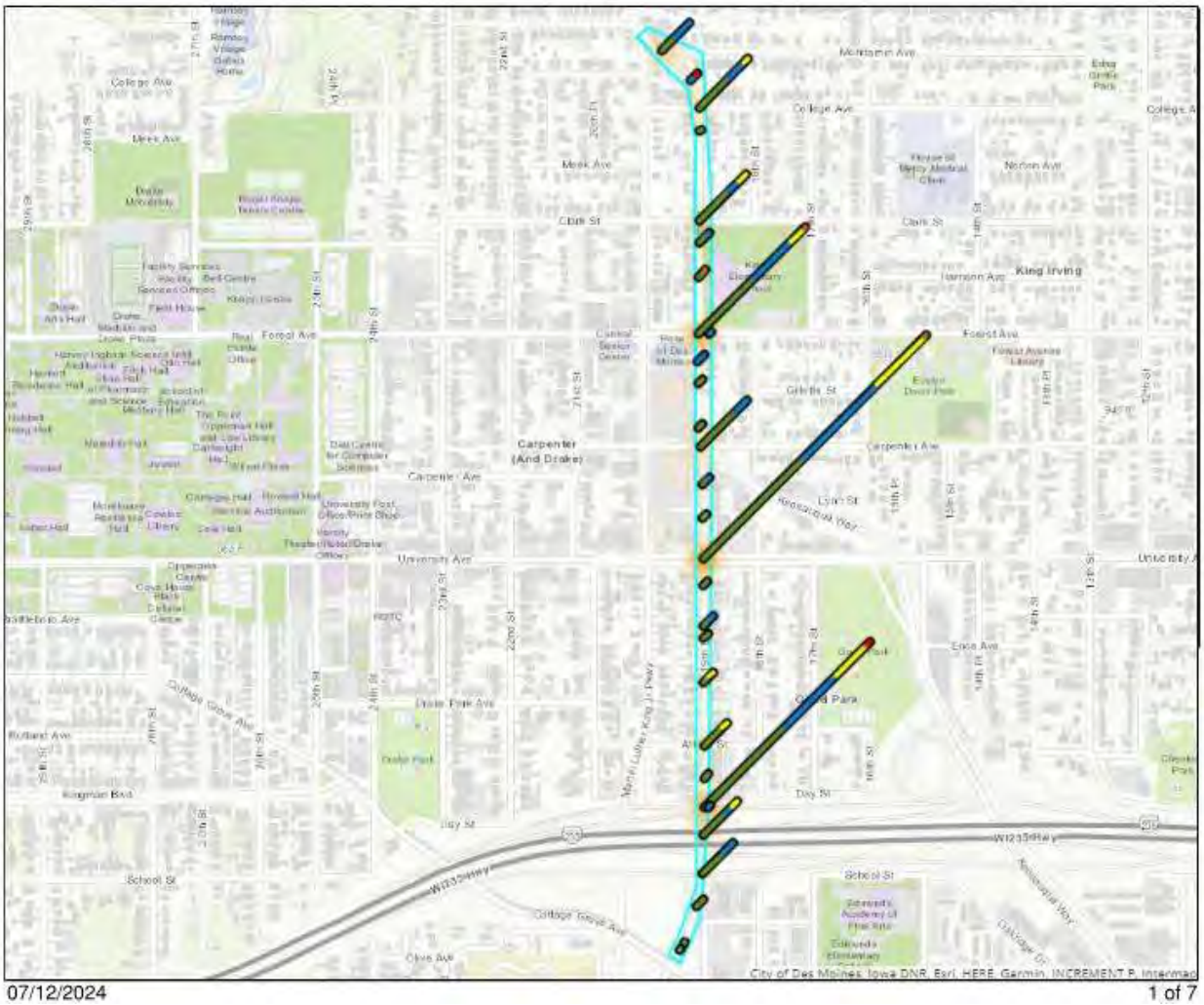
Iowa Crash Analysis Tool
Quick Report
2019-2023

Crash Severity	333
Fatal Crash	2
Suspected Serious Injury Crash	4
Suspected Minor Injury Crash	45
Possible/Unknown Injury Crash	101
Property Damage Only	181

Injury Status Summary	222
Fatalities	2
Suspected serious/incapacitating	6
Suspected minor/non-incapacitating	52
Possible (complaint of pain/injury)	106
Uninjured	0
Unknown	37
Not Reported	19

Property/Vehicles/Occupants	
Property Damage Total (dollars):	2,309,061.00
Average (per crash dollars):	6,934.12
Total Vehicles:	672.00
Average (per crash):	2.02
Total Occupants:	958.00
Average (per crash):	2.88

Average Severity	
Fatalities/Fatal Crash:	1.00
Fatalities/Crash:	0.01
Injuries/Crash:	0.49
Major Injuries/Crash:	0.02
Minor Injuries/Crash:	0.16
Possible/Unknown Injuries/Crash:	0.32



07/12/2024 1 of 7

ICAT CRASH SUMMARY OF MOTOR VEHICLE ACCIDENTS Item I

Iowa Crash Analysis Tool
Quick Report
2019-2023

Major Cause			332
Animal	0	Ran traffic signal	125
Ran stop sign	6	Failed to yield to emergency vehicle	1
FTYROW: At uncontrolled intersection	2	FTYROW: Making right turn on red signal	0
FTYROW: From stop sign	6	FTYROW: From yield sign	0
FTYROW: Making left turn	5	FTYROW: From driveway	0
FTYROW: From parked position	0	FTYROW: To pedestrian	1
FTYROW: Other	2	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	3
Aggressive driving/road rage	1	Driving too fast for conditions	9
Exceeded authorized speed	5	Improper or erratic lane changing	13
Operating vehicle in an reckless/erratic/care...	9	Followed too close	15
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	16
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...	1
Driver Distraction: Other electronic device ...	1	Driver Distraction: Passenger	0
Driver Distraction: Unrestrained animal	0	Driver Distraction: Reaching for object(s)/f...	1
Driver Distraction: Inattentive/lost in thou...	2	Driver Distraction: Other interior distracti...	9
Driver Distraction: Exterior distraction	2	Ran off road - right	1
Ran off road - straight	0	Ran off road - left	3
Lost control	8	Swerving/Evasive Action	0
Over correcting/over steering	0	Failed to keep in proper lane	3
Failure to signal intentions	1	Traveling on prohibited traffic way	0
Vehicle stopped on railroad tracks	0	Other: Vision obstructed	1
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	1
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	1	Other	17
Unknown	53	Not reported	0
Other: No improper action	8		

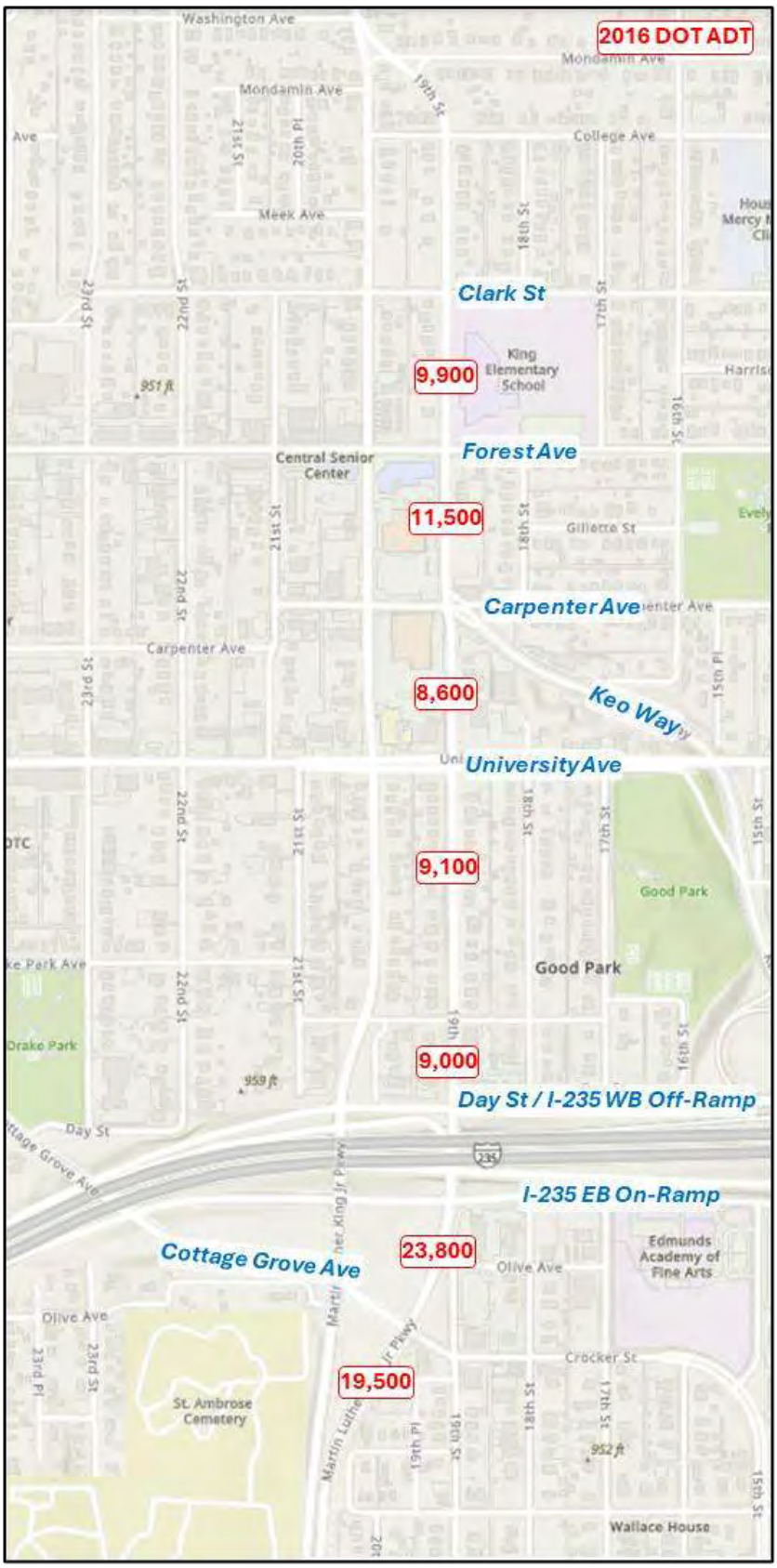
Manner of Crash Collision	333
Non-collision (single vehicle)	17
Head-on (front to front)	1
Rear-end (front to rear)	37
Angle (oncoming left turn)	9
Broadside (front to side)	200
Sideswipe (same direction)	57
Sideswipe (opposite direction)	1
Rear to rear	0
Rear to side	1
Not reported	0
Other	9
Unknown	1

Signalized Intersection Crash Data: 2019-2023

Intersection	Total	K	A	B	C	O
I-235 EB On-Ramp	12	0	0	0	4	8
Day Street (I-235 WB Off-Ramp)	65	1	1	11	21	31
University Avenue	84	0	1	18	28	37
Keo Way/Carpenter Avenue	19	0	0	0	5	14
Forest Avenue	40	0	1	5	14	20
Clark Street	17	0	0	2	4	11

TRAFFIC VOLUMES AND TURNING MOVEMENTS

Item J



TRAFFIC VOLUMES AND TURNING MOVEMENTS Item J

AM – Midday – PM Peak Hour Turning Movement Counts at Signalized Intersections

19th Street & I-235 EB On-Ramp (School Street)

Leg	School						School						19th						19th						
Direction	Eastbound						Westbound						Northbound						Southbound						
Time	R	T	L	U	App	Ped*	R	T	L	U	App	Ped*	R	T	L	U	App	Ped*	R	T	L	U	App	Ped*	Int
2022-04-19 7:15AM	0	11	41	0	**52**	0	0	0	0	0	**0**	0	78	237	0	0	**315**	0	0	0	0	0	**0**	0	**367**
7:30AM	0	15	43	0	**58**	0	0	0	0	0	**0**	0	98	283	0	0	**381**	0	0	0	0	0	**0**	0	**439**
7:45AM	0	13	49	0	**62**	0	0	0	0	0	**0**	0	126	338	0	0	**464**	0	0	0	0	0	**0**	0	**526**
8:00AM	0	10	44	0	**54**	0	0	0	0	0	**0**	0	65	248	0	0	**313**	0	0	0	0	0	**0**	0	**367**
2022-04-19 11:15AM	0	13	26	0	**39**	0	0	0	0	0	**0**	0	99	239	0	0	**338**	0	0	0	0	0	**0**	0	**377**
11:30AM	0	9	37	0	**46**	0	0	0	0	0	**0**	2	93	241	0	0	**334**	0	0	0	0	0	**0**	0	**380**
11:45AM	0	9	35	0	**44**	0	0	0	0	0	**0**	0	108	239	0	0	**347**	0	0	0	0	0	**0**	0	**391**
12:00PM	0	14	26	0	**40**	0	0	0	0	0	**0**	0	119	228	0	0	**347**	0	0	0	0	0	**0**	0	**387**
2022-04-19 4:30PM	0	23	39	0	**62**	0	0	0	0	0	**0**	0	150	418	0	0	**568**	0	0	0	0	0	**0**	0	**630**
4:45PM	0	19	43	0	**62**	0	0	0	0	0	**0**	1	159	425	0	0	**584**	0	0	0	0	0	**0**	0	**646**
5:00PM	0	17	47	0	**64**	0	0	0	0	0	**0**	0	146	459	0	0	**605**	0	0	0	0	0	**0**	0	**669**
5:15PM	0	22	36	0	**58**	0	0	0	0	0	**0**	0	162	510	0	0	**672**	0	0	0	0	0	**0**	0	**730**

19th Street & I-235 WB Off-Ramp (Day Street)

Leg	Day						Day						19th						19th						
Direction	Eastbound						Westbound						Northbound						Southbound						
Time	R	T	L	U	App	Ped*	R	T	L	U	App	Ped*	R	T	L	U	App	Ped*	R	T	L	U	App	Ped*	Int
2022-04-19 7:15AM	0	0	0	0	**0**	0	33	132	0	0	**165**	0	0	133	138	0	**271**	0	0	0	0	0	**0**	0	**436**
7:30AM	0	0	0	0	**0**	0	37	109	0	0	**146**	0	0	147	181	0	**328**	0	0	0	0	0	**0**	0	**474**
7:45AM	0	0	0	0	**0**	0	39	132	0	0	**171**	0	0	169	232	0	**401**	0	0	0	0	0	**0**	0	**572**
8:00AM	0	0	0	0	**0**	0	50	108	0	0	**158**	0	0	138	174	0	**312**	0	0	0	0	0	**0**	0	**470**
2022-04-19 11:45AM	0	0	0	0	**0**	0	38	102	0	0	**140**	0	0	150	133	0	**283**	0	0	0	0	0	**0**	0	**423**
12:00PM	0	0	0	0	**0**	0	37	94	0	0	**131**	0	0	107	141	0	**248**	0	0	0	0	0	**0**	0	**379**
12:15PM	0	0	0	0	**0**	0	29	96	0	0	**125**	0	0	120	137	0	**257**	0	0	0	0	0	**0**	0	**382**
12:30PM	0	0	0	0	**0**	0	34	88	0	0	**122**	0	0	139	132	0	**271**	0	0	0	0	0	**0**	0	**393**
2022-04-19 4:30PM	0	0	0	0	**0**	0	30	110	0	0	**140**	0	0	182	282	0	**464**	0	0	0	0	0	**0**	0	**604**
4:45PM	0	0	0	0	**0**	0	43	110	0	0	**153**	2	0	184	285	0	**469**	0	0	0	0	0	**0**	0	**622**
5:00PM	0	0	0	0	**0**	0	51	110	0	0	**161**	0	0	190	310	0	**500**	0	0	0	0	0	**0**	0	**661**
5:15PM	0	0	0	0	**0**	0	43	113	0	0	**156**	0	0	212	338	0	**550**	0	0	0	0	0	**0**	0	**706**

19th Street & University Avenue

Leg	University						University						19th						19th						
Direction	Eastbound						Westbound						Northbound						Southbound						
Time	R	T	L	U	App	Ped*	R	T	L	U	App	Ped*	R	T	L	U	App	Ped*	R	T	L	U	App	Ped*	Int
2022-04-19 7:30AM	0	94	10	0	**104**	1	15	66	0	0	**81**	0	20	132	25	0	**177**	1	0	0	0	0	**0**	1	**362**
7:45AM	0	99	9	0	**108**	1	16	69	0	0	**85**	0	38	152	18	0	**208**	1	0	0	0	0	**0**	0	**401**
8:00AM	0	80	18	0	**98**	0	17	60	0	0	**77**	1	21	128	33	0	**182**	1	0	0	0	0	**0**	0	**357**
8:15AM	0	82	13	0	**95**	0	12	59	0	0	**71**	0	20	109	18	0	**147**	2	0	0	0	0	**0**	0	**313**
2022-04-19 11:45AM	0	85	14	0	**99**	0	20	75	0	0	**95**	0	20	138	22	0	**180**	0	0	0	0	0	**0**	0	**374**
12:00PM	0	93	25	0	**118**	0	35	100	0	2	**137**	0	16	103	26	0	**145**	0	0	0	0	0	**0**	0	**400**
12:15PM	0	91	15	0	**106**	0	23	84	0	0	**107**	1	23	99	23	0	**145**	2	0	0	0	0	**0**	0	**358**
12:30PM	0	99	12	0	**111**	0	23	84	0	0	**107**	0	22	107	29	0	**158**	1	0	0	0	0	**0**	0	**376**
2022-04-19 4:30PM	0	94	20	0	**114**	0	39	110	0	0	**149**	2	27	125	20	0	**172**	2	0	0	0	0	**0**	0	**435**
4:45PM	0	92	16	0	**108**	1	41	79	0	0	**120**	1	28	146	33	0	**207**	1	0	0	0	0	**0**	1	**435**
5:00PM	0	105	20	0	**125**	0	32	87	0	0	**119**	1	25	162	36	0	**223**	0	0	0	0	0	**0**	3	**467**
5:15PM	0	99	15	0	**114**	0	33	95	0	0	**128**	0	31	163	25	0	**219**	4	0	0	0	0	**0**	1	**461**

TRAFFIC VOLUMES AND TURNING MOVEMENTS

Item J

19th Street & Keo Way/Carpenter Avenue

Leg Direction	Carpenter Eastbound						Carpenter Westbound						19th Northbound						19th Southbound						
Time	R	T	L	U	App	Ped*	R	T	L	U	App	Ped*	R	T	L	U	App	Ped*	R	T	L	U	App	Ped*	Int
2022-04-19 7:15AM	0	91	2	0	**93**	0	75	2	0	0	**77**	2	3	133	4	0	**140**	0	0	0	0	0	**0**	0	**310**
7:30AM	0	99	6	0	**105**	0	51	1	0	0	**52**	1	3	152	3	0	**158**	0	0	0	0	0	**0**	0	**315**
7:45AM	0	126	3	0	**129**	0	72	9	0	0	**81**	0	0	160	2	0	**162**	0	0	0	0	0	**0**	0	**372**
8:00AM	0	82	5	0	**87**	0	56	8	0	0	**64**	0	4	158	4	0	**166**	0	0	0	0	0	**0**	0	**317**
2022-04-19 11:45AM	0	49	5	0	**54**	0	49	5	0	0	**54**	0	0	157	6	0	**163**	0	0	0	0	0	**0**	0	**271**
12:00PM	0	49	4	0	**53**	0	44	4	0	0	**48**	0	4	149	4	0	**157**	0	0	0	0	0	**0**	0	**258**
12:15PM	0	49	4	0	**53**	0	54	6	0	0	**60**	0	3	121	6	0	**130**	0	0	0	0	0	**0**	0	**243**
12:30PM	0	48	6	0	**54**	1	56	9	0	0	**65**	0	4	137	2	0	**143**	0	0	0	0	0	**0**	0	**262**
2022-04-19 4:30PM	0	87	7	0	**94**	0	84	5	0	0	**89**	0	2	189	2	0	**193**	0	0	0	0	0	**0**	0	**376**
4:45PM	0	66	3	0	**69**	0	115	5	0	0	**120**	0	2	201	2	0	**205**	0	0	0	0	0	**0**	0	**394**
5:00PM	0	79	5	0	**84**	1	123	6	0	0	**129**	0	0	210	2	0	**212**	0	0	0	0	0	**0**	0	**425**
5:15PM	0	69	4	0	**73**	0	109	5	0	0	**114**	0	3	222	0	0	**225**	0	0	0	0	0	**0**	0	**412**

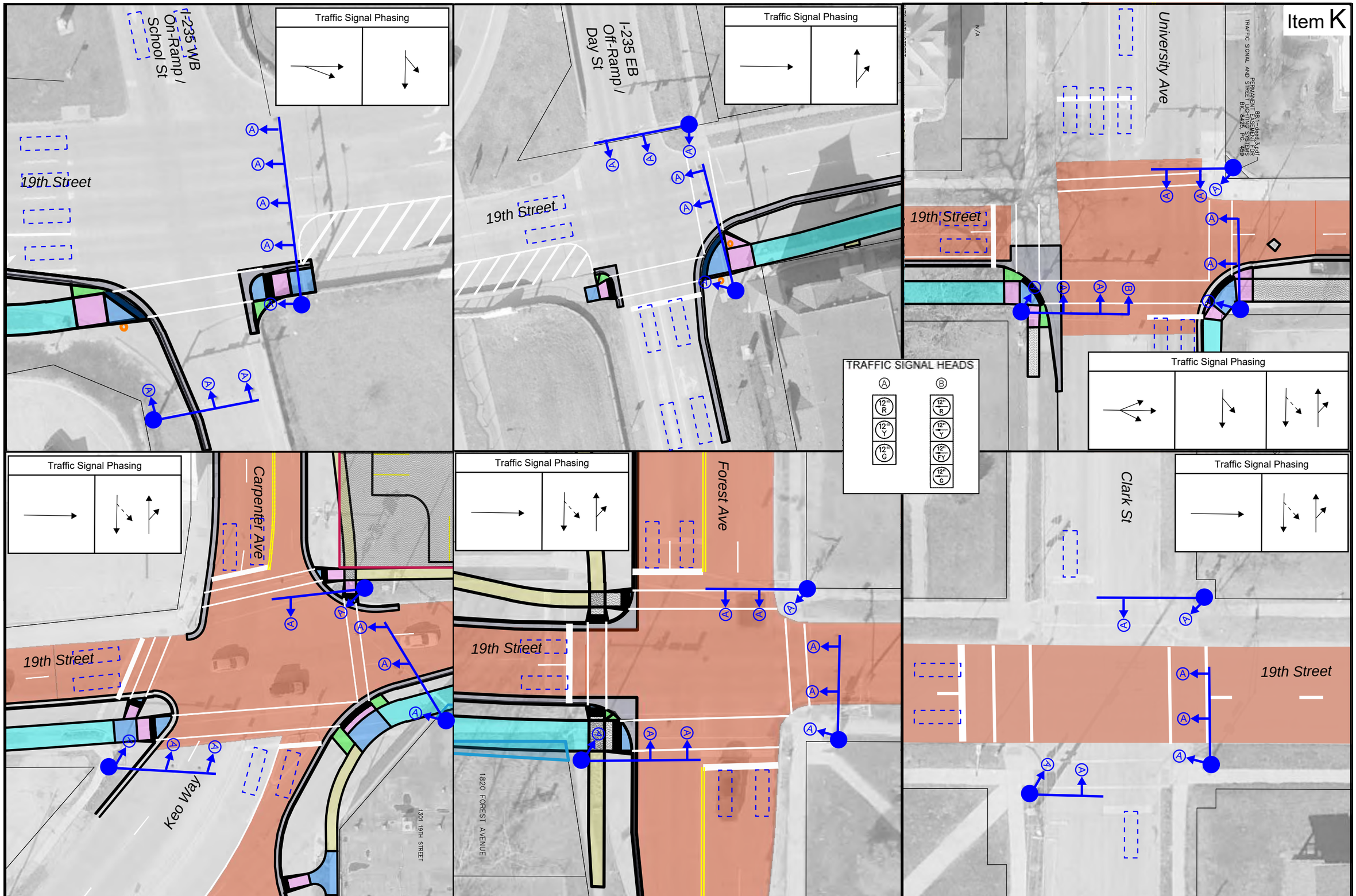
19th Street & Forest Avenue

Leg Direction	Forest Eastbound						Forest Westbound						19th Northbound						19th Southbound						
Time	R	T	L	U	App	Ped*	R	T	L	U	App	Ped*	R	T	L	U	App	Ped*	R	T	L	U	App	Ped*	Int
2022-04-19 7:15AM	0	21	2	0	**23**	0	7	8	0	0	**15**	0	20	164	23	0	**207**	0	0	0	0	0	**0**	0	**245**
7:30AM	0	26	2	0	**28**	1	24	39	0	0	**63**	0	23	153	22	0	**198**	0	0	0	0	0	**0**	10	**289**
7:45AM	0	11	6	0	**17**	0	8	25	0	0	**33**	0	7	198	21	0	**226**	0	0	0	0	0	**0**	1	**276**
8:00AM	0	7	5	0	**12**	0	5	18	0	0	**23**	0	14	185	30	0	**229**	0	0	0	0	0	**0**	1	**264**
2022-04-19 11:45AM	0	7	4	0	**11**	0	6	9	0	0	**15**	0	15	176	21	0	**212**	3	0	0	0	0	**0**	1	**238**
12:00PM	0	15	4	0	**19**	0	9	15	0	0	**24**	0	9	163	28	0	**200**	0	0	0	0	0	**0**	0	**243**
12:15PM	0	14	5	0	**19**	0	2	10	0	0	**12**	0	9	146	22	0	**177**	1	0	0	0	0	**0**	0	**208**
12:30PM	0	8	11	0	**19**	1	4	17	0	0	**21**	0	11	171	17	0	**199**	0	0	0	0	0	**0**	0	**239**
2022-04-19 4:30PM	0	20	9	0	**29**	0	3	18	0	0	**21**	0	10	224	47	0	**281**	0	0	0	0	0	**0**	0	**331**
4:45PM	0	22	9	0	**31**	0	6	28	0	0	**34**	1	6	263	43	0	**312**	3	0	0	0	0	**0**	0	**377**
5:00PM	0	26	10	0	**36**	0	10	17	0	0	**27**	0	5	278	53	0	**336**	3	0	0	0	0	**0**	0	**399**
5:15PM	0	19	7	0	**26**	0	6	18	0	0	**24**	0	10	279	50	0	**339**	3	0	0	0	0	**0**	3	**389**

19th Street & Clark Street

Leg Direction	Clark Eastbound						Clark Westbound						19th Northbound						19th Southbound						
Time	R	T	L	U	App	Ped*	R	T	L	U	App	Ped*	R	T	L	U	App	Ped*	R	T	L	U	App	Ped*	Int
2022-04-19 7:15AM	0	2	0	0	**2**	0	3	7	0	0	**10**	0	7	156	2	0	**165**	0	0	0	0	0	**0**	0	**177**
7:30AM	0	10	0	0	**10**	0	8	7	0	0	**15**	2	9	168	3	0	**180**	1	0	0	0	0	**0**	0	**205**
7:45AM	0	7	1	0	**8**	0	5	6	0	0	**11**	0	10	198	3	0	**211**	1	0	0	0	0	**0**	2	**230**
8:00AM	0	3	4	0	**7**	0	3	11	0	0	**14**	0	7	192	2	0	**201**	2	0	0	0	0	**0**	0	**222**
2022-04-19 11:45AM	0	7	1	1	**9**	0	3	3	0	0	**6**	0	4	180	3	0	**187**	0	0	0	0	0	**0**	0	**202**
12:00PM	0	2	0	0	**2**	0	5	3	0	0	**8**	0	3	165	6	0	**174**	1	0	0	0	0	**0**	0	**184**
12:15PM	0	3	1	0	**4**	0	6	8	0	0	**14**	0	0	151	3	0	**154**	0	0	0	0	0	**0**	0	**172**
12:30PM	0	6	1	0	**7**	0	5	8	0	0	**13**	0	6	170	2	0	**178**	0	0	0	0	0	**0**	0	**198**
2022-04-19 4:30PM	0	3	5	0	**8**	0	2	3	0	0	**5**	0	5	235	3	0	**243**	0	0	0	0	0	**0**	0	**256**
4:45PM	0	5	1	0	**6**	0	9	11	0	0	**20**	0	10	259	5	0	**274**	0	0	0	0	0	**0**	0	**300**
5:00PM	0	5	4	0	**9**	0	4	7	0	0	**11**	0	9	286	6	0	**301**	0	0	0	0	0	**0**	1	**321**
5:15PM	0	2	4	0	**6**	0	6	3	0	0	**9**	0	8	278	5	0	**291**	0	0	0	0	0	**0**	0	**306**

Item K



DESIGN TEAM	DSM ENGINEERING DEPT.	PROJECT	FY2026 TSIP Application: 19th Street Corridor Improvements	SHEET TITLE	TRAFFIC SIGNAL LAYOUT	ACTIVITY I.D.	06-2023-014	FILE NO.	SHEET	20

T:\ENG\DESIGN\06\2023\014\DESIGN\CAD FILES\CONCEPT EXHIBITS\OVERALL IMPROVEMENTS (PROPOSED).DWG 7/22/2024 10:45 AM

IOWA DOT

Safety Benefit-Cost Ratio

County:	Polk	Prepared By:	City of DSM
Location:	19th Street	Date Prepared:	7/15/2024
Proposed Improvements:	Reduce NB lanes from 3 lanes to 2 lanes. Intersections included: Day St (I-235 WB Off-Ramp), University Ave, Keo Way, Forest Ave		
Estimated Improvement Cost:	$ 600,000		
Inflation on Crash Costs:	4%	Annual Maintenance: (% of Improvement Cost)	2%
Discount Rate:	4%		
Estimated Service Life:	20	Annual Maintenance Cost:	$ 12,000
Method Choice:	CRF Method		

The Crash Reduction Factor (CRF) Method applies one to three CRFs to historical crashes to estimate reductions in future crashes. Crash Modification Factors (CMFs) can be converted to CRFs. For additional information, click the "Learn More" button.

Crash Reduction Factor (CRF) Method

Traffic Growth Factor:	1%
Number of CRFs:	1
Years of Crash History:	5

Combined CRF (Dominant Common Residuals Method)

Iowa DOT's preferred methodology for combining CRFs is Dominant Common Residuals, since it is more conservative than the other options.

	CRF 1:	Combined CRF	
CRF Value (%)	18	18.0	
Equivalent CMF	0.82		Is Dom. Com. Resd.
Combined CMF, if # used (DR)	0.82	0.82	TRUE
Combined CMF, if # used (Mult)	0.82		Is data entered befc
Pick Dom Com. Resd. Or Mult. Fo	0.82	0.82	FALSE

Crash Severity	Rounded Societal Costs	Crash History (Total):	CRF (from above)	Crash History - Annual Avg	Crashes Saved Annually
Fatal (K)	$ 4,200,000	1	18.0	**0.20**	**0.04**
Serious Injury (A)	$ 4,200,000	3	18.0	**0.60**	**0.11**
Minor Injury (B)	$ 280,000	34	18.0	**6.80**	**1.22**
Possible/Unknown Injury (C)	$ 130,000	68	18.0	**13.60**	**2.45**
Property Damage Only (O)	$ 20,000	102	18.0	**20.40**	**3.67**

Crash Severity	Annual Societal Benefit
Fatal (K)	**$ 151,200**
Serious Injury (A)	**$ 453,600**
Minor Injury (B)	**$ 342,720**
Possible/Unknown Injury (C)	**$ 318,240**
Property Damage Only (O)	**$ 73,440**

Total Benefits and Costs

		Implementation Cost	$ 600,000
		Present Value of Maint.	$ 163,084
Present Value Benefits (Societal Benefits)	$ 19,780,930	Present Value Costs (Impl. and Maint. Costs)	$ 763,084
Present Value Net Return	$ 19,017,846		
Benefit Cost Ratio	**25.92**		

IOWADOT

Safety Benefit-Cost Ratio

County:	Polk	Prepared By:	City of DSM
Location:	19th Street	Date Prepared:	7/15/2024
Proposed Improvements:	Retroreflective Backplates at 19th St & I-235 EB On-Ramp, 19th St & Keo Way/Carpenter Ave, & at 19th St/Clark Street		
Estimated Improvement Cost:	$ 25,000		
Inflation on Crash Costs:	4%	Annual Maintenance:	2%
Discount Rate:	4%	(% of Improvement Cost)	
Estimated Service Life:	20	Annual Maintenance Cost:	$ 500
Method Choice:	CRF Method	The Crash Reduction Factor (CRF) Method applies one to three CRFs to historical crashes to estimate reductions in future crashes. Crash Modification Factors (CMFs) can be converted to CRFs. For additional information, click the "Learn More" button.	

Crash Reduction Factor (CRF) Method

Traffic Growth Factor:	1%
Number of CRFs:	1
Years of Crash History:	5

Combined CRF (Dominant Common Residuals Method)

Iowa DOT's preferred methodology for combining CRFs is Dominant Common Residuals, since it is more conservative than the other options.

	CRF 1:	Combined CRF	
CRF Value (%)	15	**15.0**	
Equivalent CMF	0.85		Is Dom. Com. Resd.
Combined CMF, if # used (DR)	0.85	0.85	TRUE
Combined CMF, if # used (Mult)	0.85		Is data entered befc
Pick Dom Com. Resd. Or Mult. Fo	0.85	0.85	FALSE

Crash Severity	Rounded Societal Costs	Crash History (Total):	CRF (from above)	Crash History - Annual Avg	Crashes Saved Annually
Fatal (K)	$ 4,200,000	0	15.0	**0.00**	**0.00**
Serious Injury (A)	$ 4,200,000	0	15.0	**0.00**	**0.00**
Minor Injury (B)	$ 280,000	2	15.0	**0.40**	**0.06**
Possible/Unknown Injury (C)	$ 130,000	13	15.0	**2.60**	**0.39**
Property Damage Only (O)	$ 20,000	33	15.0	**6.60**	**0.99**

Crash Severity	Annual Societal Benefit
Fatal (K)	**$ -**
Serious Injury (A)	**$ -**
Minor Injury (B)	**$ 16,800**
Possible/Unknown Injury (C)	**$ 50,700**
Property Damage Only (O)	**$ 19,800**

Total Benefits and Costs

		Implementation Cost	$ 25,000
		Present Value of Maint.	$ 6,795
Present Value Benefits (Societal Benefits)	$ 1,289,483	Present Value Costs (Impl. and Maint. Costs)	$ 31,795
Present Value Net Return	$ 1,257,688		
Benefit Cost Ratio	**40.56**		

A

Rev. 07/23

Application for SITE-SPECIFIC TSIP FUNDS

GENERAL INFORMATION **DATE:** 8/14/2024

Location / Title of Project Center Avenue & Jacoby Drive Roundabout

Applicant City of Epworth

Contact Person Sandra Gassman Title Mayor

Complete Mailing Address 191 Jacoby Dr. E., PO Box 266

Epworth, IA 52045

Phone 563-876-3320 (Area Code) E-Mail smgmayor@gmail.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	$	1,138,525
Total Project Cost	$	1,352,528
Safety Funds Requested	**$**	**500,000**

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
		☐	☐		
		☐	☐		

A

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 Epworth

Signed: Sandra M. Gassman 8/14/2024

Signature Date Signed

Sandra M. Gassman

Printed Name

Attest: Janet Berger 8/14/24

Signature Date Signed

Janet Berger

Printed Name

A

RESOLUTION # 16-2024

RESOLUTION AUTHORIZING THE FILING OF A TRAFFIC SAFETY IMPROVEMENT PROGRAM (TSIP) GRANT APPLICATION TO ASSIST WITH THE FUNDING FOR A Roundabout Project IN THE CITY OF EPWORTH, IOWA.

WHEREAS The City recognized the need to improve safety at the intersection of Center Avenue and Jacoby Drive by installing a roundabout improvement; and

WHEREAS the City is requesting TSIP funding in the amount of $500,000 to assist with the improvements,

NOW THEREFORE, BE IT RESOLVED BY THE CITY COUNCIL OF THE CITY OF EPWORTH, IOWA, THAT:

THE CITY HEREBY SUPPORTS AND AUTHORIZES THE GRANT APPLICATION SUBMITTAL FOR FUNDING THROUGH THE TRAFFIC SAFETY IMPROVEMENT PROGRAM TO ASSST WITH THE ROUNDABOUT PROJECT.

Passed, approved and adopted this 24th day of July, 2024

Sandra M. Gassman

Sandra Gassman, Mayor

Janet Berger

Janet Berger, City Clerk

B

Site Specific TSIP Application

City of Epworth – Center Avenue & Jacoby Drive Roundabout

Narrative

The City of Epworth has expressed concerns about safety and congestion at the intersection of South Center Avenue and Jacoby Drive with regards to pedestrian safety and congestion during morning and afternoon peak hours of school traffic and is looking for alternatives to address the concerns. The City of Epworth had a TEAP Traffic and Safety Study completed in December of 2023. A copy of this study can be found at the following link: https://burringtongroup.sharefile.com/d-s20f168a50fed40d785c35f49b18f8a62

The intersection of Center Avenue and Jacoby Drive is a two-way stop controlled, four-legged intersection located approximately 230' north of the westbound exit ramp from US-20/52. South Center Avenue (through legs) has a posted speed limit of 25 mph with a two-lane rural cross section with approximately 24-foot wide northbound lane and a 12-foot wide southbound lane. Jacoby Drive (stop controlled legs) has a posted speed limit of 35 mph with a two-lane rural cross section with approximately 11-foot lanes with shared through/left-turn/right-turn movements at each approach. The stop controlled legs of Jacoby drive are at approximately a 75-degree angle to Center Avenue. There is a striped pedestrian crossing across South Center Avenue on the north side of the Jacoby Drive intersection which is part of the existing shared-use path system within the City. Based upon the TEAP study, the existing intersection geometry appears meet the minimum site distance requirements for all movements *except* for the westbound crossing (through) movements at the intersection.

A review of the Iowa Crash Analysis tool indicates that there has been one reported crash at this intersection with property damage only in the last 5 years. While there has only been the one reported accident, interviews with City Staff indicate that there have been frequent close calls at this intersection which raise concern.

At the time of this application, there is a Casey's gas station/convenience store under construction to be located at the SE corner of Placid Road (Center Avenue) and US-20/52 which is tentatively scheduled to open in November of 2024. The addition of this commercial use south of US-20/52 will likely have an impact of increasing the number of vehicles travelling through this intersection. In addition, the City has secured TAP funding earlier this year to install a new multi-use path on the east side of Placid Road/Center Avenue from Casey's, connecting to the existing multi-use path on Jacoby Drive East. Construction of the multi-use path is tentatively programmed for 2025.

B

The City's desired improvement to address the safety concerns is to install a single lane roundabout at this intersection. As indicated in the TEAP study, the roundabouts help improve traffic flow by allowing the continuous movement traffic while forcing the vehicles entering the intersection to slow down. Roundabouts also have shown to improve safety by reducing the number of conflict points between vehicles. The single lane roundabout was chosen due the anticipated traffic counts and its ability to operate at an anticipated LOS A while having available space to queue the 95th percentile queues for the peak hours. The implementation of the roundabout would help smooth vehicle operations along Center Avenue between US-20/52 and Jacoby Drive and bring all signage and striping into compliance with MUTCD requirements.

C

BURRINGTON GROUP
Civil Engineering | Land Surveying

PRELIMINARY COST ESTIMATE

Center Avenue Jacoby Drive Roundabout Improvements Project

EPWORTH, IOWA

ITEM NO.	DESCRIPTION	QUANTITY	UNITS	UNIT COST	TOTAL
1	Excavation, CL 10 (waste)	2000	C.Y.	14.00	$ 28,000
2	PCC Pavement Removal	4100	S.Y.	10.00	$ 41,000
3	PCC Driveway Removal	200	S.Y.	10.00	$ 2,000
4	PCC Sidewalk Removal	300	S.Y.	8.00	$ 2,400
5	8" PCC Concrete Pavement	3680	S.Y.	90.00	$ 331,200
6	8" PCC Concrete Truck Pavement (colored)	820	S.Y.	110.00	$ 90,200
7	4" PCC Sidewalk	90	S.Y.	55.00	$ 4,950
8	5" PCC Sidewalk	200	S.Y.	60.00	$ 12,000
9	8" PCC Sidewalk	15	S.Y.	100.00	$ 1,500
10	Detectable Warnings	40	S.F.	80.00	$ 3,200
11	PCC Driveway Replacement (8")	265	S.Y.	85.00	$ 22,525
12	Special Backfill (6")	2300	Ton	30.00	$ 69,000
13	3" Breaker (12" Thick)	3200	Ton	25.00	$ 80,000
14	Erosion Stone	15	Ton	50.00	$ 750
15	Granular Shoulders, Type A	6	STA	300.00	$ 1,800
16	Geogrid	4500	S.Y.	6.00	$ 27,000
17	Subdrain, 6", Case B, Type 1	1500	L.F.	15.00	$ 22,500
18	Intake Removal	4	Each	1,000.00	$ 4,000
19	Storm Sewer Removal	320	L.F.	15.00	$ 4,800
20	SW-507 Intake	6	Each	5,500.00	$ 33,000
21	SW-509 Intake	2	Each	7,500.00	$ 15,000
22	SW-511 Intake	1	Each	4,000.00	$ 4,000
23	15" RCP Storm Sewer	60	L.F.	80.00	$ 4,800
24	18" RCP Storm Sewer	140	L.F.	100.00	$ 14,000
25	24" RCP Storm Sewer	220	L.F.	120.00	$ 26,400
26	18" RCP Apron	1	Each	3,000.00	$ 3,000
27	24" RCP Apron	1	Each	3,500.00	$ 3,500
28	Sanitary MH Adjustment - Major	2	Each	4,500.00	$ 9,000
29	Removal of Sign	6	Each	200.00	$ 1,200
30	Type A Sign	12	Each	500.00	$ 6,000
31	Striping	1	L.S.	15,000.00	$ 15,000
34	Soil Erosion Control	1	L.S.	20,000.00	$ 20,000
35	Traffic Control	1	L.S.	12,000.00	$ 12,000
36	Topsoil Import & Spreading	350	C.Y.	50.00	$ 17,500
37	Permanent Seeding, Fertilizing and Mulching, Type	0.8	Acre	8,500.00	$ 6,800
38	Mobilization	1	L.S.	50,000.00	$ 50,000
	Subtotal Center Avenue/Jacoby Roundabout				*$ 990,025*

Burrington Group, Inc.
105 West Main Street
Manchester, IA 52057
p 563.927.2434 f 563.927.8824

8/13/2024

C

BURRINGTON GROUP
Civil Engineering | Land Surveying

PRELIMINARY COST ESTIMATE
Center Avenue Jacoby Drive Roundabout Improvements Project
EPWORTH, IOWA

ITEM NO.	DESCRIPTION	QUANTITY	UNITS	UNIT COST	TOTAL
				Contingency (15%)	*$ 148,500*
				Total Preliminary Construction Cost	**$ 1,138,525**
	OTHER PROJECT COSTS				
	Lighting	1	L.S.	30,000.00	30,000
	Engineering Design				$ 85,000
	Construction Engineering	10.0%			99,003
					-
				Total Other Project Costs	**$ 214,003**
				PHASE 1 - TOTAL PROJECT COSTS	**$ 1,352,528**
	Anticipated Funding Source Breakdown:				
	ICAAP Grant (submitting application 9/2024)	$ 852,528.00			
	TSIP Site-Specific Project Grant	$ 500,000.00			

Burrington Group, Inc.
105 West Main Street
Manchester, IA 52057
p 563.927.2434 f 563.927.8824

8/13/2024

D

Anticipated Project Schedule

Roundabout

- Design – Spring 2025
- Bidding – February 2026
- Construction – Spring/Summer 2026

Shared-Use Trail (Approved TAP Funded Project)

- Design – November 2024
- Bidding – June 2025 (earliest likely)
- Construction – Summer/Fall 2025

E

N

08–26–16

LEGEND

INTERSTATE ROUTE	35
FREEWAY OR EXPRESSWAY ROUTE	30
U.S. NUMBERED ROUTE	6
BUSINESS ROUTE	61
STATE NUMBERED ROUTE	44
UNSIGNED ROUTE	461
COUNTY NUMBERED ROUTE	P38
SECONDARY ROAD OR ADJOINING CITY STREET	
CITY STREET	
PARK, INSTITUTION, OR FEDERAL ROAD	
RAILROAD	
CORPORATION LINE	
SECTION LINE	
CUL-DE-SAC	
SECTION, TOWNSHIP & RANGE NUMBERS	9, T-81N, R-30W

SCALE IN MILES

0 0.1 0.2 0.3 0.4 0.5 0.75 1.0

0 0.1 0.2 0.3 0.4 0.5 1.0 1.5 2.0

SCALE IN KILOMETERS

HIGHWAY AND STREET MAP OF

EPWORTH 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

31–2405

F

Photo 1 Center Avenue Looking North

Photo 2Center Avenue looking SW at Jacoby Dr

F

Photo 3 Center Avenue, looking south at Jacoby Dr. East

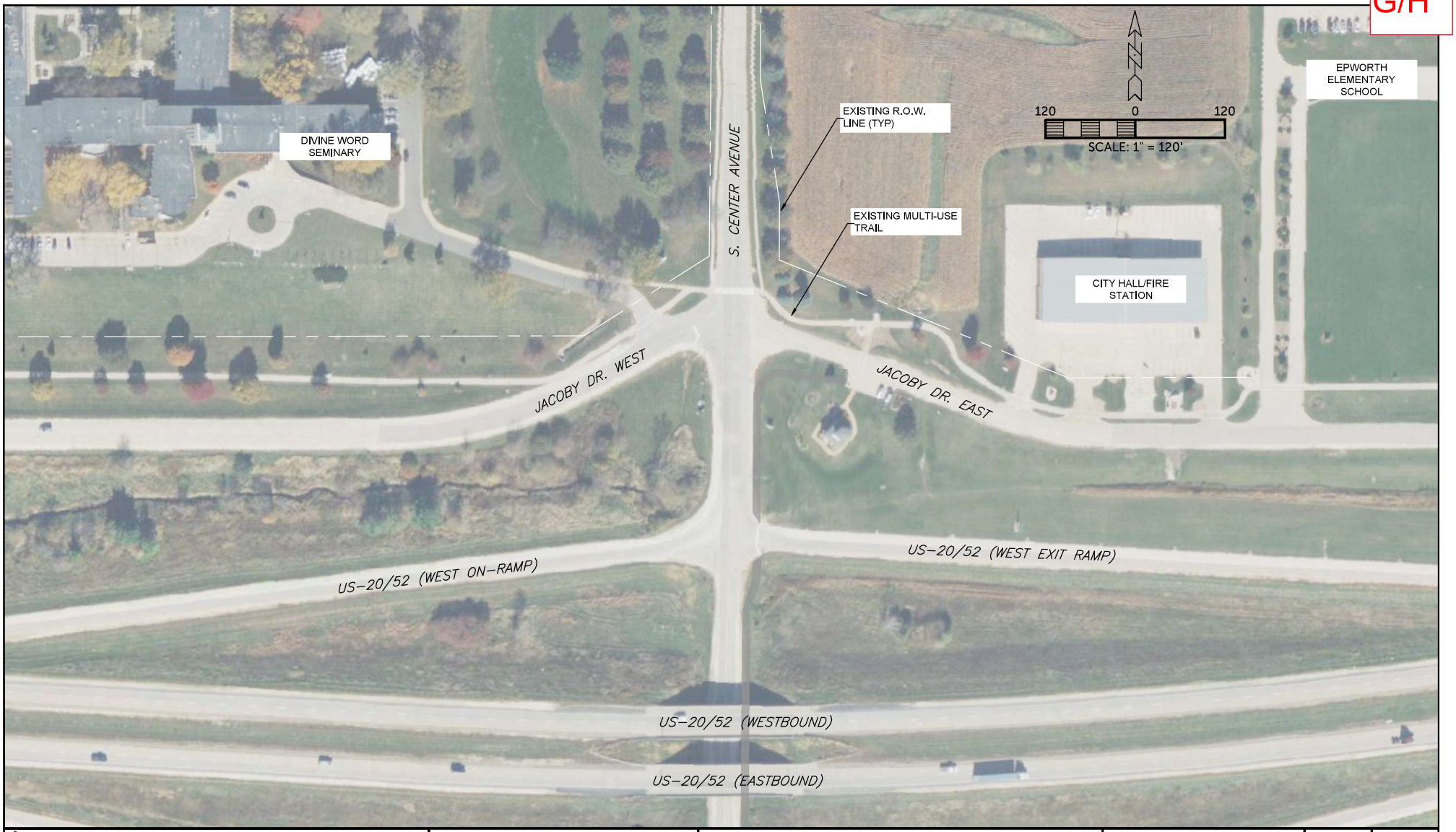
Photo 4 - Center Avenue looking SE at Jacoby Drive W

F

Photo 5 - Pedestrian Crosswalk at Shared Use Path (looking west)

Photo 6 Center Avenue, looking south, North of Jacoby Drive

G/H



BURRINGTON GROUP, INC.
Civil Engineering | Land Surveying
105 W. Main Street Manchester, Iowa 52057
Phone 563-927-2434 burringtongroup.com

DRAWN BY: JAW	APPROVED BY: JAW	PROJECT	SHEET NAME	SHEET NO.	OF
DATE: 8/13/2024	PROJECT NO: XXXX	CENTER-JACOBY ROUNDABOUT EPWORTH, IOWA	EXISTING CONDITIONS AERIAL		

G

FILE NO.	ENGLISH	DESIGN TEAM Iowa DOT/HR GREEN	Des Moines COUNTY	PROJECT NUMBER 171634.21	SHEET NUMBER 001

11:45:53 AM 10/4/2023 bjohnso \\hrgreen.com\HRG\Data\2017\171634.21\CAD\Design\CADD_Files\Sheet_Files\SCROLL_MINI_17163421.dgn

Iowa Crash Analysis Tool
Quick Report
2019-2024

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

Injury Status Summary	0
Fatalities	0
Suspected serious/incapacitating	0
Suspected minor/non-incapacitating	0
Possible (complaint of pain/injury)	0
Uninjured	0
Unknown	0
Not Reported	0

Property/Vehicles/Occupants	
Property Damage Total (dollars):	1,500.00
Average (per crash dollars):	1,500.00
Total Vehicles:	2.00
Average (per crash):	2.00
Total Occupants:	5.00
Average (per crash):	5.00

Average Severity	
Fatalities/Fatal Crash:	0.00
Fatalities/Crash:	0.00
Injuries/Crash:	0.00
Major Injuries/Crash:	0.00
Minor Injuries/Crash:	0.00
Possible/Unknown Injuries/Crash:	0.00

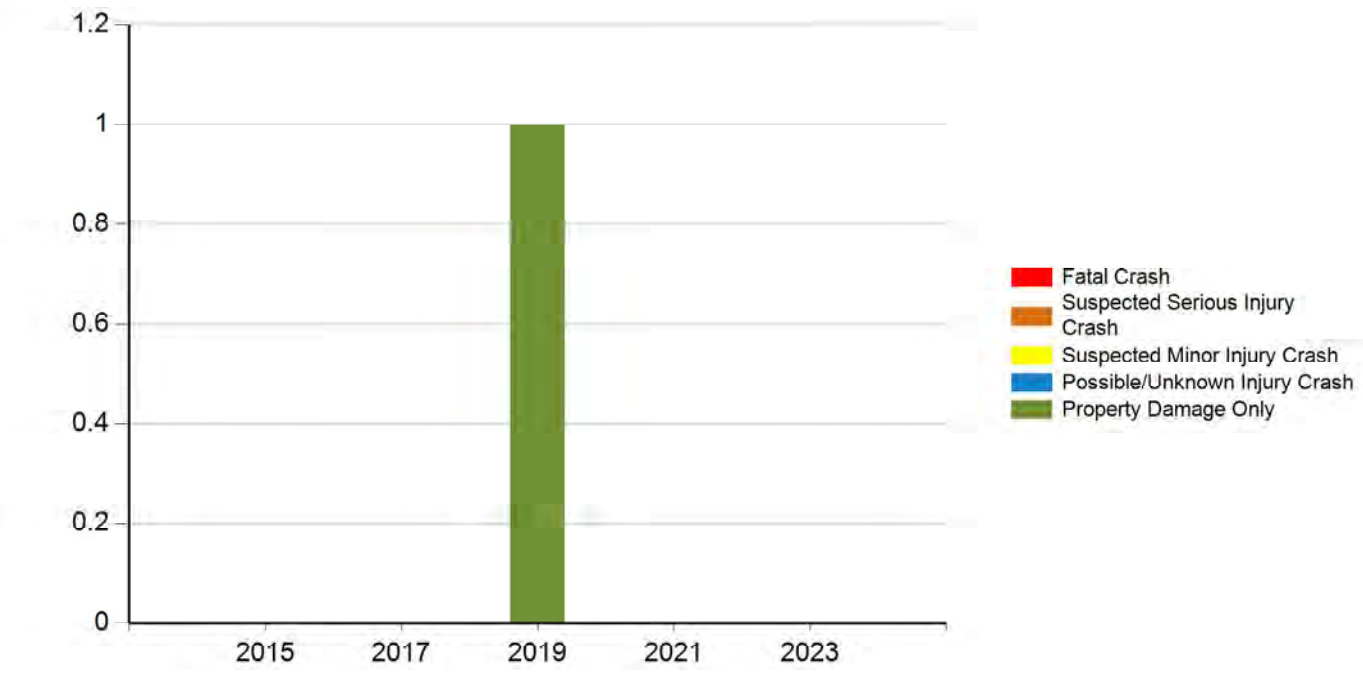
Iowa Crash Analysis Tool
Quick Report
2019-2024

Major Cause			**1**
Animal	0	Ran traffic signal	0
Ran stop sign	0	Failed to yield to emergency vehicle	0
FTYROW: At uncontrolled intersection	0	FTYROW: Making right turn on red signal	0
FTYROW: From stop sign	0	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	0
Exceeded authorized speed	0	Improper or erratic lane changing	0
Operating vehicle in an reckless/erratic/care...	0	Followed too close	1
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		

Crash Severity - Annual

Crash Year	Fatal Crash	Suspected Serious Injury Crash	Suspected Minor Injury Crash	Possible/Unknown Injury Crash	Property Damage Only	**Total**
2014	0	0	0	0	0	0
2015	0	0	0	0	0	0
2016	0	0	0	0	0	0
2017	0	0	0	0	0	0
2018	0	0	0	0	0	0
2019	0	0	0	0	1	1
2020	0	0	0	0	0	0
2021	0	0	0	0	0	0
2022	0	0	0	0	0	0
2023	0	0	0	0	0	0
2024	0	0	0	0	0	0
Total	0	0	0	0	1	1

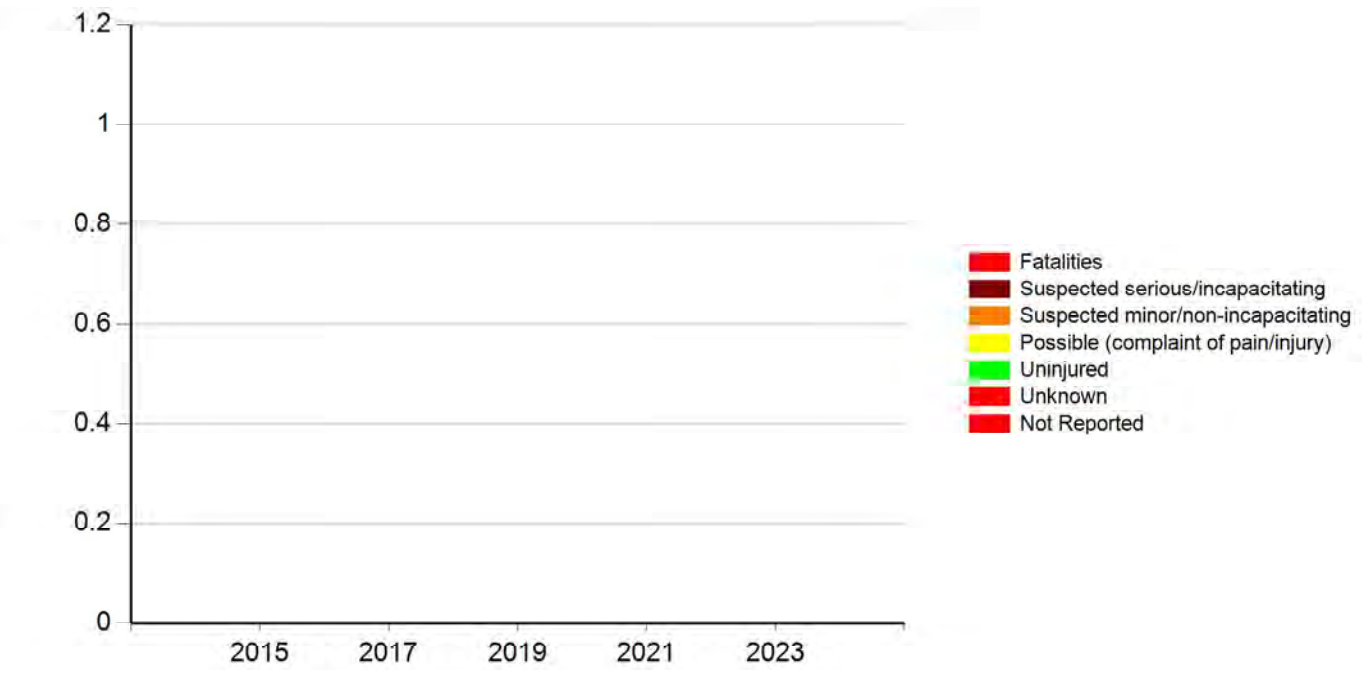
Severity/Year



Injury Status - Annual

Crash Year	Fatalities	Suspected serious/incapacitating	Suspected minor/non-incapacitating	Possible (complaint of pain/injury)	Uninjured	Unknown	Not Reported	**Total**
2014	0	0	0	0	0	0	0	0
2015	0	0	0	0	0	0	0	0
2016	0	0	0	0	0	0	0	0
2017	0	0	0	0	0	0	0	0
2018	0	0	0	0	0	0	0	0
2019	0	0	0	0	0	0	0	0
2020	0	0	0	0	0	0	0	0
2021	0	0	0	0	0	0	0	0
2022	0	0	0	0	0	0	0	0
2023	0	0	0	0	0	0	0	0
2024	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0

Injury Status/Year



J

Epworth, IA Intersection of Center Ave and Jacoby Dr
Epworth Iowa
Wednesday, September 13, 2023

	Southbound Center Ave						Westbound Jacoby Dr						Northbound Center Ave						Eastbound Jacoby Dr						
Time	U Turns	Left Turns	Straight Through	Right Turns	Crosswalk Crossings	*Vehicle Approach Total*	U Turns	Left Turns	Straight Through	Right Turns	Crosswalk Crossings	*Vehicle Approach Total*	U Turns	Left Turns	Straight Through	Right Turns	Crosswalk Crossings	*Vehicle Approach Total*	U Turns	Left Turns	Straight Through	Right Turns	Crosswalk Crossings	*Vehicle Approach Total*	VEHICLE TOTAL
12:00 AM	0	0	0	0	0	*0*	0	0	0	1	0	*1*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	**1**
12:15 AM	0	0	1	0	0	*1*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	**1**
12:30 AM	0	0	1	0	0	*1*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	**1**
12:45 AM	0	0	1	0	0	*1*	0	0	0	1	0	*1*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	**2**
Hourly Total	0	0	3	0	0	*3*	0	0	0	2	0	*2*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	**5**
1:00 AM	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	**0**
1:15 AM	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	**0**
1:30 AM	0	0	2	0	0	*2*	0	0	0	0	0	*0*	0	0	1	0	0	*1*	0	0	0	0	0	*0*	**3**
1:45 AM	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	**0**
Hourly Total	0	0	2	0	0	*2*	0	0	0	0	0	*0*	0	0	1	0	0	*1*	0	0	0	0	0	*0*	**3**
2:00 AM	0	1	0	0	0	*1*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	**1**
2:15 AM	0	0	0	0	0	*0*	0	0	0	1	0	*1*	0	0	2	0	0	*2*	0	0	0	0	0	*0*	**3**
2:30 AM	0	1	1	0	0	*2*	0	0	0	0	0	*0*	0	0	1	0	0	*1*	0	0	0	0	0	*0*	**3**
2:45 AM	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	1	0	0	*1*	0	0	0	0	0	*0*	**1**
Hourly Total	0	2	1	0	0	*3*	0	0	0	1	0	*1*	0	0	4	0	0	*4*	0	0	0	0	0	*0*	**8**
3:00 AM	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	1	0	0	*1*	0	0	0	0	0	*0*	**1**
3:15 AM	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	3	0	0	*3*	0	0	1	1	0	*2*	**5**
3:30 AM	0	0	0	0	0	*0*	0	0	0	2	0	*2*	0	0	2	0	0	*2*	0	0	0	0	0	*0*	**4**
3:45 AM	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	2	0	0	*2*	0	1	0	0	0	*1*	**3**
Hourly Total	0	0	0	0	0	*0*	0	0	0	2	0	*2*	0	0	8	0	0	*8*	0	1	1	1	0	*3*	**13**
4:00 AM	0	0	0	0	0	*0*	0	0	0	1	0	*1*	0	0	6	0	0	*6*	0	0	0	0	0	*0*	**7**
4:15 AM	0	1	1	0	0	*2*	0	0	0	1	0	*1*	0	1	5	0	0	*6*	0	1	0	0	0	*1*	**10**
4:30 AM	0	2	1	0	0	*3*	0	0	0	3	0	*3*	0	0	8	0	0	*8*	0	0	0	0	0	*0*	**14**
4:45 AM	0	0	1	0	0	*1*	0	0	0	3	0	*3*	0	0	8	1	0	*9*	0	1	0	0	0	*1*	**14**
Hourly Total	0	3	3	0	0	*6*	0	0	0	8	0	*8*	0	1	27	1	0	*29*	0	2	0	0	0	*2*	**45**
5:00 AM	0	1	2	0	0	*3*	0	0	0	3	0	*3*	0	1	6	0	0	*7*	0	0	1	1	0	*2*	**15**
5:15 AM	0	1	2	1	0	*4*	0	1	0	5	0	*6*	0	1	10	0	0	*11*	0	0	0	0	0	*0*	**21**
5:30 AM	0	3	5	0	0	*8*	0	2	2	10	0	*14*	0	0	19	0	2	*19*	0	4	0	0	0	*4*	**45**
5:45 AM	0	1	5	0	0	*6*	0	1	0	11	0	*12*	0	1	23	1	2	*25*	0	3	0	0	0	*3*	**46**
Hourly Total	0	6	14	1	0	*21*	0	4	2	29	0	*35*	0	3	58	1	4	*62*	0	7	1	1	0	*9*	**127**
6:00 AM	0	7	2	1	0	*10*	0	0	0	1	0	*1*	0	1	20	2	2	*23*	0	3	2	2	0	*7*	**41**
6:15 AM	0	14	5	1	0	*20*	0	0	1	10	0	*11*	0	0	25	1	0	*26*	0	1	1	1	0	*3*	**60**
6:30 AM	0	6	6	2	0	*14*	0	1	1	13	1	*15*	0	1	26	0	2	*27*	0	4	0	0	0	*4*	**60**
6:45 AM	0	23	7	2	0	*32*	0	0	2	13	0	*15*	0	1	31	3	2	*35*	0	3	1	1	0	*5*	**87**
Hourly Total	0	50	20	6	0	*76*	0	1	4	37	1	*42*	0	3	102	6	6	*111*	0	11	4	4	0	*19*	**248**
7:00 AM	0	28	30	4	0	*62*	0	0	1	11	0	*12*	0	2	38	3	0	*43*	0	3	1	1	0	*5*	**122**
7:15 AM	0	98	50	5	0	*153*	0	0	1	9	0	*10*	0	5	43	11	0	*59*	0	1	4	4	0	*9*	**231**
7:30 AM	0	124	32	13	0	*169*	0	1	0	23	0	*24*	0	9	35	9	0	*53*	0	2	4	6	0	*12*	**258**
7:45 AM	0	57	24	11	0	*92*	0	3	3	23	0	*29*	0	21	27	1	0	*49*	0	11	11	12	0	*34*	**204**
Hourly Total	0	307	136	33	0	*476*	0	4	5	66	0	*75*	0	37	143	24	0	*204*	0	17	20	23	0	*60*	**815**

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Epworth, IA Intersection of Center Ave and Jacoby Dr
Epworth Iowa
Wednesday, September 13, 2023

	Southbound Center Ave						Westbound Jacoby Dr						Northbound Center Ave						Eastbound Jacoby Dr						
Time	U Turns	Left Turns	Straight Through	Right Turns	Crosswalk Crossings	*Vehicle Approach Total*	U Turns	Left Turns	Straight Through	Right Turns	Crosswalk Crossings	*Vehicle Approach Total*	U Turns	Left Turns	Straight Through	Right Turns	Crosswalk Crossings	*Vehicle Approach Total*	U Turns	Left Turns	Straight Through	Right Turns	Crosswalk Crossings	*Vehicle Approach Total*	VEHICLE TOTAL
8:00 AM	0	18	16	6	0	*40*	0	0	9	5	0	*14*	0	22	19	0	4	*41*	0	13	19	20	0	*52*	**147**
8:15 AM	0	10	11	3	0	*24*	0	0	2	10	0	*12*	0	1	17	1	4	*19*	0	10	5	5	1	*20*	**75**
8:30 AM	0	25	10	0	0	*35*	0	0	1	3	0	*4*	0	1	21	5	2	*27*	0	2	2	3	1	*7*	**73**
8:45 AM	0	17	9	1	0	*27*	0	3	0	8	0	*11*	0	2	15	2	0	*19*	0	2	2	2	0	*6*	**63**
Hourly Total	0	70	46	10	0	*126*	0	3	12	26	0	*41*	0	26	72	8	10	*106*	0	27	28	30	2	*85*	**358**
9:00 AM	0	9	12	2	0	*23*	0	0	2	6	1	*8*	0	2	7	1	0	*10*	0	1	1	1	0	*3*	**44**
9:15 AM	0	8	9	1	0	*18*	0	2	3	6	0	*11*	0	1	16	0	2	*17*	0	2	3	3	0	*8*	**54**
9:30 AM	0	7	12	1	0	*20*	0	3	1	9	0	*13*	0	1	13	2	0	*16*	0	4	1	1	0	*6*	**55**
9:45 AM	0	9	12	0	0	*21*	0	2	2	6	0	*10*	0	1	20	1	0	*22*	0	0	0	0	0	*0*	**53**
Hourly Total	0	33	45	4	0	*82*	0	7	8	27	1	*42*	0	5	56	4	2	*65*	0	7	5	5	0	*17*	**206**
10:00 AM	0	5	6	3	0	*14*	0	0	0	9	0	*9*	0	0	13	2	0	*15*	0	0	0	0	0	*0*	**38**
10:15 AM	0	3	14	1	0	*18*	0	1	0	3	0	*4*	0	3	10	1	0	*14*	0	3	0	0	0	*3*	**39**
10:30 AM	0	8	12	1	0	*21*	0	0	0	6	0	*6*	0	4	14	1	2	*19*	0	1	8	8	0	*17*	**63**
10:45 AM	0	5	12	0	0	*17*	0	0	0	8	0	*8*	0	2	17	2	0	*21*	0	1	2	2	0	*5*	**51**
Hourly Total	0	21	44	5	0	*70*	0	1	0	26	0	*27*	0	9	54	6	2	*69*	0	5	10	10	0	*25*	**191**
11:00 AM	0	9	14	2	0	*25*	0	0	0	3	0	*3*	0	1	19	0	0	*20*	0	3	1	1	0	*5*	**53**
11:15 AM	0	8	9	1	0	*18*	0	2	2	5	0	*9*	0	3	10	4	2	*17*	0	1	1	1	0	*3*	**47**
11:30 AM	0	5	6	1	0	*12*	0	1	0	8	0	*9*	0	0	23	1	0	*24*	0	4	1	1	0	*6*	**51**
11:45 AM	0	3	18	0	0	*21*	0	1	0	8	0	*9*	0	1	20	0	0	*21*	0	1	1	1	0	*3*	**54**
Hourly Total	0	25	47	4	0	*76*	0	4	2	24	0	*30*	0	5	72	5	2	*82*	0	9	4	4	0	*17*	**205**
12:00 PM	0	7	23	0	0	*30*	0	0	1	3	0	*4*	0	2	14	0	0	*16*	0	2	3	3	0	*8*	**58**
12:15 PM	0	7	10	1	0	*18*	0	1	1	21	0	*23*	0	1	15	6	0	*22*	0	1	1	3	0	*5*	**68**
12:30 PM	0	3	16	3	0	*22*	0	1	1	9	0	*11*	0	2	12	3	0	*17*	0	2	0	1	0	*3*	**53**
12:45 PM	0	4	14	1	0	*19*	0	2	2	22	0	*26*	0	1	19	2	0	*22*	0	0	1	2	0	*3*	**70**
Hourly Total	0	21	63	5	0	*89*	0	4	5	55	0	*64*	0	6	60	11	0	*77*	0	5	5	9	0	*19*	**249**
1:00 PM	0	4	16	2	0	*22*	0	3	0	6	0	*9*	0	0	17	2	0	*19*	0	1	3	2	0	*6*	**56**
1:15 PM	0	5	15	0	0	*20*	0	0	1	35	0	*36*	0	2	14	2	0	*18*	0	1	0	1	0	*2*	**76**
1:30 PM	0	6	9	3	0	*18*	0	0	0	16	0	*16*	0	8	17	1	0	*26*	0	2	0	1	0	*3*	**63**
1:45 PM	0	11	12	4	0	*27*	0	2	0	4	0	*6*	0	6	11	2	0	*19*	0	4	1	2	0	*7*	**59**
Hourly Total	0	26	52	9	0	*87*	0	5	1	61	0	*67*	0	16	59	7	0	*82*	0	8	4	6	0	*18*	**254**
2:00 PM	0	15	14	5	0	*34*	0	3	4	50	0	*57*	0	6	27	1	1	*34*	0	7	7	11	0	*25*	**150**
2:15 PM	0	7	21	5	0	*33*	0	8	4	109	0	*121*	0	8	70	6	1	*84*	0	4	6	16	0	*26*	**264**
2:30 PM	0	11	27	2	0	*40*	0	2	0	18	0	*20*	0	4	26	4	0	*34*	0	4	1	5	0	*10*	**104**
2:45 PM	0	18	18	2	0	*38*	0	2	0	15	0	*17*	0	2	23	4	0	*29*	0	0	1	0	0	*1*	**85**
Hourly Total	0	51	80	14	0	*145*	0	15	8	192	0	*215*	0	20	146	15	2	*181*	0	15	15	32	0	*62*	**603**
3:00 PM	0	36	25	3	0	*64*	0	0	1	12	0	*13*	0	0	22	4	1	*26*	0	2	2	2	0	*6*	**109**
3:15 PM	0	20	28	3	0	*51*	0	2	0	17	0	*19*	0	1	20	1	0	*22*	0	0	3	2	0	*5*	**97**
3:30 PM	0	11	37	0	0	*48*	0	3	0	11	0	*14*	0	5	23	2	1	*30*	0	0	0	3	0	*3*	**95**
3:45 PM	0	12	37	3	0	*52*	0	6	2	14	0	*22*	0	0	30	5	0	*35*	0	1	2	4	0	*7*	**116**
Hourly Total	0	79	127	9	0	*215*	0	11	3	54	0	*68*	0	6	95	12	2	*113*	0	3	7	11	0	*21*	**417**

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Epworth, IA Intersection of Center Ave and Jacoby Dr
Epworth Iowa
Wednesday, September 13, 2023

	Southbound Center Ave						Westbound Jacoby Dr						Northbound Center Ave						Eastbound Jacoby Dr						
Time	U Turns	Left Turns	Straight Through	Right Turns	Crosswalk Crossings	*Vehicle Approach Total*	U Turns	Left Turns	Straight Through	Right Turns	Crosswalk Crossings	*Vehicle Approach Total*	U Turns	Left Turns	Straight Through	Right Turns	Crosswalk Crossings	*Vehicle Approach Total*	U Turns	Left Turns	Straight Through	Right Turns	Crosswalk Crossings	*Vehicle Approach Total*	VEHICLE TOTAL
4:00 PM	0	25	40	3	0	*68*	0	1	1	19	0	*21*	0	0	24	1	1	*25*	0	9	2	3	0	*14*	**128**
4:15 PM	0	21	34	3	0	*58*	0	2	3	48	0	*53*	0	1	27	1	1	*29*	0	7	1	2	0	*10*	**150**
4:30 PM	0	13	26	3	0	*42*	0	0	0	20	0	*20*	0	3	39	1	2	*43*	0	9	2	9	0	*20*	**125**
4:45 PM	0	14	53	5	0	*72*	0	2	0	14	0	*16*	0	2	22	1	1	*25*	0	4	0	1	0	*5*	**118**
Hourly Total	0	73	153	14	0	*240*	0	5	4	101	0	*110*	0	6	112	4	5	*122*	0	29	5	15	0	*49*	**521**
5:00 PM	0	6	42	3	0	*51*	0	3	1	5	0	*9*	0	3	27	2	2	*32*	0	6	1	3	0	*10*	**102**
5:15 PM	0	24	43	5	0	*72*	0	3	5	13	0	*21*	0	1	25	2	1	*28*	0	2	3	3	0	*8*	**129**
5:30 PM	0	15	33	2	1	*50*	0	5	4	45	0	*54*	0	2	21	2	1	*25*	0	3	4	3	0	*10*	**139**
5:45 PM	0	18	44	1	0	*63*	0	2	3	12	0	*17*	0	5	29	0	1	*34*	0	0	2	6	0	*8*	**122**
Hourly Total	0	63	162	11	1	*236*	0	13	13	75	0	*101*	0	11	102	6	5	*119*	0	11	10	15	0	*36*	**492**
6:00 PM	0	15	17	1	0	*33*	0	4	3	3	2	*10*	0	3	26	3	1	*32*	0	3	3	3	0	*9*	**84**
6:15 PM	0	11	17	1	0	*29*	0	1	0	18	0	*19*	0	2	29	4	0	*35*	0	1	1	1	1	*3*	**86**
6:30 PM	0	3	27	1	0	*31*	0	1	0	16	0	*17*	0	2	16	3	1	*21*	0	4	0	2	0	*6*	**75**
6:45 PM	0	9	14	1	0	*24*	0	0	1	26	0	*27*	0	2	9	3	2	*14*	0	2	0	1	0	*3*	**68**
Hourly Total	0	38	75	4	0	*117*	0	6	4	63	2	*73*	0	9	80	13	4	*102*	0	10	4	7	1	*21*	**313**
7:00 PM	0	4	16	2	0	*22*	0	2	1	8	2	*11*	0	1	10	3	2	*14*	0	0	0	0	0	*0*	**47**
7:15 PM	0	10	14	0	0	*24*	0	2	0	14	1	*16*	0	0	8	2	3	*10*	0	0	0	6	0	*6*	**56**
7:30 PM	0	9	11	1	0	*21*	0	1	1	10	0	*12*	0	0	19	2	0	*21*	0	2	0	0	0	*2*	**56**
7:45 PM	0	4	13	2	0	*19*	0	1	2	3	0	*6*	0	0	26	1	0	*27*	0	0	1	0	0	*1*	**53**
Hourly Total	0	27	54	5	0	*86*	0	6	4	35	3	*45*	0	1	63	8	5	*72*	0	2	1	6	0	*9*	**212**
8:00 PM	0	7	10	4	0	*21*	0	0	2	4	0	*6*	0	0	22	0	0	*22*	0	2	0	1	0	*3*	**52**
8:15 PM	0	2	15	2	0	*19*	0	1	1	1	0	*3*	0	2	10	0	0	*12*	0	0	1	0	0	*1*	**35**
8:30 PM	0	1	16	5	0	*22*	0	1	0	6	0	*7*	0	0	8	2	0	*10*	0	3	0	1	0	*4*	**43**
8:45 PM	0	7	9	1	0	*17*	0	0	1	0	0	*1*	0	0	8	0	0	*8*	0	0	0	0	0	*0*	**26**
Hourly Total	0	17	50	12	0	*79*	0	2	4	11	0	*17*	0	2	48	2	0	*52*	0	5	1	2	0	*8*	**156**
9:00 PM	0	1	9	2	0	*12*	0	0	1	1	0	*2*	0	0	7	0	0	*7*	0	1	1	0	0	*2*	**23**
9:15 PM	0	1	6	0	0	*7*	0	0	0	1	0	*1*	0	0	3	0	0	*3*	0	0	1	0	0	*1*	**12**
9:30 PM	0	1	8	1	0	*10*	0	0	0	4	0	*4*	0	0	1	0	0	*1*	0	0	1	0	0	*1*	**16**
9:45 PM	0	1	1	0	0	*2*	0	0	0	0	0	*0*	0	0	3	0	0	*3*	0	0	0	0	0	*0*	**5**
Hourly Total	0	4	24	3	0	*31*	0	0	1	6	0	*7*	0	0	14	0	0	*14*	0	1	3	0	0	*4*	**56**
10:00 PM	0	1	5	1	0	*7*	0	0	0	1	0	*1*	0	0	0	0	0	*0*	0	1	0	0	0	*1*	**9**
10:15 PM	0	1	5	1	0	*7*	0	0	0	0	0	*0*	0	0	1	0	0	*1*	0	1	1	0	0	*2*	**10**
10:30 PM	0	2	4	0	0	*6*	0	0	0	1	0	*1*	0	0	3	0	0	*3*	0	0	0	0	0	*0*	**10**
10:45 PM	0	0	3	1	0	*4*	0	0	0	1	0	*1*	0	0	2	0	0	*2*	0	0	0	0	0	*0*	**7**
Hourly Total	0	4	17	3	0	*24*	0	0	0	3	0	*3*	0	0	6	0	0	*6*	0	2	1	0	0	*3*	**36**
11:00 PM	0	1	1	0	0	*2*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	**2**
11:15 PM	0	0	5	1	0	*6*	0	0	0	0	0	*0*	0	0	1	0	0	*1*	0	0	0	0	0	*0*	**7**
11:30 PM	0	3	0	0	0	*3*	0	0	0	3	0	*3*	0	0	0	0	0	*0*	0	0	0	0	0	*0*	**6**
11:45 PM	0	0	1	0	0	*1*	0	0	0	0	0	*0*	0	0	1	0	0	*1*	0	0	0	0	0	*0*	**2**
Hourly Total	0	4	7	1	0	*12*	0	0	0	3	0	*3*	0	0	2	0	0	*2*	0	0	0	0	0	*0*	**17**
DAILY TOTAL	**0**	**924**	**1225**	**153**	**1**	***2302***	**0**	**91**	**80**	**907**	**7**	***1078***	**0**	**166**	**1384**	**133**	**49**	***1683***	**0**	**177**	**129**	**181**	**3**	***487***	**5550**
Cars	0	913	851	138	1	*1902*	0	91	75	892	7	*1058*	0	157	1347	133	42	*1637*	0	173	71	170	3	*414*	**5355**
Heavy Vehicles	0	11	24	15	0	*50*	0	0	5	15	0	*20*	0	9	37	0	0	*46*	0	4	9	11	0	*24*	**140**
Heavy Vehicle %	0.00%	1.19%	1.96%	9.80%	0.00%	*2.17%*	0.00%	0.00%	6.25%	1.65%	0.00%	*1.86%*	0.00%	5.42%	2.67%	0.00%	0.00%	*2.73%*	0.00%	2.26%	6.98%	6.08%	0.00%	*4.93%*	**2.52%**

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Epworth Iowa
Wednesday, September 13, 2023

AM Peak Hour

Time	Southbound U Turns	Southbound Left Turns	Southbound Straight Through	Southbound Right Turns	Southbound Crosswalk Crossings	*Southbound Vehicle Approach Total*	Westbound U Turns	Westbound Left Turns	Westbound Straight Through	Westbound Right Turns	Westbound Crosswalk Crossings	*Westbound Vehicle Approach Total*	Northbound U Turns	Northbound Left Turns	Northbound Straight Through	Northbound Right Turns	Northbound Crosswalk Crossings	*Northbound Vehicle Approach Total*	Eastbound U Turns	Eastbound Left Turns	Eastbound Straight Through	Eastbound Right Turns	Eastbound Crosswalk Crossings	*Eastbound Vehicle Approach Total*	VEHICLE TOTAL
7:15 AM	0	98	50	5	0	*153*	0	0	1	9	0	*10*	0	5	43	11	0	*59*	0	1	4	4	0	*9*	**231**
7:30 AM	0	124	32	13	0	*169*	0	1	0	23	0	*24*	0	9	35	9	0	*53*	0	2	4	6	0	*12*	**258**
7:45 AM	0	57	24	11	0	*92*	0	3	3	23	0	*29*	0	21	27	1	0	*49*	0	11	11	12	0	*34*	**204**
8:00 AM	0	18	16	6	0	*40*	0	0	9	5	0	*14*	0	22	19	0	4	*41*	0	13	19	20	0	*52*	**147**
Peak Hour Total	0	297	122	35	0	*454*	0	4	13	60	0	*77*	0	57	124	21	4	*202*	0	27	38	42	0	*107*	**840**
PHF	0.000	0.599	0.610	0.673	0.000	*0.672*	0.000	0.333	0.361	0.652	0.000	*0.664*	0.000	0.648	0.721	0.477	0.250	*0.856*	0.000	0.519	0.500	0.525	0.000	*0.514*	**0.814**

PM Peak Hour

Time	Southbound U Turns	Southbound Left Turns	Southbound Straight Through	Southbound Right Turns	Southbound Crosswalk Crossings	*Southbound Vehicle Approach Total*	Westbound U Turns	Westbound Left Turns	Westbound Straight Through	Westbound Right Turns	Westbound Crosswalk Crossings	*Westbound Vehicle Approach Total*	Northbound U Turns	Northbound Left Turns	Northbound Straight Through	Northbound Right Turns	Northbound Crosswalk Crossings	*Northbound Vehicle Approach Total*	Eastbound U Turns	Eastbound Left Turns	Eastbound Straight Through	Eastbound Right Turns	Eastbound Crosswalk Crossings	*Eastbound Vehicle Approach Total*	VEHICLE TOTAL
2:00 PM	0	15	14	5	0	*34*	0	3	4	50	0	*57*	0	6	27	1	1	*34*	0	7	7	11	0	*25*	**150**
2:15 PM	0	7	21	5	0	*33*	0	8	4	109	0	*121*	0	8	70	6	1	*84*	0	4	6	16	0	*26*	**264**
2:30 PM	0	11	27	2	0	*40*	0	2	0	18	0	*20*	0	4	26	4	0	*34*	0	4	1	5	0	*10*	**104**
2:45 PM	0	18	18	2	0	*38*	0	2	0	15	0	*17*	0	2	23	4	0	*29*	0	0	1	0	0	*1*	**85**
Peak Hour Total	0	51	80	14	0	*145*	0	15	8	192	0	*215*	0	20	146	15	2	*181*	0	15	15	32	0	*62*	**603**
PHF	0.000	0.708	0.741	0.700	0.000	*0.906*	0.000	0.469	0.500	0.440	0.000	*0.444*	0.000	0.625	0.521	0.625	0.500	*0.539*	0.000	0.536	0.536	0.500	0.000	*0.596*	**0.571**

Daily Volumes

Southbound					
Total Vehicles On Leg		4420			
Vehicles Entering Intersection	1952	Vehicles Exiting Intersection	2468		
Cars	138	851	913	0	1
Heavy	15	24	11	0	0
Total	**153**	**875**	**924**	**0**	**1**

Eastbound				
Total Vehicles on Leg 837	Vehicles Entering Intersection 438	Vehicles Exiting Intersection 399		
Cars	Heavy	**Total**		
3	0	**3**		
0	0	**0**		
173	4	**177**		
71	9	**80**		
170	11	**181**		

Westbound				
Cars	Heavy	**Total**		
892	15	**907**		
75	5	**80**		
91	0	**91**		
0	0	**0**		
7	0	**7**		
Vehicles Entering Intersection 1078	Vehicles Exiting Intersection 1137	Total Vehicles on Leg 2215		

Northbound				
Cars	42	0	157	1347	133
Heavy	0	0	9	37	0
Total	**42**	**0**	**166**	**1384**	**133**
Vehicles Entering Intersection	1683	Vehicles Exiting Intersection	1147		
Total Vehicles On Leg		2830			

J

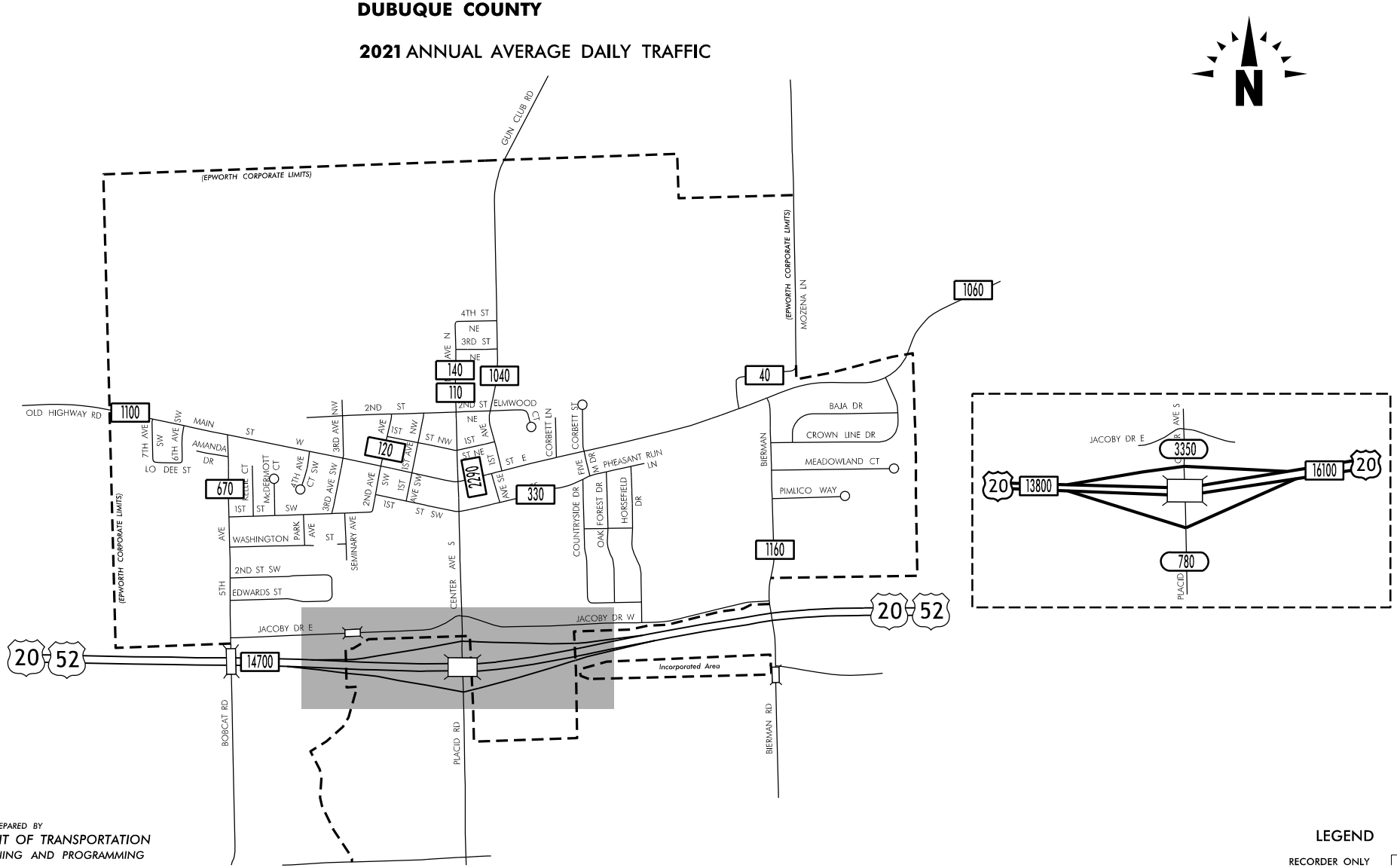
IOWA DOT

TRAFFIC FLOW MAP OF

EPWORTH

DUBUQUE COUNTY

2021 ANNUAL AVERAGE DAILY TRAFFIC



PREPARED BY
IOWA DEPARTMENT OF TRANSPORTATION
DIVISION OF PLANNING AND PROGRAMMING

LEGEND

RECORDER ONLY

L

County:	Dubuque	Prepared By:	Jason Wenger
Location:	Epworth	Date Prepared:	8/14/2024
Proposed Improvements:	Single-Lane Roundabout at Center Avenue & Jacoby Drive		
Estimated Improvement Cost:	$ 1,138,525		
Inflation on Crash Costs:	4%	Annual Maintenance: (% of Improvement Cost)	2%
Discount Rate:	4%		
Estimated Service Life:	20	Annual Maintenance Cost:	$ 22,771
Method Choice:	CRF Method		

The Crash Reduction Factor (CRF) Method applies one to three CRFs to historical crashes to estimate reductions in future crashes. Crash Modification Factors (CMFs) can be converted to CRFs. For additional information, click the "Learn More" button.

Crash Reduction Factor (CRF) Method

Traffic Growth Factor:	1%
Number of CRFs:	1
Years of Crash History:	5

Combined CRF (Dominant Common Residuals Method)

Iowa DOT's preferred methodology for combining CRFs is Dominant Common Residuals, since it is more conservative than the other options.

	CRF 1:	Combined CRF
CRF Value (%)	45	**45.0**

Crash Severity	Rounded Societal Costs	Crash History (Total):	CRF (from above)	Crash History - Annual Avg	Crashes Saved Annually
Fatal (K)	$ 4,200,000	0	45.0	**0.00**	**0.00**
Serious Injury (A)	$ 4,200,000	0	45.0	**0.00**	**0.00**
Minor Injury (B)	$ 280,000	0	45.0	**0.00**	**0.00**
Possible/Unknown Injury (C)	$ 130,000	0	45.0	**0.00**	**0.00**
Property Damage Only (O)	$ 20,000	1	45.0	**0.20**	**0.09**

Crash Severity	Annual Societal Benefit
Fatal (K)	**$ -**
Serious Injury (A)	**$ -**
Minor Injury (B)	**$ -**
Possible/Unknown Injury (C)	**$ -**
Property Damage Only (O)	**$ 1,800**

Total Benefits and Costs

		Implementation Cost	$ 1,138,525
		Present Value of Maint.	$ 309,459
Present Value Benefits (Societal Benefits)	$ 26,587	Present Value Costs (Impl. and Maint. Costs)	$ 1,447,984
Present Value Net Return	$ (1,421,396)		
Benefit Cost Ratio	**0.02**		

Form continues on next page

L

County: Dubuque
Location: Epworth
Prepared By: Jason Wenger
Date Prepared: 8/14/2024

No Input Necessary - No Custom Values In Use

General Customizations

No change to Crash Costs

No change to Discount Rate

No change to Maintenance Costs

Method-Specific Customizations

No change to Traffic Growth Rate

No change to Crash History

Application for

Transportation Safety Improvement Program

Iowa Department of Transportation

North Fifteenth Street Corridor Improvements –
1st Ave N to 20th Ave N

Fort Dodge, Iowa

August 14, 2024

A

Rev. 07/23

Application for SITE-SPECIFIC TSIP FUNDS

GENERAL INFORMATION **DATE:** August 14, 2024

Location / Title of Project North 15th Street Corridor Improvements

Applicant City of Fort Dodge

Contact Person Austin Morrow Title Civil Engineer

Complete Mailing Address 819 First Avenue South
Fort Dodge, IA 50501

Phone (515) 576-4551 E-Mail amorrow@fortdodgeiowa.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	$	1,403,500
Total Project Cost	$	5,981,000
Safety Funds Requested	**$**	**500,000**

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
2017083511	N 15th St & 2nd Ave N	☐	☒	0.49	0.02030
2017083550	N 15th St & 7th Ave N	☐	☒	0.93	0.06499
2017145020	N 15th St & 8th Ave N	☐	☒	0.41	-.00368
2017145021	N 15th St & 10th Ave N	☐	☒	0.80	0.03276

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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 Fort Dodge

Signed: Austin Morrow 8/13/2024

Signature Date Signed

Austin Morrow

Printed Name

Attest: Melissa Bock 8/13/2024

Signature Date Signed

Melissa Bock

Printed Name

A

RESOLUTION NO. 24-07-165

A RESOLUTION AUTHORIZING THE SUBMITTAL OF AN APPLICATION TO THE IOWA DEPARTMENT OF TRANSPORTATION FOR TRAFFIC SAFETY IMPROVEMENT PROGRAM (TSIP) FUNDING FOR THE NORTH 15TH STREET CORRIDOR IMPROVEMENTS PROJECT WHICH INCLUDES CONVERSION OF THE CORRIDOR TO A THREE-LANE CONFIGURATION AND FURTHER APPROVING THE APPLICATION WHICH OBLIGATES THE CITY TO MATCHING FUNDS FOR THE CONSTRUCTION OF SAID PROJECT

WHEREAS, the Iowa Department of Transportation has established the TSIP and provides funding for locations where vehicular safety is a concern and documented; and

WHEREAS, the N 15th St Conversion Project has been identified where vehicular safety and traffic flow could be improved and funded by TSIP; and

WHEREAS, the proposed improvements, including conversion to a three-lane corridor and traffic signal modifications/replacements, will help reduce crashes in the project area.

NOW THEREFORE, BE IT RESOLVED BY THE CITY COUNCIL OF FORT DODGE, IOWA, AS FOLLOWS:

1. The City Council supports and approves the application for Traffic Safety Improvement Program (TSIP) funding.
2. The City Council hereby commits the additional City funds necessary for construction of the project beyond any TSIP funding.
3. The City Council hereby commits to accepting and maintaining these improvements.
4. The Mayor is hereby authorized to execute the application on behalf of the City.

PASSED AND APPROVED this 22nd day of July, 2024.

AYE: Flattery, Nelson, Secor, Alstott, and Crimmins

NAY: None

OTHER: Absent: McCaleb and Schuur

David Flattery, Mayor Pro Tem

Attest:

Dawn Siebken, City Clerk

1. EXISTING CONDITIONS

The N 15th St corridor is a four-lane urban street with no parking (44' wide) allowed on each side of the street. This corridor extends from 4th Ave S to 28th Ave N and has a posted speed limit of 35 miles per hour (mph). A mixture of commercial and residential land exists throughout the entire corridor. Pavement condition for the corridor is in relatively good condition with areas of cracking. For this project, improvements are recommended for the corridor from 2nd Ave N to 20th Ave N (1.25 miles). The intersections along the project corridor are mostly unsignalized with the only exception being the intersections of N 15th St and 2nd Ave N, 6th Ave N, 7th Ave N, and 20th Ave N, which are signalized intersections. Signals in the corridor are not MUTCD compliant due to pedestrian signal heads not having countdown timers, and some pedestrian pushbuttons are not located next to sidewalks.

Due to safety and operational concerns at the 1st Ave S & S 15th St intersection, a traffic study was performed for both corridors in 2016. Safety and operational analyses indicated that converting 15th St to three lanes for the corridor would improve safety without significant impacts to operations. The study recommended improvements were included in the TSIP application.

2. TRAFFIC DATA

The Iowa DOT has collected traffic volume data for the year 2023 in Fort Dodge. According to the data collected by the Iowa DOT, this roadway segment experiences an Annual average daily traffic of 6,400-7,700 vehicles.

3. CRASH HISTORY

For the five plus years of crash analysis (2019-July 2024), this corridor has experienced 155 crashes, resulting in a crash rate of over 2,000 crashes per hundred million vehicle miles (HMVM) traveled. The crashes along N 15th St consisted of mostly broadside, sideswipe, and rear-end crashes. This corridor had 33 occurrences of sideswipe crashes in the same direction, which is usually common with narrow travel lanes.

This corridor experienced a total of 27 crashes at signalized intersections and 21 crashes at a stop-controlled intersection. Over 40% (64) of the total crashes (155) were right angle crashes, oncoming left turn and rear-end crashes accounted for about 15% (24) of the total crashes that also included 33 sideswipe crashes in the same direction. This corridor experienced 0 major injury crash, 11 minor injury crashes and 18 possible injury crashes. There were also eight fixed object struck crashes occurring throughout the corridor.

4. PROPOSED IMPROVEMENTS

The proposed safety improvements for this corridor include converting the current four-lane road to three lanes with a center two-way left turn lane (TWLTL). The traffic signals will be replaced, including increasing the distance from the signal poles to the traveled way, and installation of communication network. Pavement patching and replacement will occur along the corridor to improve the potential safety for bicyclists. Additional aspects of the project include sidewalk replacement/construction and associated storm sewer modifications.

The expected safety benefits for the proposed improvements include the following:

- Reduction in northbound and southbound left turn related crashes due to aligning the left turn lanes to improve sight distance and implementation of protected/permissive left turn phasing.
- Reduction in rear-end crashes on N 15th St approaches to the intersections and along the corridor due to the creation of left turn lanes for northbound and southbound traffic, creation of the center TWLTL, and implementation of coordinated signal timings and remote monitoring of operations.
- Reduction in sideswipe related crashes due to the creation of a center TWLTL and reduction to a single travel lane.

- Reduction of the potential for vehicles colliding with the signal poles and other fixed objects due to the signal poles being relocated further from the traveled way and the travel lanes being moved further from the existing curb along N 15th St.

The City of Fort Dodge previously submitted, received TSIP funding for, and converted 15th St south of 1st Ave N. The City received funding for the previous applications in 2017 and 2018 with previous construction project completed in 2021. The City is committed to continuing the conversion of N 15th St to three lanes along the entire corridor. This project is the third TSIP funding application submittal for this corridor. Approving this application will assist the City in expediting the conversion of N 15th St.

The Iowa Department of Transportation Systems Planning and Traffic and Safety Bureaus prepared a report titled *Statewide Screening for Potential Lane Reconfiguration*. This report identified N 15th St from Central Ave to 20th Ave N as a potential location for conversion from four lanes to three lanes.

To provide detailed project information on the application exhibits for the 1.3 mile long project, application documents G (plan view), H (aerial photograph), and K (traffic signal layout) have been compiled into one set of exhibits.

ENGINEERS CONCEPT OPINION OF PROBABLE PROJECT COSTS

SNYDER & ASSOCIATES

N 15TH STREET
1ST AVE N TO 20TH AVE -FULL RECON THRU 2ND AVE N, PCC PATCHING, HMA MILL AND FILL
FORT DODGE, IA
8/9/2024

ITEM #	DESCRIPTION	QUANTITY	UNIT	UNIT PRICE	EXTENDED PRICE	COMMENTS
	EARTHWORK					
2.1	Clearing and Grubbing	1	LS	$ 1,000.00	$ 1,000	
2.2	Excavation, Class 10, Class 12, or Class 13	925	CY	$ 20.00	$ 18,500	Assume 0.5' depth over subbase area
2.3	Subgrade Preparation, 12-Inch Depth	5550	SY	$ 5.50	$ 30,525	
2.4	Subbase, Modified, 6-Inch Depth	5550	SY	$ 12.00	$ 66,600	
2.5	Compaction Testing	1	LS	$ 3,000.00	$ 3,000	
	SEWERS AND DRAINS					
4.1	Storm Sewer, Trenched, RCP, 15-Inch Dia.	880	LF	$ 90.00	$ 79,200	
4.2	Storm Sewer, Trenched, RCP, 24-Inch Dia.	295	LF	$ 95.00	$ 28,025	
4.3	Storm Sewer, Trenched, RCP, 36-Inch Dia.	16	LF	$ 200.00	$ 3,200	
4.4	Removal of Storm Sewer, RCP, 36-Inch Dia. or less	772	LF	$ 20.00	$ 15,440	
4.5	Subdrain, Corrugated PVC, 6-Inch Dia.	1560	LF	$ 20.00	$ 31,200	
4.6	Subdrain Cleanout, Type A-2, 6-Inch Dia.	8	EA	$ 500.00	$ 4,000	
4.7	Subdrain Outlets and Connections	8	EA	$ 200.00	$ 1,600	
	WATER MAIN AND APPURTENANCES					
5.1	Water Main, Trenched, PVC C900, 8-Inch Dia	285	LF	$ 85.00	$ 24,225	Replaces 1959 6" Cast Iron main
5.2	Water Service w/ Corp, Stop & Box, Copper, 1" Dia	1	EA	$ 1,200.00	$ 1,200	
5.3	Water Service w/ Corp, Stop & Box, Copper, 2" Dia	2	EA	$ 1,800.00	$ 3,600	
5.4	Water Service Pipe, Copper Type K, 1" Dia	60	LF	$ 50.00	$ 3,000	
5.5	Water Service Pipe, Copper Type K, 2" Dia	215	LF	$ 70.00	$ 15,050	Includes replacing 1953 2" Cast Iron main/service
5.6	Water Main Removal, 10 inch and less	285	LF	$ 25.00	$ 7,125	
5.7	Fittings, Ductile Iron	2	EA	$ 1,500.00	$ 3,000	
5.8	Valve Box Adjustment, Minor	6	EA	$ 150.00	$ 900	
5.9	Fire Hydrant Assembly	2	EA	$ 8,500.00	$ 17,000	
5.10	Fire Hydrant Assembly Removal	2	EA	$ 1,500.00	$ 3,000	
	STRUCTURES FOR SANITARY AND STORM					
6.1	Manhole, SW-301, 48-Inch Dia.	6	EA	$ 6,500.00	$ 39,000	Brick manholes within patch or paved portions
6.2	Manhole, SW-401, 48-Inch Dia.	5	EA	$ 4,500.00	$ 22,500	
6.3	Manhole, SW-401, 60-Inch Dia.	2	EA	$ 6,500.00	$ 13,000	
6.4	Manhole, SW-401, 84-Inch Dia.	1	EA	$ 12,000.00	$ 12,000	
6.5	Intake, SW-507	24	EA	$ 5,500.00	$ 132,000	
6.6	Intake, SW-541	3	EA	$ 8,000.00	$ 24,000	2nd Ave N Intersection
6.7	Manhole Adjustment, Minor	19	EA	$ 1,700.00	$ 32,300	
6.8	Remove Manhole	8	EA	$ 800.00	$ 6,400	
6.9	Remove Intake	27	EA	$ 800.00	$ 21,600	
	STREETS AND RELATED WORK					
7.1	Pavement, PCC, 9-Inch Depth	4880	SY	$ 110.00	$ 536,800	
7.2	PCC Pavement Samples and Testing	1	LS	$ 10,000.00	$ 10,000	
7.3	HMA Pavement Samples and Testing	1	LS	$ 5,000.00	$ 5,000	
7.4	HMA Overlay, 3-Inch Depth	950	TON	$ 110.00	$ 104,500	147 pcf
7.5	HMA Interlayer, 1-Inch Depth	320	TON	$ 125.00	$ 40,000	150 pcf
7.6	Removal of Sidewalk	650	SY	$ 10.00	$ 6,500	
7.7	Removal of Driveway	215	SY	$ 10.00	$ 2,150	
7.8	Sidewalk, PCC, 4-Inch Depth	870	SY	$ 60.00	$ 52,200	
7.9	Sidewalk, PCC, 6-Inch Depth	405	SY	$ 75.00	$ 30,375	
7.10	Detectable Warning	754	SF	$ 60.00	$ 45,240	
7.11	Driveway, Paved, Type A, 7-Inch Depth	135	SY	$ 75.00	$ 10,125	

ENGINEERS CONCEPT OPINION OF PROBABLE PROJECT COSTS

SNYDER & ASSOCIATES

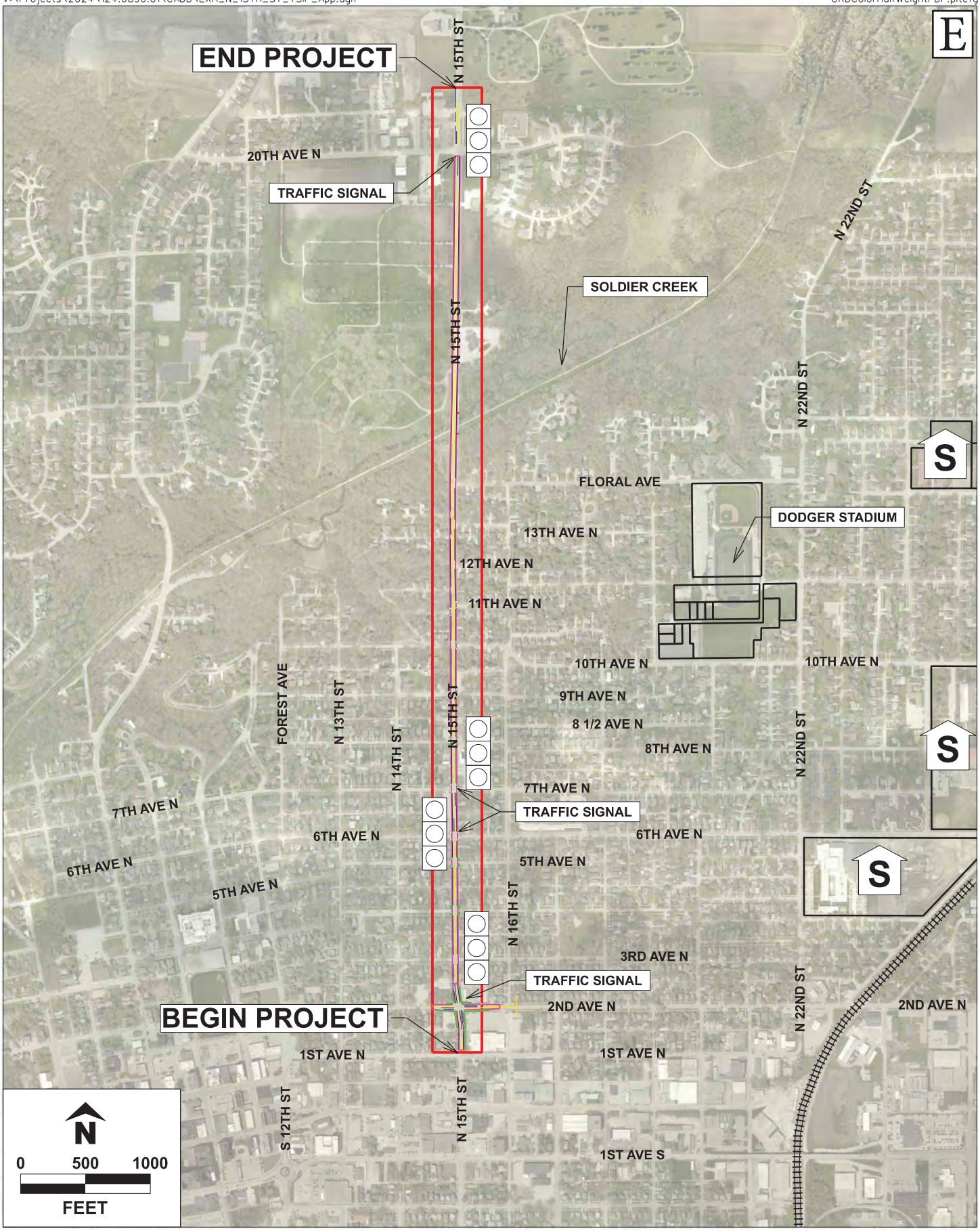
N 15TH STREET
1ST AVE N TO 20TH AVE -FULL RECON THRU 2ND AVE N, PCC PATCHING, HMA MILL AND FILL
FORT DODGE, IA
8/9/2024

ITEM #	DESCRIPTION	QUANTITY	UNIT	UNIT PRICE	EXTENDED PRICE	COMMENTS
7.12	Full Depth Patches, 9-Inch Depth	2350	SY	$ 130.00	$ 305,500	plus 15% w/removal & baskets
7.13	Diamond Grinding	22360	SY	$ 7.50	$ 167,700	5,122'x43' wide less bridge&approaches(442')
7.14	Milling, 4-Inch Depth	5700	SY	$ 10.00	$ 57,000	1,250' x 41'
7.15	Pavement Removal	4800	SY	$ 5.50	$ 26,400	
7.16	Bridge Approach Pavement, BR-201	690	SY	$ 250.00	$ 172,500	
	TRAFFIC CONTROL					
8.1	Painted Pavement Markings, Durable	270	STA	$ 165.00	$ 44,550	
8.2	Painted Symbols and Legends, Durable	78	EA	$ 600.00	$ 46,800	
8.3	Grooves Cut for Pavement Markings	270	STA	$ 100.00	$ 27,000	
8.4	Grooves Cut for Symbols and Legends	78	EA	$ 175.00	$ 13,650	
8.5	Temporary Traffic Control	1	LS	$ 175,000.00	$ 175,000	Rounded, 6% of subtotal
8.6	Traffic Signals and Equipment, N 15th Ave and 2nd Ave N Intersection	1	LS	$ 300,000.00	$ 300,000	
8.7	Traffic Signals and Equipment, N 15th Ave and 6th Ave N Intersection	1	LS	$ 250,000.00	$ 250,000	
8.8	Traffic Signals and Equipment, N 15th Ave and 7th Ave N Intersection	1	LS	$ 250,000.00	$ 250,000	
8.9	Traffic Signals and Equipment, N 15th Ave and 20th Ave N Intersection	1	LS	$ 50,000.00	$ 50,000	
8.10	Fiber Optic Interconnect	7300	LF	$ 30.00	$ 219,000	N Central to 20th Ave N
8.11	Light Pole, Removal	2	EA	$ 1,000.00	$ 2,000	
8.12	Light Pole and Installation	2	EA	$ 7,000.00	$ 14,000	
	SITE WORK AND LANDSCAPING					
9.1	Conventional Seeding, Seeding, Fertilizing, and BFM Mulching, Type 1	0.5	AC	$ 6,000.00	$ 3,000	
9.2	SWPPP Management	1	LS	$ 4,000.00	$ 4,000	
9.3	Erosion Control	1	LS	$ 5,000.00	$ 5,000	
9.4	Removal of Fence	40	LF	$ 5.00	$ 200	
9.5	Combined Concrete Sidewalk and Retaining Wall	6	CY	$ 1,400.00	$ 8,400	
9.6	Safety Rail	40	LF	$ 150.00	$ 6,000	
	DEMOLITION					
10.1	Demolition Work, Retaining Wall Removal	1	LS	$ 2,000.00	$ 2,000	
	MISCELLANEOUS					
11.1	Mobilization	1	LS	$ 230,000.00	$ 230,000	Rounded, 6% of subtotal,
11.2	Concrete Washout	1	LS	$ 1,000.00	$ 1,000	

Subtotal:	$	3,887,000	Rounded
Contingency (15%):	$	583,000	Rounded
Inflation (5% per Year, 1 yrs):	$	224,000	Rounded, 2024 - 2025
TOTAL CONSTRUCTION COST:	$	4,694,000	
Other Project Costs			
Right of Way:	$	348,000	$12 per SF and Assessed value + 33% for Total Take
Engineering, Construction, and Administration (20%):	$	939,000	Rounded
TOTAL PROJECT COST :	**$**	**5,981,000**	

PROPOSED PROJECT SCHEDULE
N 15th STREET CORRIDOR IMPROVEMENTS –
1ST AVE N TO 20TH AVE N
FORT DODGE, IOWA

August 2024	TSIP Application
December 2024	Iowa DOT Approval TSIP
January 2025	TSIP Agreement
January – December 2025	Project Design and ROW Acquisition
February 2026	Project Letting
April – November 2026	Project Construction



SNYDER & ASSOCIATES

CITY OF FORT DODGE

LOCATION MAP

N 15TH STREET IMPROVEMENTS | FORT DODGE, IOWA | 08/14/2024
(1ST AVE N TO 20TH AVE N)

PHOTOS
N 15th STREET CORRIDOR IMPROVEMENTS –
1ST AVE N TO 20TH AVE N
FORT DODGE, IOWA

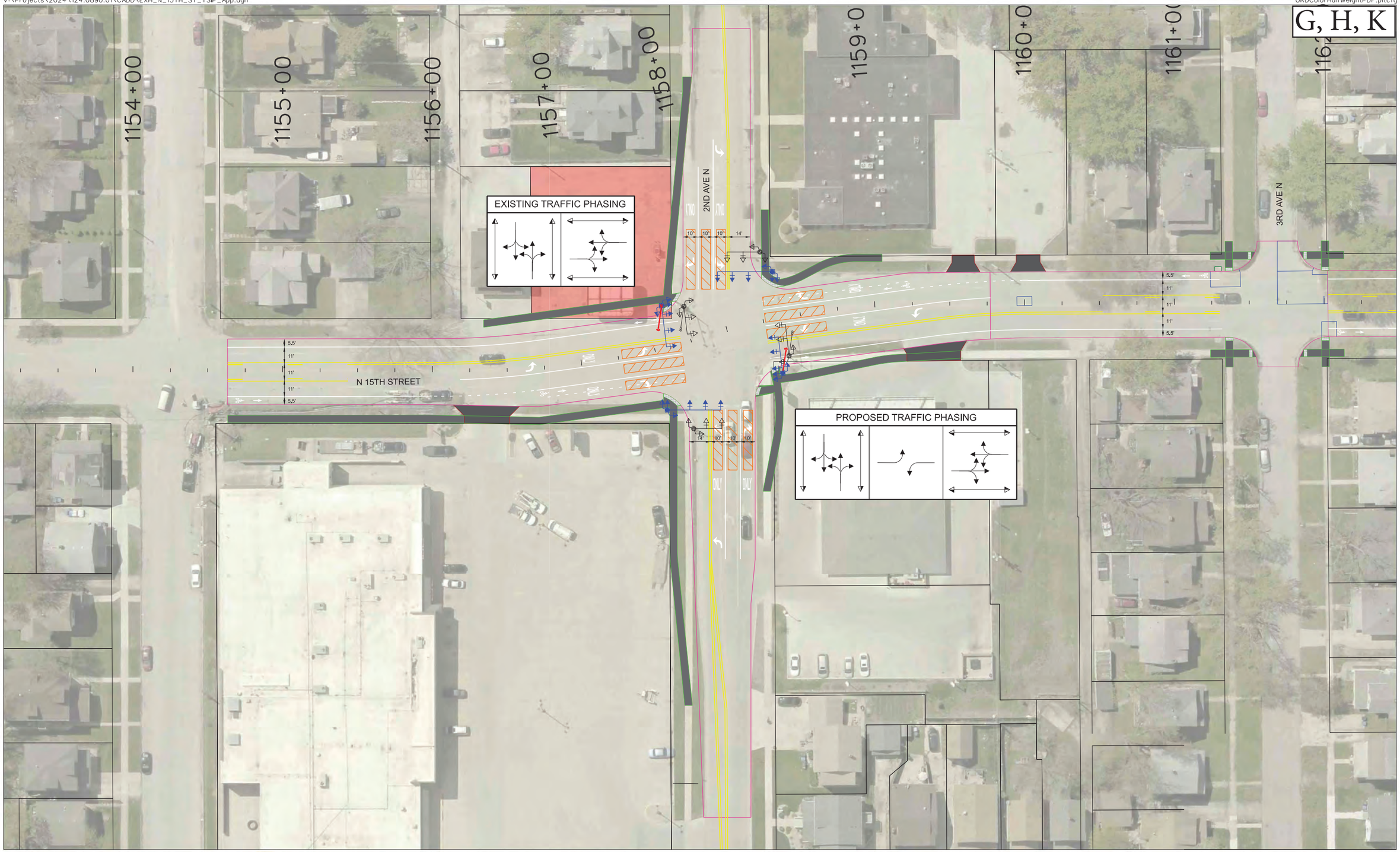
N 15th St viewing North At 2nd Ave N	N 15th St viewing South At 2nd Ave N
N 15th St viewing North **At 6th Ave N**	**N 15th St viewing South** **At 6th Ave N**

PHOTOS
N 15th STREET CORRIDOR IMPROVEMENTS –
1ST AVE N TO 20TH AVE N
FORT DODGE, IOWA

N 15th St viewing North At 7th Ave N	N 15th St viewing South At 7th Ave N
N 15th St viewing North at 20th Ave N	**N 15th St viewing South at 20th Ave N**

PHOTOS
N 15th STREET CORRIDOR IMPROVEMENTS –
1ST AVE N TO 20TH AVE N
FORT DODGE, IOWA

Floral Ave viewing SE corner at N 15th St: Retaining Wall Sight Restriction	Floral Ave viewing NE corner at N 15th St: Shrubbery Sight Restriction



SNYDER & ASSOCIATES

CITY OF FORT DODGE

0 30 60
FEET

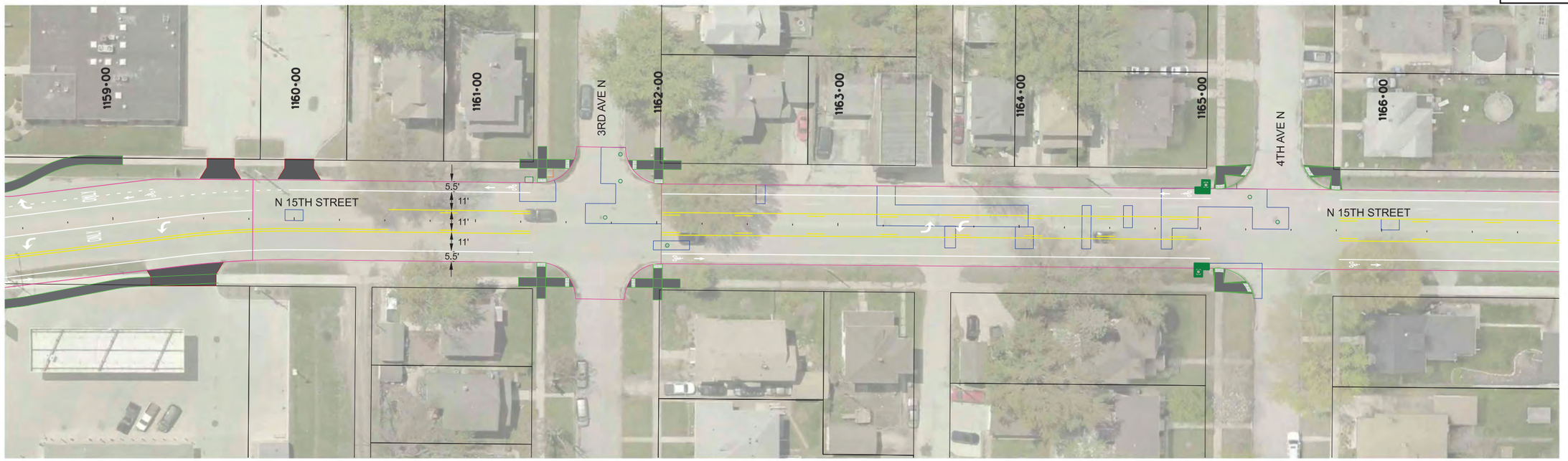
N

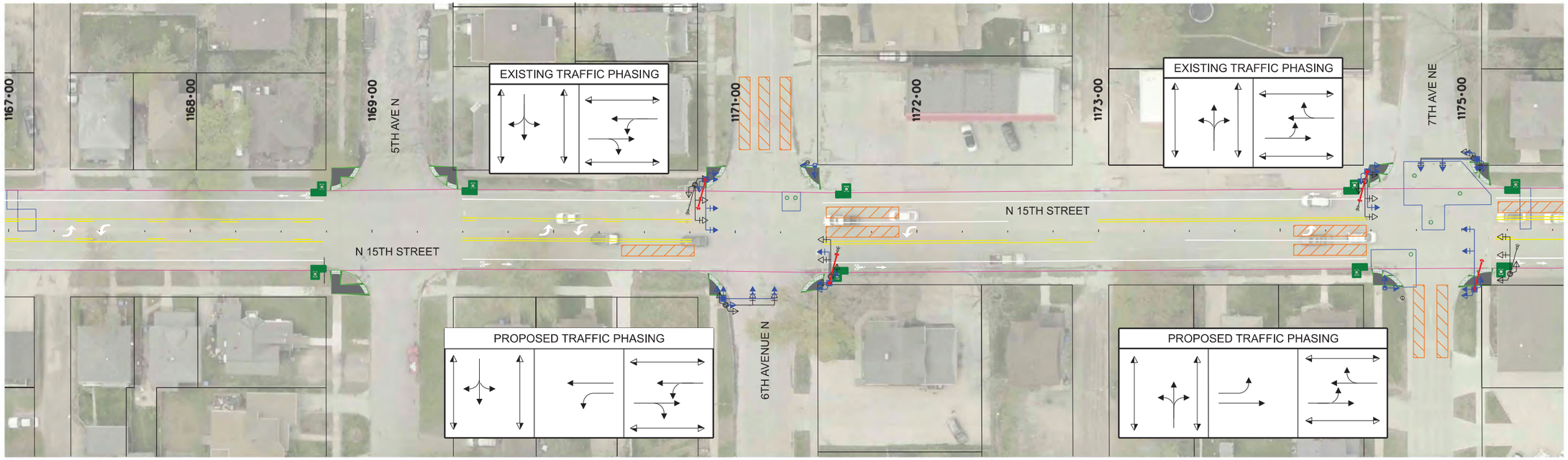
N 15TH STREET IMPROVEMENTS: 1ST AVE N TO 20TH AVE N

CITY OF FORT DODGE, IOWA

8/14/2024

G, H, K





SNYDER & ASSOCIATES

CITY OF FORT DODGE

0 30 60
FEET

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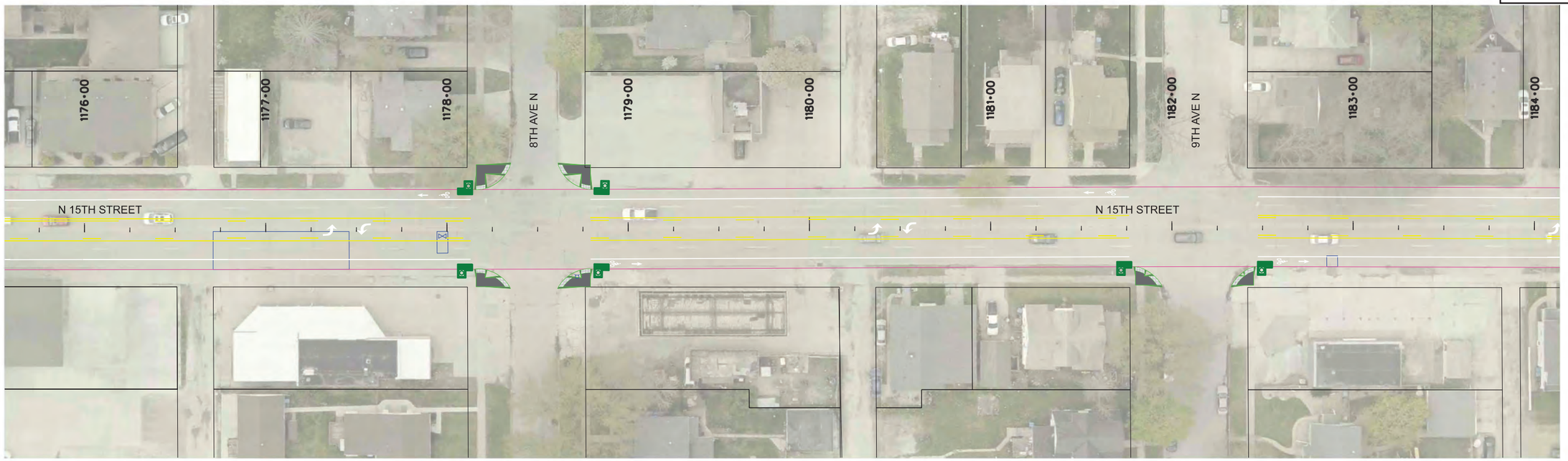
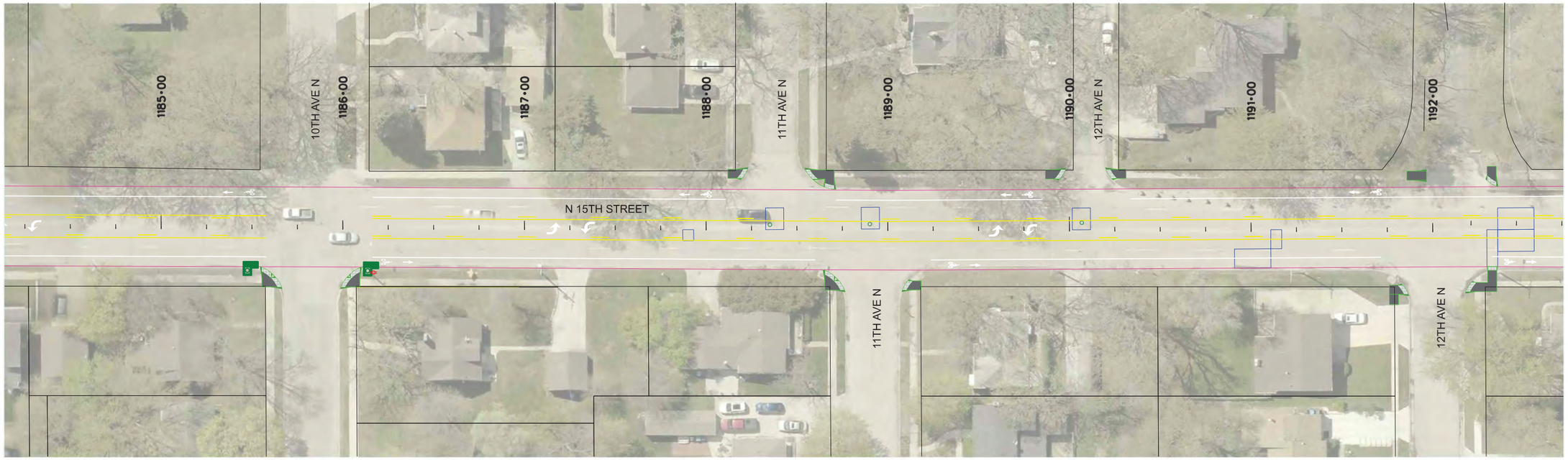
N 15TH STREET IMPROVEMENTS: 1ST AVE N TO 20TH AVE N

CITY OF FORT DODGE, IOWA

8/14/2024

G, H, K





SNYDER & ASSOCIATES

CITY OF FORT DODGE

0 30 60
FEET

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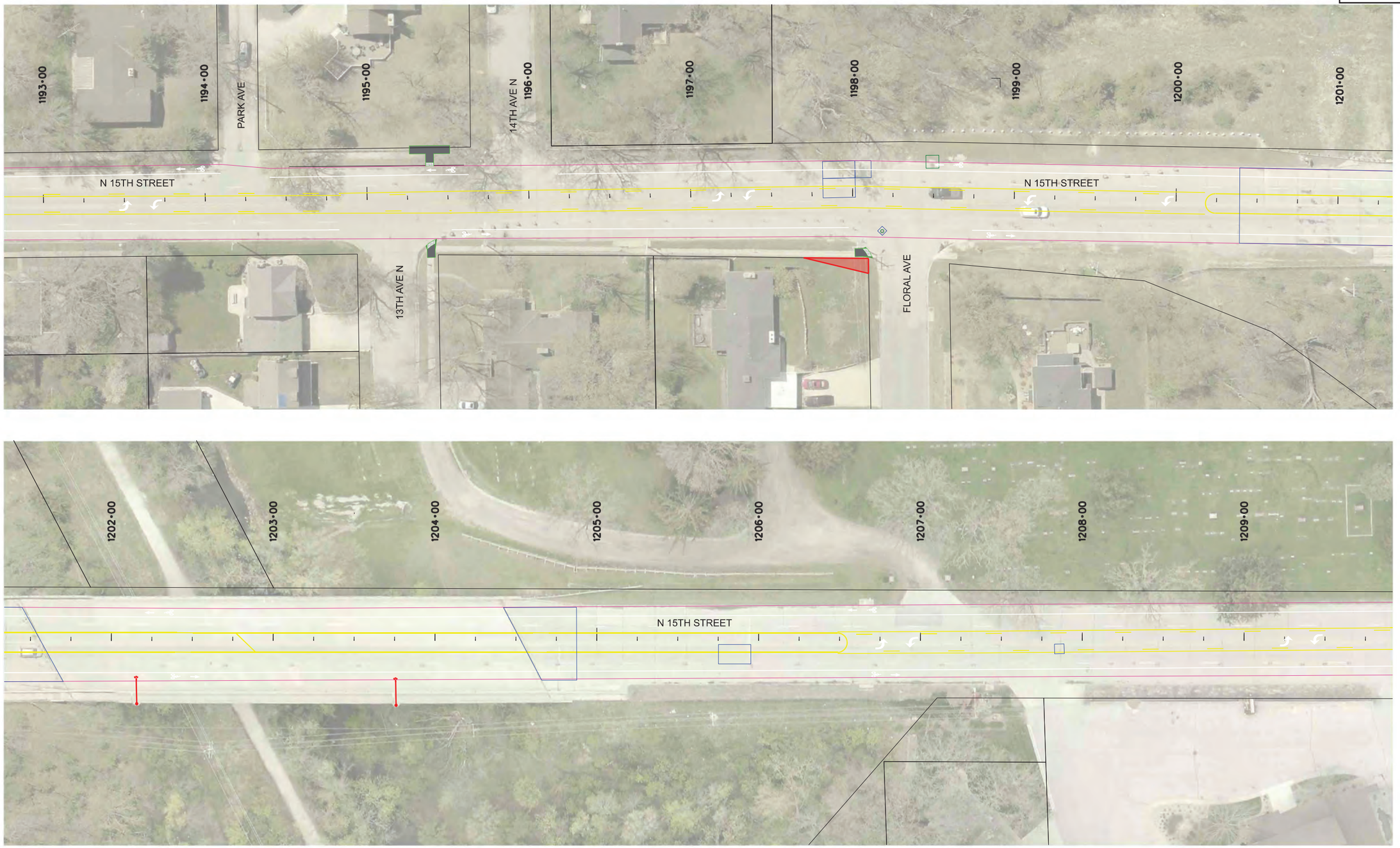
N 15TH STREET IMPROVEMENTS: 1ST AVE N TO 20TH AVE N

CITY OF FORT DODGE, IOWA

8/14/2024

G, H, K



SNYDER & ASSOCIATES

CITY OF FORT DODGE

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FEET

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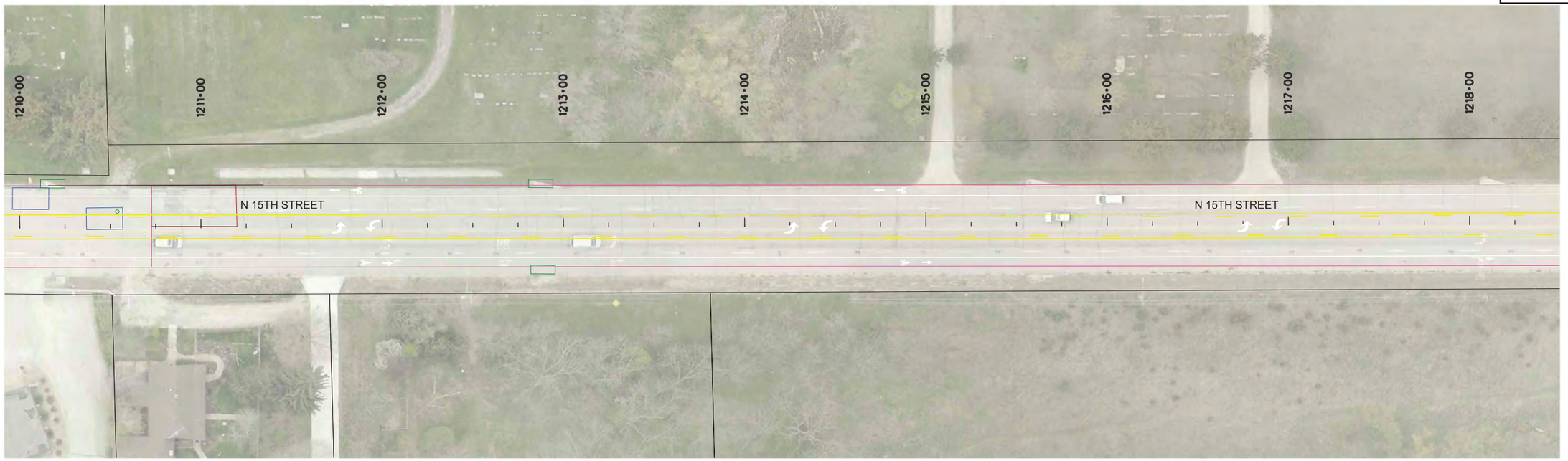
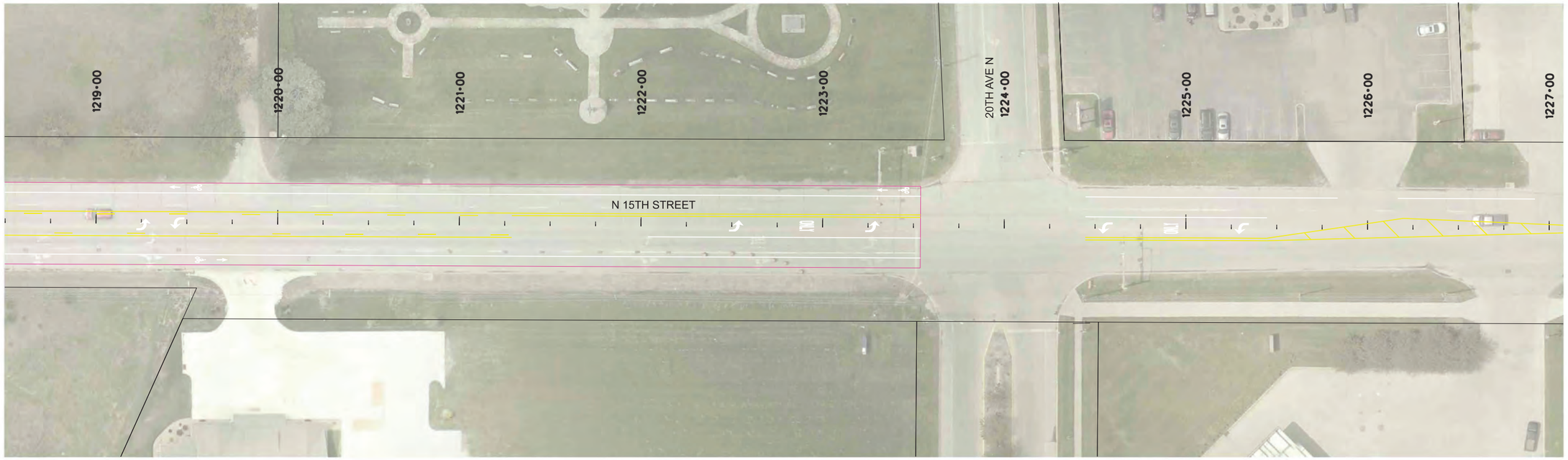
CITY OF FORT DODGE, IOWA

8/14/2024

G, H, K





SNYDER & ASSOCIATES

CITY OF FORT DODGE

0 30 60
FEET

N

N 15TH STREET IMPROVEMENTS: 1ST AVE N TO 20TH AVE N

CITY OF FORT DODGE, IOWA

8/14/2024

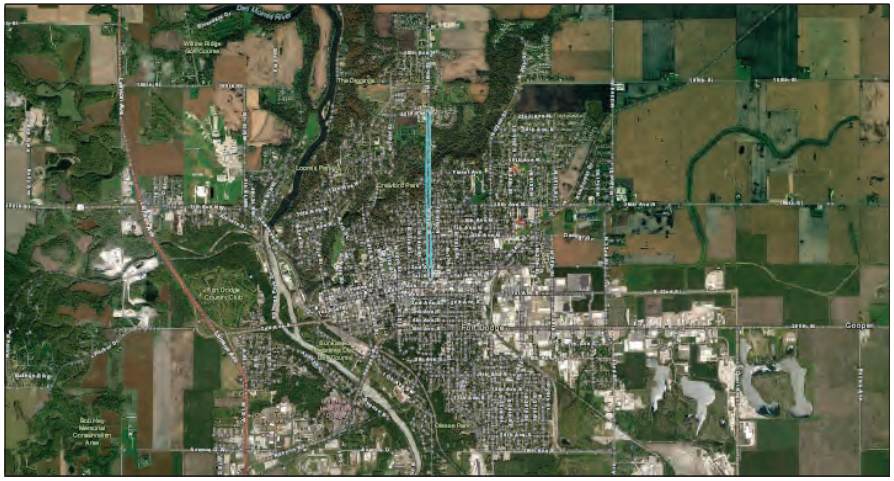
Iowa Crash Analysis Tool
Quick Report
2019-2024

Crash Severity	155
Fatal Crash	0
Suspected Serious Injury Crash	0
Suspected Minor Injury Crash	11
Possible/Unknown Injury Crash	18
Property Damage Only	126

Injury Status Summary	46
Fatalities	0
Suspected serious/incapacitating	0
Suspected minor/non-incapacitating	12
Possible (complaint of pain/injury)	20
Uninjured	0
Unknown	4
Not Reported	10

Property/Vehicles/Occupants	
Property Damage Total (dollars):	781,372.00
Average (per crash dollars):	5,041.11
Total Vehicles:	295.00
Average (per crash):	1.90
Total Occupants:	408.00
Average (per crash):	2.63

Average Severity	
Fatalities/Fatal Crash:	0.00
Fatalities/Crash:	0.00
Injuries/Crash:	0.21
Major Injuries/Crash:	0.00
Minor Injuries/Crash:	0.08
Possible/Unknown Injuries/Crash:	0.13



Iowa Crash Analysis Tool
Quick Report
2019-2024

Major Cause			155
Animal	9	Ran traffic signal	21
Ran stop sign	4	Failed to yield to emergency vehicle	0
FTYROW: At uncontrolled intersection	1	FTYROW: Making right turn on red signal	1
FTYROW: From stop sign	19	FTYROW: From yield sign	0
FTYROW: Making left turn	13	FTYROW: From driveway	1
FTYROW: From parked position	0	FTYROW: To pedestrian	0
FTYROW: Other	1	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	6
Exceeded authorized speed	0	Improper or erratic lane changing	9
Operating vehicle in an reckless/erratic/care...	0	Followed too close	8
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	6
Driver Distraction: Manual operation of an e...	0	Driver Distraction: Talking on a hand-held d...	1
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...	1
Driver Distraction: Inattentive/lost in thou...	0	Driver Distraction: Other interior distracti...	11
Driver Distraction: Exterior distraction	0	Ran off road - right	0
Ran off road - straight	0	Ran off road - left	0
Lost control	1	Swerving/Evasive Action	0
Over correcting/over steering	1	Failed to keep in proper lane	1
Failure to signal intentions	0	Traveling on prohibited traffic way	0
Vehicle stopped on railroad tracks	0	Other: Vision obstructed	4
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	1	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	19
Unknown	11	Not reported	0
Other: No improper action	5		

Iowa Crash Analysis Tool
Quick Report
2019-2024

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	1	0	0	1	3	0	3	3	2	2	0	0	15
Monday	0	0	0	1	0	2	5	3	3	2	1	0	0	17
Tuesday	0	1	1	2	4	2	2	6	4	0	2	1	0	25
Wednesday	1	0	0	0	2	1	2	1	3	1	1	1	0	13
Thursday	2	0	0	3	2	6	2	7	10	1	1	0	0	34
Friday	0	0	0	0	2	4	3	3	5	3	2	0	0	22
Saturday	0	1	3	0	5	4	4	3	3	3	1	2	0	29
Total	3	3	4	6	16	22	18	26	31	12	10	4	0	155

Manner of Crash Collision	155
Non-collision (single vehicle)	18
Head-on (front to front)	7
Rear-end (front to rear)	20
Angle (oncoming left turn)	5
Broadside (front to side)	63
Sideswipe (same direction)	33
Sideswipe (opposite direction)	2
Rear to rear	0
Rear to side	2
Not reported	1
Other	4
Unknown	0

Surface Conditions	155
Dry	120
Wet	15
Ice/frost	3
Snow	14
Slush	1
Mud/dirt	0
Water (standing or moving)	0
Sand	0
Oil	0
Gravel	1
Not reported	1
Other	0
Unknown	0

Fixed Object Struck			295
Bridge overhead structure	0	Bridge pier or support	0
Bridge/bridge rail parapet	0	Curb/island/raised median	1
Ditch	0	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	2	Traffic sign support	0
Traffic signal support	2	Other post/pole/support	0
Fire hydrant	0	Mailbox	0
Tree	1	Landscape/shrubbery	0
Snow bank	0	Fence	1
Wall	0	Building	1
Other fixed object	0	None (no fixed object struck)	287

Iowa Crash Analysis Tool
Quick Report
2019-2024

Driver Age/Driver Gender					
Driver Age - 5 year Bins	Female	Male	Not reported	Unknown	**Total**
< 14	0	0	0	0	0
= 14	1	4	0	0	5
= 15	2	2	0	0	4
= 16	7	4	0	0	11
= 17	6	8	0	0	14
= 18	9	4	0	0	13
= 19	2	7	0	0	9
= 20	5	1	0	0	6
>= 21 and <= 24	10	13	1	0	24
>= 25 and <= 29	17	11	0	0	28
>= 30 and <= 34	16	15	0	0	31
>= 35 and <= 39	10	10	0	0	20
>= 40 and <= 44	8	6	0	0	14
>= 45 and <= 49	9	5	0	0	14
>= 50 and <= 54	4	7	0	0	11
>= 55 and <= 59	7	8	0	0	15
>= 60 and <= 64	5	11	0	0	16
>= 65 and <= 69	5	7	0	0	12
>= 70 and <= 74	9	5	0	0	14
>= 75 and <= 79	2	4	0	0	6
>= 80 and <= 84	5	5	0	0	10
>= 85 and <= 89	0	4	0	0	4
>= 90 and <= 94	0	0	0	0	0
>= 95	0	0	0	0	0
Not reported	0	0	0	0	0
Unknown	0	1	13	0	14
Total	139	142	14	0	295

Alcohol Test Given	295
None	276
Blood	0
Urine	0
Breath	4
Vitreous	0
Refused	1
Not reported	14

Drug Test Given	295
None	280
Blood	0
Urine	0
Breath	0
Vitreous	0
Refused	1
Not reported	14

Drug Test Result	295
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	295
Other	0

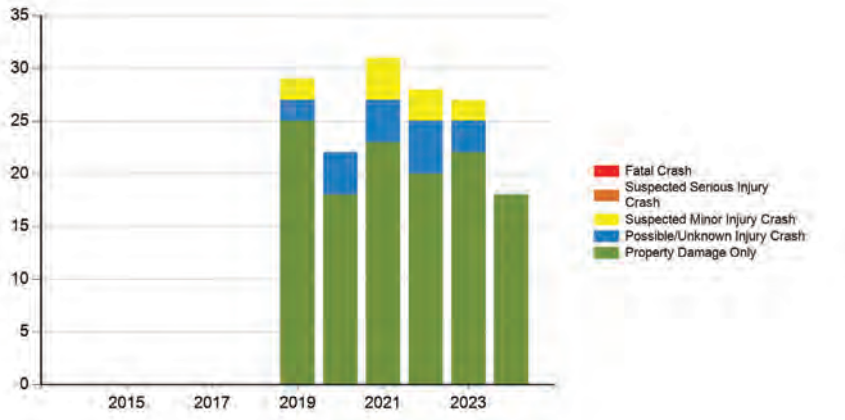
Drug/Alcohol Related	155
Drug	0
Alcohol (< Statutory)	1
Alcohol (Statutory)	2
Drug and Alcohol (< Statutory)	0
Drug and Alcohol (Statutory)	0
Refused	1
Under Influence of Alcohol/Drugs/Medications	1
None Indicated	150

Iowa Crash Analysis Tool
Quick Report
2019-2024

Crash Severity - Annual

Crash Year	Fatal Crash	Suspected Serious Injury Crash	Suspected Minor Injury Crash	Possible/Unknown Injury Crash	Property Damage Only	**Total**
2014	0	0	0	0	0	0
2015	0	0	0	0	0	0
2016	0	0	0	0	0	0
2017	0	0	0	0	0	0
2018	0	0	0	0	0	0
2019	0	0	2	2	25	29
2020	0	0	0	4	18	22
2021	0	0	4	4	23	31
2022	0	0	3	5	20	28
2023	0	0	2	3	22	27
2024	0	0	0	0	18	18
Total	0	0	11	18	126	155

Severity/Year

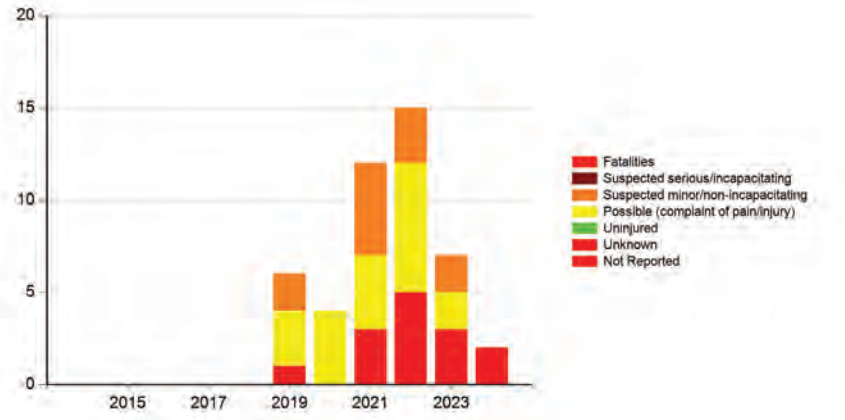


Iowa Crash Analysis Tool
Quick Report
2019-2024

Injury Status - Annual

Crash Year	Fatalities	Suspected serious/incapacitating	Suspected minor/non-incapacitating	Possible (complaint of pain/injury)	Uninjured	Unknown	Not Reported	**Total**
2014	0	0	0	0	0	0	0	0
2015	0	0	0	0	0	0	0	0
2016	0	0	0	0	0	0	0	0
2017	0	0	0	0	0	0	0	0
2018	0	0	0	0	0	0	0	0
2019	0	0	2	3	0	0	1	6
2020	0	0	0	4	0	0	0	4
2021	0	0	5	4	0	0	3	12
2022	0	0	3	7	0	2	3	15
2023	0	0	2	2	0	2	1	7
2024	0	0	0	0	0	0	2	2
Total	0	0	12	20	0	4	10	46

Injury Status/Year



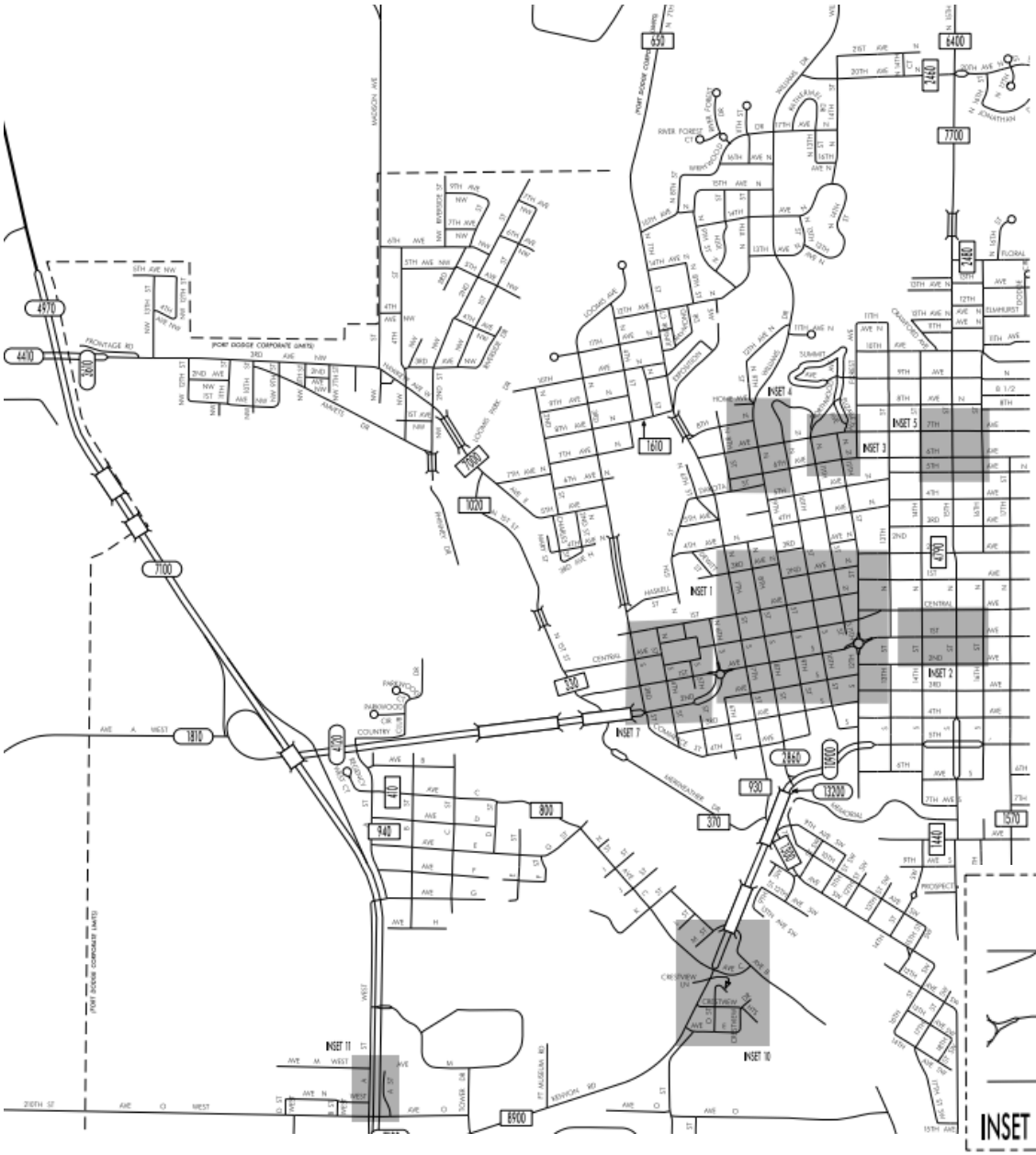
IOWADOT

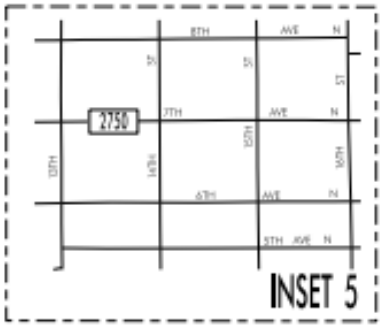
TRAFFIC FLOW MAP OF

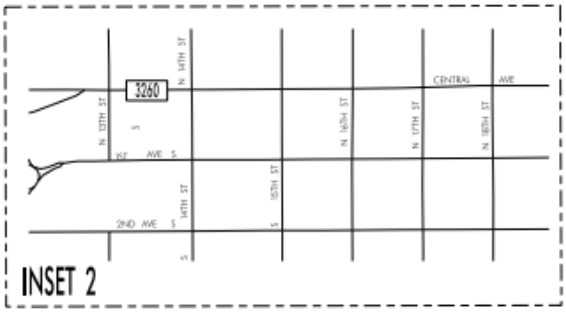
FORT DODGE A

WEBSTER COUNTY

2023 ANNUAL AVERAGE DAILY TRAFFIC







PREPARED BY

IOWA DEPARTMENT OF TRANSPORTATION

DIVISION OF PLANNING AND PROGRAMMING

OFFICE OF SYSTEM PLANNING

PHONE (515) 239-1289

LEGEND

RECORDER ONLY

MANUAL COUNT

BENEFIT/COST ANALYSIS
N 15th STREET CORRIDOR IMPROVEMENTS – 1ST AVE N TO 20TH AVE N
FORT DODGE, IOWA

For the purposes of the benefit/cost analysis, an estimated improvement life of 15 years was selected. This is consistent with the Iowa DOT recommended TSIP service lives for turn lane improvements for a roadway segment

Converting N 15th St to a three-lane cross-section with a two-way left-turn lane will reduce the potential for rear-end crashes. With narrowing the roadway along N 15th St, the clearance to existing fixed objects located behind the curb will be improved and speed consistency will also be improved. Sideswipe crashes occurring in the same direction will also be improved based on the improvements.

Countermeasure	CRF	Source	Crash Type	Crash Severity	Area Type
Convert to 3-lane roadway with two-way left-turn lane	30	Iowa DOT (RS-35)	All	All	All

Based on the review of available data on the Iowa DOT Crash Reductions Factors website, a crash reduction factor (CRF) of 30 was applied for the proposed improvements. The estimated safety improvement cost of this project is **$1,403,500**, the resultant benefit/cost (B/C) ratio is **3.94**. The estimated safety improvement costs include costs associated with pavement markings, traffic signals, fiber interconnect, and half of the temporary traffic control and mobilization.

IOWA DOT

Safety Benefit-Cost Ratio

County:	Webster	Prepared By:	Snyder & Associate
Location:	Fort Dodge, N 15th St Corridor	Date Prepared:	8/15/2024
Proposed Improvements:	4-lane to 3-lane conversion from 1st Ave N to 20th Ave N		
Estimated Improvement Cost:	$ 1,403,500		
Inflation on Crash Costs:	4%	Annual Maintenance:	2%
Discount Rate:	4%	(% of Improvement Cost)	
Estimated Service Life:	20	Annual Maintenance Cost:	$ 28,070
Method Choice:	CRF Method		

The Crash Reduction Factor (CRF) Method applies one to three CRFs to historical crashes to estimate reductions in future crashes. Crash Modification Factors (CMFs) can be converted to CRFs. For additional information, click the "Learn More" button.

Crash Reduction Factor (CRF) Method

Traffic Growth Factor:	1.00%
Number of CRFs:	1
Years of Crash History:	5

Combined CRF (Dominant Common Residuals Method)

Iowa DOT's preferred methodology for combining CRFs is Dominant Common Residuals, since it is more conservative than the other options.

	CRF 1:	Combined CRF
CRF Value (%)	30	**30.0**

Crash Severity	Rounded Societal Costs	Crash History (Total):	CRF (from above)	Crash History - Annual Avg	Crashes Saved Annually
Fatal (K)	$ 4,200,000	0	30.0	**0.00**	**0.00**
Serious Injury (A)	$ 4,200,000	0	30.0	**0.00**	**0.00**
Minor Injury (B)	$ 280,000	11	30.0	**2.20**	**0.66**
Possible/Unknown Injury (C)	$ 130,000	18	30.0	**3.60**	**1.08**
Property Damage Only (O)	$ 20,000	126	30.0	**25.20**	**7.56**

Crash Severity	Annual Societal Benefit
Fatal (K)	**$ -**
Serious Injury (A)	**$ -**
Minor Injury (B)	**$ 184,800**
Possible/Unknown Injury (C)	**$ 140,400**
Property Damage Only (O)	**$ 151,200**

Total Benefits and Costs

		Implementation Cost	$ 1,403,500
		Present Value of Maint.	$ 381,480
Present Value Benefits (Societal Benefits)	$ 7,036,765	Present Value Costs (Impl. and Maint. Costs)	$ 1,784,980
Present Value Net Return	$ 5,251,784		
Benefit Cost Ratio	**3.94**		

Form continues on next page

County:	Webster	Prepared By:	Snyder & Associates
Location:	Fort Dodge, N 15th St Corridor	Date Prepared:	8/15/2024

No Input Necessary - No Custom Values In Use

General Customizations

No change to Crash Costs

No change to Discount Rate

No change to Maintenance Costs

Method-Specific Customizations

No change to Traffic Growth Rate

No change to Crash History

RESOLUTION NO. 24-096
City Council

RESOLUTION AUTHORIZING THE SUBMITTAL OF AN APPLICATION FOR THE IOWA DEPARTMENT OF TRANSPORTATION TRAFFIC SAFETY IMPROVEMENT PROGRAM (TSIP) FOR THE INTERSECTION OF BOYSON ROAD AND BOYSON COURT TO RECONSTRUCT THE INTERSECTION TO A ROUNDABOUT

WHEREAS, the Iowa Department of Transportation has established the TSIP and provides funding for locations where vehicular safety is a concern and documented, and

WHEREAS, said program allows for funding to be provided to local jurisdictions for eligible transportation projects or programs that will improve traffic safety at a specific site or corridor with a crash history, and

WHEREAS, the City of Hiawatha has determined that be reconstructing the intersection of Boyson Road and Boyson Court as a roundabout will help reduce crashes, thus improving safety and operations, and

NOW, THEREFORE, BE IT RESOLVED BY THE CITY COUNCIL OF THE CITY OF HIAWATHA, IOWA, THAT:

1. The City Council supports and approves the application for TSIP funding.
2. The City Council hereby commits the additional City funds necessary for construction of the project beyond any TSIP funding.
3. The City Council hereby commits to accepting and maintaining these improvements.
4. The Mayor is hereby authorized to execute the application on behalf of the City.

AYES: Jill Weigel, Rob Archibald, Aime Wichtendahl, Jeff Cater, Ben Fiedler
NAYS: None

PASSED AND APPROVED this 5th day of June, 2024.

Steve Dodson, Mayor

ATTEST:

Kari Graber, City Clerk

Traffic Safety Improvement Program Application

Boyson Road Corridor Between Hawkeye Drive and Robins Road

Hiawatha, Iowa

August 15, 2024

Rev. 07/23

Application for SITE-SPECIFIC TSIP FUNDS

GENERAL INFORMATION **DATE:** August 15, 2024

Location / Title of Project Boyson Road from Hawkeye Drive and Robins Road

Applicant City of Hiawatha

Contact Person Jon Fitch Title City Engineer

Complete Mailing Address 101 Emmons Street

Hiawatha, IA 52233

Phone (319) 393-1515 E-Mail jfitch@hiawatha-iowa.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	$	608,396
Total Project Cost	$	1,270,143
Safety Funds Requested	**$**	**500,000**

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
		☐	☐		
		☐	☐		

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 Hiawatha

Signed: Jon Fitch 05.28.2024

Signature Date Signed

Jon Fitch, City Engineer

Printed Name

Attest: Kari Graber 5/28/24

Signature Date Signed

Kari Graber, City Clerk

Printed Name

Background

The City of Hiawatha is planning to make improvements to the Boyson Road corridor, extending from Hawkeye Drive to Robins Road. This project includes converting the Boyson Road and Boyson Court intersection from a Two-Way Stop-Controlled (TWSC) configuration to a mini roundabout. The Boyson Road corridor is a 0.25-mile segment that currently features a two-lane road transitioning to a three-lane road at both ends, with a posted speed limit of 30 mph. Hawkeye Drive and Robins Road are both two-lane roads with the same speed limit. Currently, Boyson Road is 24 feet wide with no curb, gutter, or shoulders. Sidewalk sections exist but do not connect continuously from the west to the east. The Boyson Road and Hawkeye Drive intersection is a 3-leg stop-controlled intersection, while the Boyson Road and Robins Road intersection is a 4-leg signalized intersection. The corridor also intersects with the Cedar Valley Trail, and the Dry Creek Trail will be constructed along the road.

Crash History

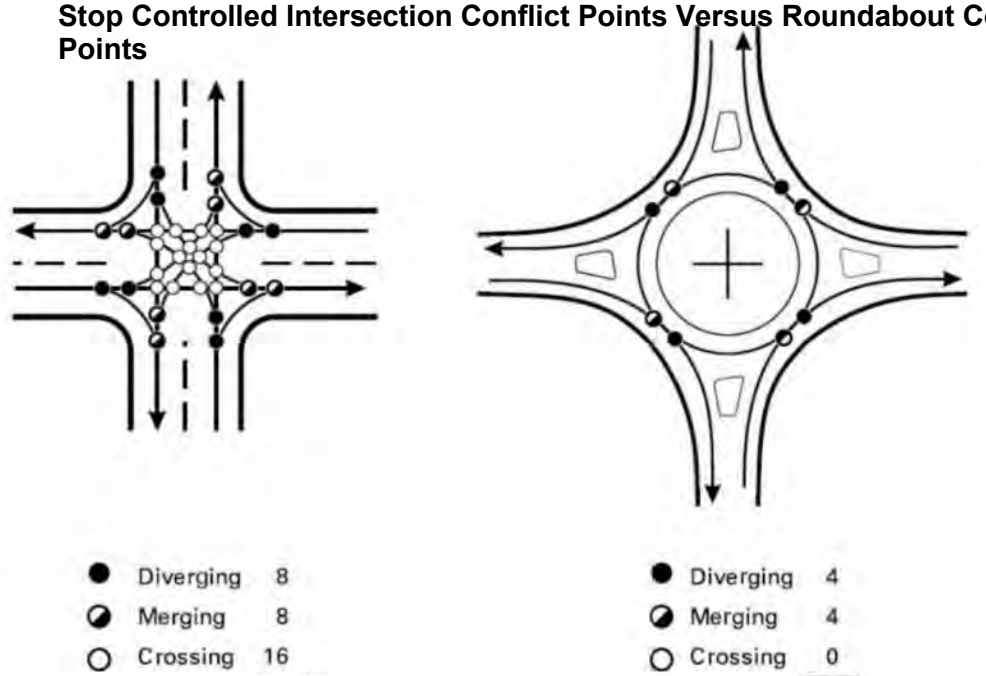
The existing two-lane configuration, combined with increasing traffic volumes, has resulted in multiple annual crashes. Crash data from the Iowa DOT ICAT website, evaluated from 2019 to 2023, reveals 16 crashes over five years. These included 2 suspected minor injury crashes, 1 possible/unknown injury crash, and 13 property damage-only incidents. Causes of crashes included driver distraction, speeding, following too closely, and losing control. Crash types involved 6 rear-end, 2 head-on, 1 same-direction sideswipe, 4 opposite-direction sideswipe, 2 non-collision, and 1 other type. (Refer to Section I for a Crash History Summary.)

Proposed Improvements

The proposed project involves realigning Boyson Road to soften its curves, adding curb and gutter, and installing continuous sidewalks. A key component is reconfiguring the Boyson Road and Boyson Court intersection into a mini roundabout. This change aims to address and reduce the frequency, rate, and severity of crashes and drivers deciding to select inadequate gaps for making turns onto Boyson Road.

Roundabouts are generally safer than TWSC intersections due to fewer conflict points and lower vehicular speeds. Studies, such as those cited by the Highway Safety Manual Clearinghouse, indicate that roundabouts can reduce crash frequency by approximately 88%. They also mitigate severe crash types, such as right-angle and left-turn head-on collisions. Additionally, roundabouts help to reduce vehicle speeds and provide safer pedestrian crossings through the inclusion of crosswalks and improved lighting at each intersection approach. The figure below compares the conflict points of a conventional stop-controlled four-approach intersection with those of a roundabout intersection.

Figure 1 Stop Controlled Intersection Conflict Points Versus Roundabout Conflict Points



Source: Rhode Island Department of Transportation

The proposed improvements will also help accommodate bicycle and pedestrian traffic, which is anticipated to increase with the development of the areas nearby and once the new section of Dry Creek Trail is constructed. The Dry Creek Trail will be constructed and connected to the existing Cedar Valley Trail, and to the Dry Creek Trail's existing section, both west of Hawkeye Drive

Conclusion

The proposed improvements are anticipated to significantly reduce the frequency and severity of vehicle crashes at the Boyson Road and Boyson Court intersection, as well as along the entire 0.25-mile corridor. By converting the intersection from a two-way stop-controlled configuration to a roundabout, we can expect a substantial decrease in conflict points and lower vehicular speeds, which are crucial factors in minimizing crash occurrences and their severity.

Roundabouts have been shown to eliminate the potential for severe right-angle and left-turn head-on collisions, which are prevalent in stop-controlled intersections. With fewer conflict points and lower transit speeds, the likelihood of high-impact collisions is greatly reduced. According to studies referenced by Highway Safety Manual Clearinghouse, roundabouts can decrease crash frequency by approximately 88%, providing a safer environment for all road users.

The proposed realignment of Boyson Road to soften its curves, combined with the addition of curb and gutter, will enhance vehicle control and reduce the risk of run-off-road crashes. The continuous sidewalks and improved crosswalks with enhanced lighting will create safer pedestrian pathways, encouraging walking and biking while reducing pedestrian-vehicle conflicts. The expansion of the trail network, including the integration of the Cedar Valley Trail and the forthcoming Dry Creek Trail, will further support non-motorized transportation and recreational activities, promoting a safer, healthier, and more connected community.

These comprehensive improvements are designed to create a safer, more efficient, and more accessible transportation corridor. By addressing existing safety issues and accommodating future traffic demands, the City of Hiawatha will enhance the overall quality of life for its residents and visitors. The integration of these enhancements aligns with our commitment to proactive safety measures.

Estimated Project Cost

Project Name: Boyson Road between Hawkeye Drive and Robins Road
City of Hiawatha, Iowa

Item #	Item Description	Quantity	Unit	Unit $	Non-Safety Items $	Safety Items $
1	CLEAR+GRUBB	2.8	ACRE	$3,000		8,400.00
2	SPECIAL BACKFILL	1500	CY	$35		52,500.00
3	EXCAVATION, CL 10, RDWY+BORROW	2410	CY	$12		28,920.00
4	TOPSOIL	1900	CY	$11		20,900.00
6	GRANULAR MAT'L	500	TON	$27		13,500.00
7	MODIFIED SUBBASE	1150	CY	$35		40,250.00
8	MACADAM STONE BASE	400	TON	$35		14,000.00
10	STD/S-F PCC PAV'T, CL C CL 3, 6"	1280	SY	$42		53,760.00
11	STD/S-F PCC PAV'T, CL C CL 3, 7"	165	SY	$46		7,590.00
12	STD/S-F PCC PAV'T, CL C CL 3, 9"	4600	SY	$52		239,200.00
13	TEMPORARY PAV'T	120	SY	$69		8,280.00
15	PRECAST CONC BOX CULV, 7 FT. X 3 FT.	168	LF	$637	107,016.00	
16	PRECAST CONC BOX CULV ST END SEC, 7 FT. X 3 FT.	2	EACH	$3,631	7,262.00	
17	APRON, CONC, 15"	2	EACH	$926	1,852.00	
18	APRON, CONC, 18"	1	EACH	$1,158	1,158.00	
19	CULV, CONC ENT PIPE, 15"	30	LF	$75	2,250.00	
20	MANHOLE, SAN SWR, SW-303, 48"	1	EACH	$5,209	5,209.00	
21	INTAKE, SW-509	4	EACH	$5,209	20,836.00	
22	SUBDRAIN CLEANOUT	6	EACH	$926	5,556.00	
23	MANHOLE ADJUSTMENT, MAJOR	1	EACH	$1,158	1,158.00	
24	SUBDRAIN, STD, PERFORATED, 6"	1690	LF	$12	20,280.00	
25	STORM,15"	500	LF	$52	26,000.00	
26	STORM,21"	106	LF	$81	8,586.00	
27	STORM,36"	70	LF	$98	6,860.00	
28	RMV STORM SWR PIPE LE 36"	227	LF	$17	3,859.00	
29	RMV STORM SWR PIPE GT 36"	75	LF	$23	1,725.00	
30	SAN SWR G-MAIN, TRENCHED, PVC, 8"	40	LF	$46	1,840.00	
31	ENGINEER FABRIC	705	SY	$3	2,115.00	
32	EROSION STONE	56	TON	$35	1,960.00	
33	RMVL OF PAV'T	3140	SY	$9	28,260.00	
34	RMVL OF INTAKE+UTILITY ACCESS	1	EACH	$347	347.00	
35	RMVL OF RECREATIONAL TRAIL	48	SY	$7	336.00	
36	RECREATIONAL TRAIL, PCC, 6"	1045	SY	$42	43,890.00	
37	RMVL OF SIDEWALK	255	SY	$7	1,785.00	
38	SIDEWALK, PCC, 4"	285	SY	$41	11,685.00	
39	DETECTABLE WARNING - CURB RAMP	100	SF	$41	4,100.00	
40	RMVL OF PAVED DRIVEWAY	240	SY	$8		1,920.00
41	SAFETY CLOSURE	4	EACH	$232		928.00
42	RMV+REINSTALL SIGN	9	EACH	$174		1,566.00
43	PAINTED PAV'T MARK, DURABLE	10	STA	$58		580.00
44	PAINTED SYMBOL+LEGEND, DURABLE	7	EACH	$289		2,023.00
45	TRAFFIC CONTROL	1	LS	$20,000		20,000.00
46	MOBILIZATION	1	LS	$80,000		80,000.00
47	TRENCH COMPACTION TESTING	1	LS	$579		579.00
48	WATER MAIN, 8"	20	LF	$64	1,280.00	
49	WATER MAIN,12"	985	LF	$87	85,695.00	
50	FITTINGS BY COUNT, DIP, VARIOUS SIZES	4	EACH	$926	3,704.00	
51	WATER SERVICE STUB, COPPER, 3/4"	3	EACH	$1,158	3,474.00	
52	VALVE, GATE, DIP, 8"	1	EACH	$1,852	1,852.00	
53	VALVE, GATE, DIP, 12"	4	EACH	$2,547	10,188.00	
54	FIRE HYDRANT ASSEMBLY, WM-201	2	EACH	$4,052	8,104.00	
56	SITE RESORATION AND EROSION CONTROL	1	ACRE	$13,500		13,500.00
62	RAILROAD CROSSING IMPROVEMENTS	1	LS	$231,525	231,525.00	
	Construction Sub-Total				661,747.00	608,396.00
	Construction Total				**1,270,143.00**	

D. Timeline Schedule

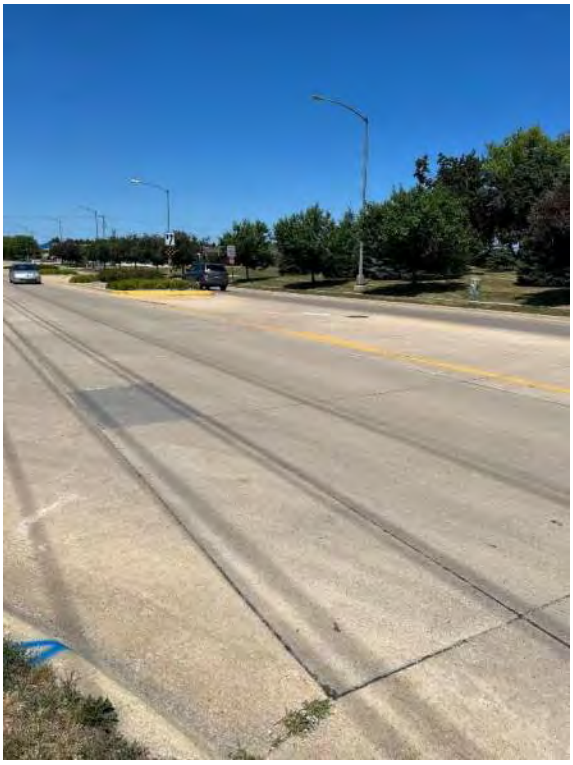
The schedule proposed for the safety improvements at Boyson Road from Hawkeye Drive to Robins Road is as follows:

- **August 2024** – Submit for 2025 TSIP Funds.
- **November 2024** – Project is awarded TSIP funds.
- **January 2024 – November 2025** – Proceed with design of improvements.
- **July 2025** –TSIP funds are available.
- **February 2026** –Let Road project.
- **Spring 2026** – Construction begins.
- **Spring 2027** – Construction complete.

Hawkeye Drive
Boyson Road
Project Length
Boyson Court
Mini
Roundabout
Robins Road

Boyson Road 3-lane road section West of Hawkeye Drive

Boyson Road at Hawkeye Drive Intersection



Boyson Road 3-lane road section West of Hawkeye Drive

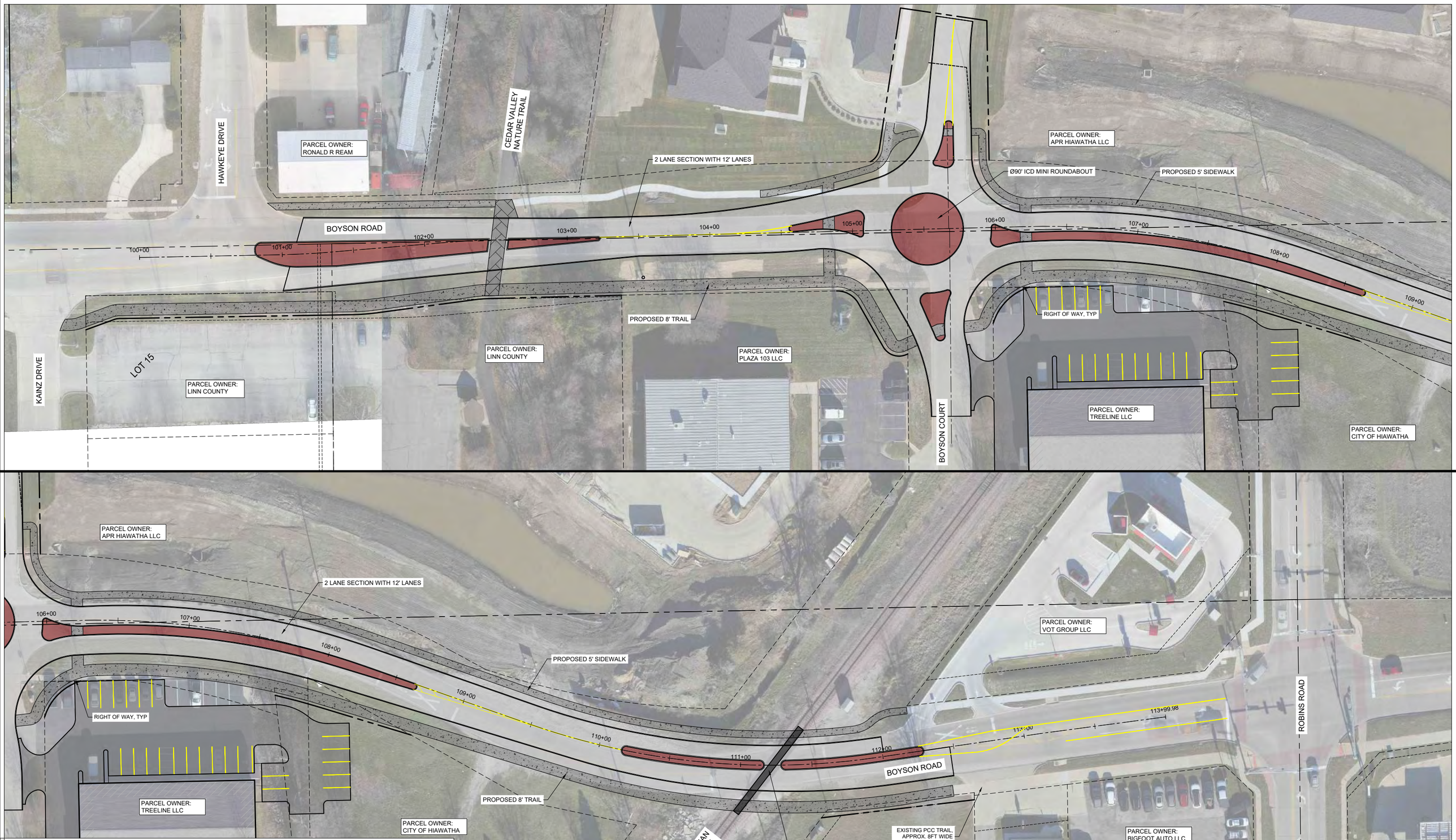
End of sidewalk south of Boyson Road and west of Boyson Court

Cedar Valley Trail across Boyson Road

Boyson Road between Hawkeye Drive and railroad crossing

End of sidewalk east of Cedar Valley Trail, north of Boyson Road

Boyson Road 3-lane section west of Robins Rd



CITY OF HIAWATHA
"BOYSON RD. RECONSTRUCTION
FROM KAINZ DR. TO 200 FT WEST
OF ROBINS RD."
APRIL 11, 2024

SHIVEHATTERY
ARCHITECTURE + ENGINEERING

RECOMMENDED CONCEPT
2 LANES WITH MINI ROUNDABOUT

Hiawatha!

N

0 15 30 60
SCALE IN FEET

LEGEND

- PCC PAVEMENT
- PCC SIDEWALK
- PCC DRIVEWAY

CITY OF HIAWATHA
Proposed Project
I-380

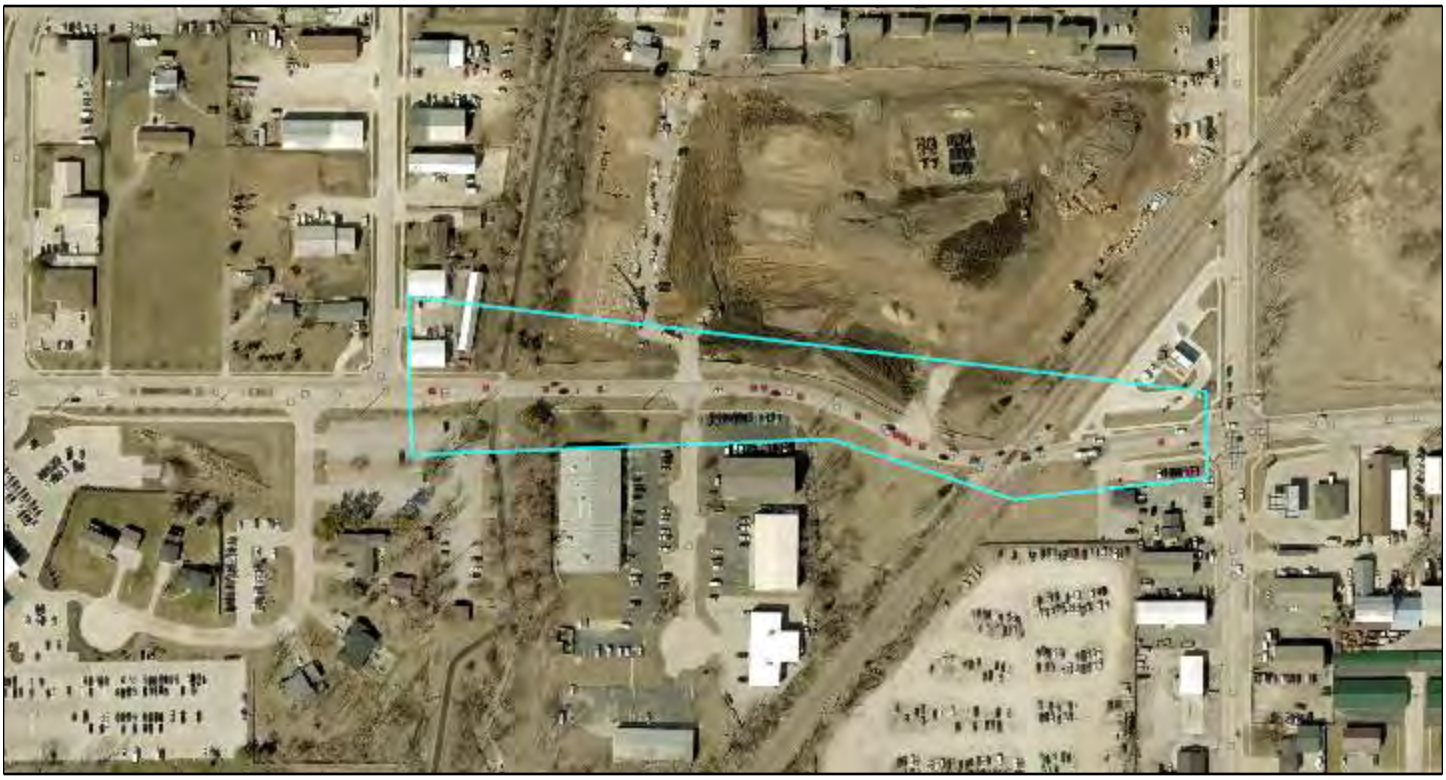
Iowa Crash Analysis Tool
Quick Report
2019-2023

Crash Severity	16
Fatal Crash	0
Suspected Serious Injury Crash	0
Suspected Minor Injury Crash	2
Possible/Unknown Injury Crash	1
Property Damage Only	13

Injury Status Summary	4
Fatalities	0
Suspected serious/incapacitating	0
Suspected minor/non-incapacitating	2
Possible (complaint of pain/injury)	1
Uninjured	0
Unknown	0
Not Reported	1

Property/Vehicles/Occupants	
Property Damage Total (dollars):	116,500.00
Average (per crash dollars):	7,281.25
Total Vehicles:	33.00
Average (per crash):	2.06
Total Occupants:	44.00
Average (per crash):	2.75

Average Severity	
Fatalities/Fatal Crash:	0.00
Fatalities/Crash:	0.00
Injuries/Crash:	0.19
Major Injuries/Crash:	0.00
Minor Injuries/Crash:	0.13
Possible/Unknown Injuries/Crash:	0.06



Iowa Crash Analysis Tool
Quick Report
2019-2023

Major Cause			**16**
Animal	0	Ran traffic signal	0
Ran stop sign	0	Failed to yield to emergency vehicle	0
FTYROW: At uncontrolled intersection	0	FTYROW: Making right turn on red signal	0
FTYROW: From stop sign	0	FTYROW: From yield sign	0
FTYROW: Making left turn	0	FTYROW: From driveway	0
FTYROW: From parked position	0	FTYROW: To pedestrian	1
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	4
Exceeded authorized speed	0	Improper or erratic lane changing	0
Operating vehicle in an reckless/erratic/care...	0	Followed too close	2
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...	1
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...	1
Driver Distraction: Exterior distraction	1	Ran off road - right	1
Ran off road - straight	0	Ran off road - left	0
Lost control	2	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	3
Unknown	0	Not reported	0
Other: No improper action	0		

Iowa Crash Analysis Tool
Quick Report
2019-2023

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	1	0	1
Monday	0	0	0	0	1	0	0	0	1	0	0	1	0	3
Tuesday	0	0	0	0	1	0	0	0	1	0	0	0	0	2
Wednesday	0	0	0	2	0	0	0	0	1	1	0	0	0	4
Thursday	0	0	0	1	0	0	1	0	0	0	0	0	0	2
Friday	0	0	0	0	0	1	1	0	0	0	0	0	0	2
Saturday	0	0	0	0	1	0	1	0	0	0	0	0	0	2
Total	0	0	0	3	3	1	3	0	3	1	0	2	0	16

Manner of Crash Collision	**16**
Non-collision (single vehicle)	2
Head-on (front to front)	2
Rear-end (front to rear)	6
Angle (oncoming left turn)	0
Broadside (front to side)	0
Sideswipe (same direction)	1
Sideswipe (opposite direction)	4
Rear to rear	0
Rear to side	0
Not reported	0
Other	1
Unknown	0

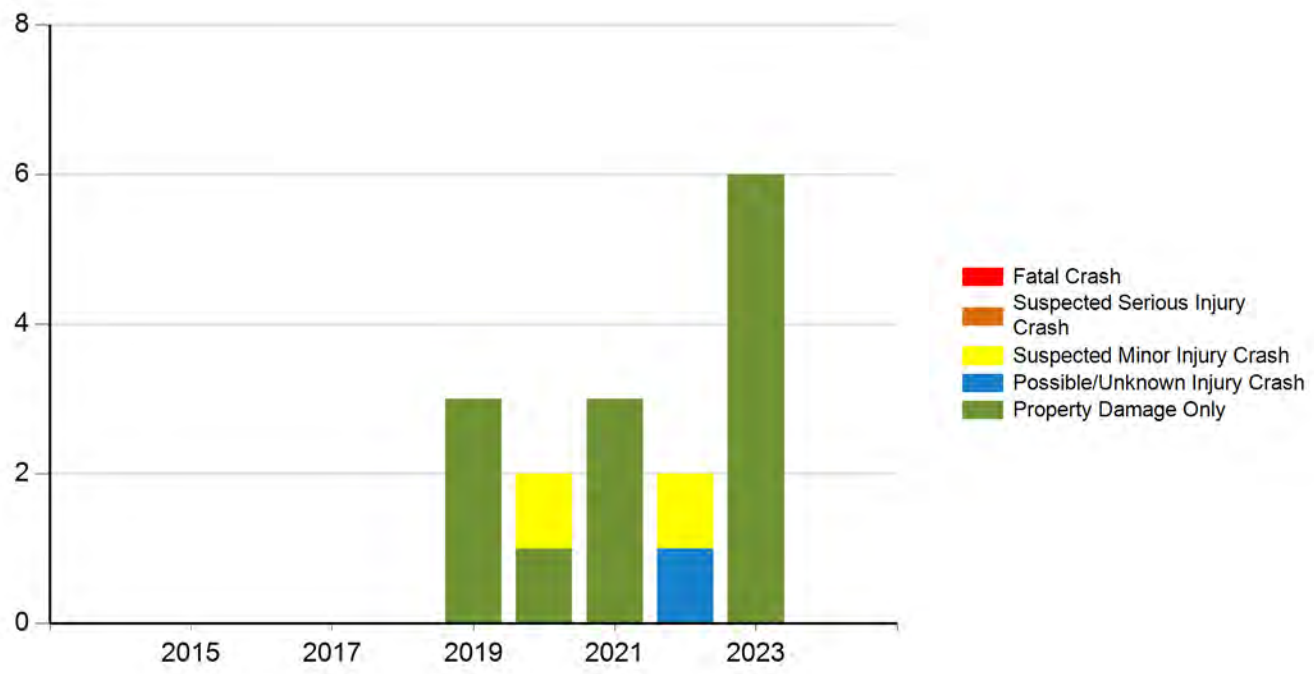
Surface Conditions	**16**
Dry	11
Wet	0
Ice/frost	2
Snow	3
Slush	0
Mud/dirt	0
Water (standing or moving)	0
Sand	0
Oil	0
Gravel	0
Not reported	0
Other	0
Unknown	0

Fixed Object Struck			**33**
Bridge overhead structure	0	Bridge pier or support	0
Bridge/bridge rail parapet	0	Curb/island/raised median	0
Ditch	0	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	1	Traffic sign support	0
Traffic signal support	0	Other post/pole/support	0
Fire hydrant	1	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)	31

Crash Severity - Annual

Crash Year	Fatal Crash	Suspected Serious Injury Crash	Suspected Minor Injury Crash	Possible/Unknown Injury Crash	Property Damage Only	**Total**
2014	0	0	0	0	0	0
2015	0	0	0	0	0	0
2016	0	0	0	0	0	0
2017	0	0	0	0	0	0
2018	0	0	0	0	0	0
2019	0	0	0	0	3	3
2020	0	0	1	0	1	2
2021	0	0	0	0	3	3
2022	0	0	1	1	0	2
2023	0	0	0	0	6	6
2024	0	0	0	0	0	0
Total	0	0	2	1	13	16

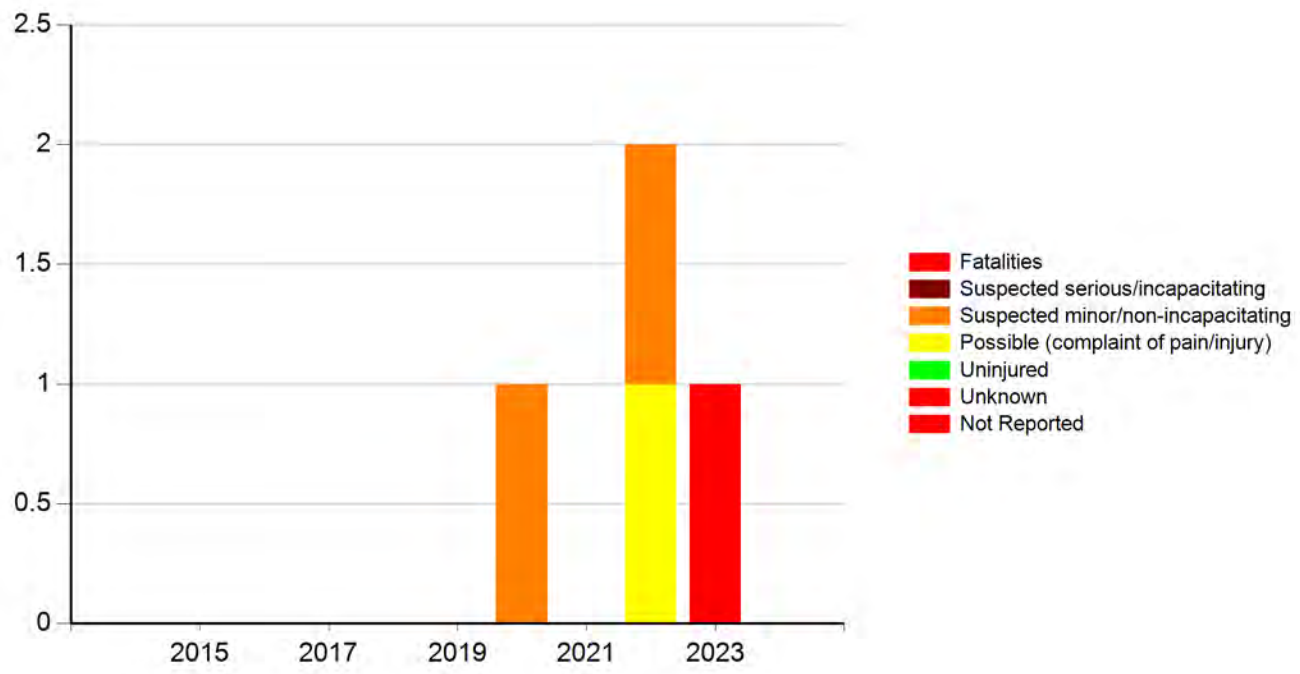
Severity/Year

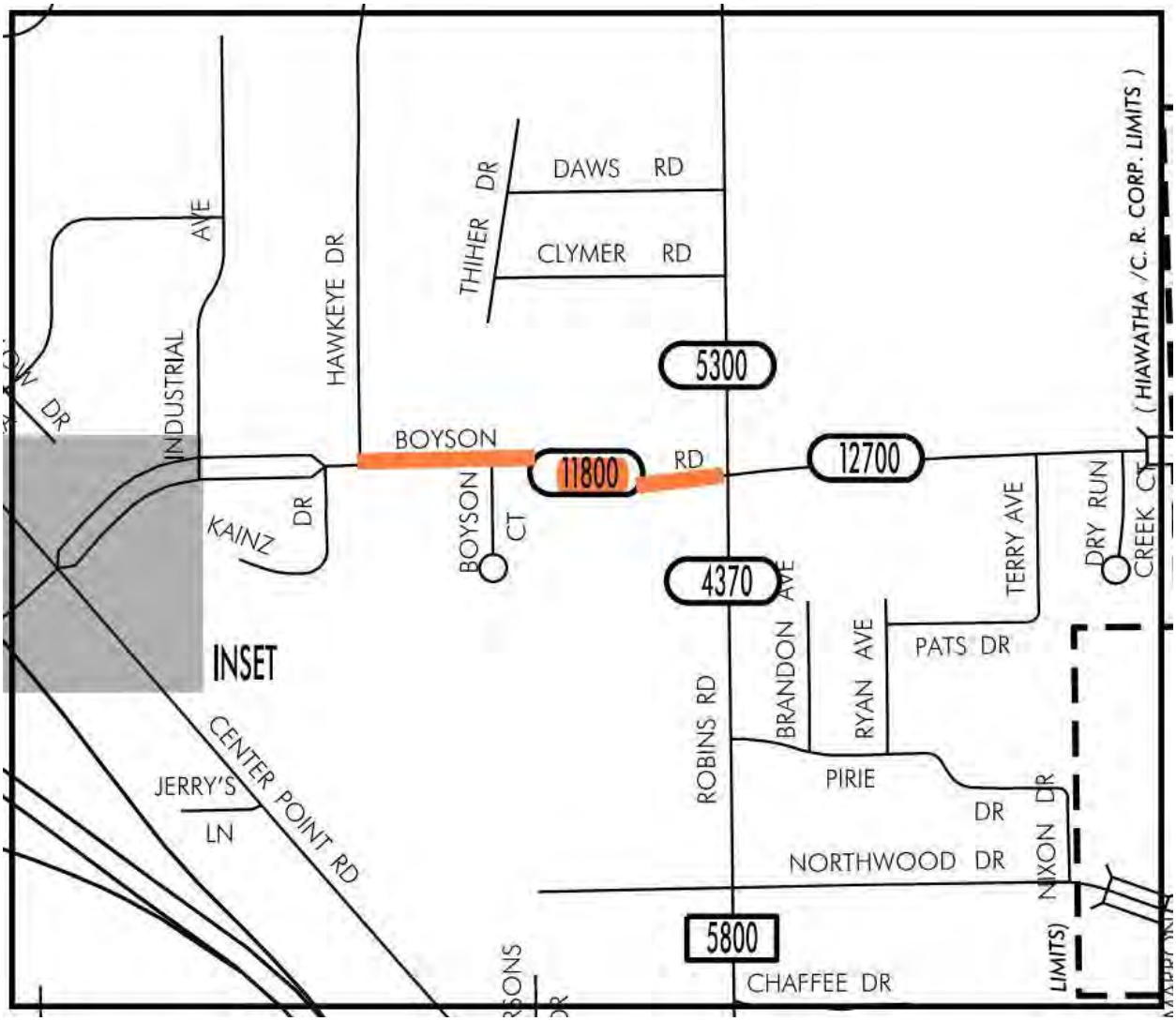


Injury Status - Annual

Crash Year	Fatalities	Suspected serious/incapacitating	Suspected minor/non-incapacitating	Possible (complaint of pain/injury)	Uninjured	Unknown	Not Reported	**Total**
2014	0	0	0	0	0	0	0	0
2015	0	0	0	0	0	0	0	0
2016	0	0	0	0	0	0	0	0
2017	0	0	0	0	0	0	0	0
2018	0	0	0	0	0	0	0	0
2019	0	0	0	0	0	0	0	0
2020	0	0	1	0	0	0	0	1
2021	0	0	0	0	0	0	0	0
2022	0	0	1	1	0	0	0	2
2023	0	0	0	0	0	0	1	1
2024	0	0	0	0	0	0	0	0
Total	0	0	2	1	0	0	1	4

Injury Status/Year





2021 Iowa DOT Traffic Map

Road Name	2021 Iowa DOT AADT
Boyson Road	11,800

K. Traffic Signal Layout, Type, Proposed Phasing, and Detector Locations

Not Applicable

County:	Linn	Prepared By:	Shive-Hattery
Location:	Boyson Road, from Hawkeye Drive to	Date Prepared:	8/15/2024
Proposed Improvements:	Convert Boyson Road and Boyson Court intersection from a two-way stop controlled (TWSC) configuration to a roundabout configuration.		
Estimated Improvement Cost:	$ 608,396		
Inflation on Crash Costs:	4%	Annual Maintenance:	2%
Discount Rate:	4%	(% of Improvement Cost)	
Estimated Service Life:	20	Annual Maintenance Cost:	$ 12,168

Method Choice: CRF Method

The Crash Reduction Factor (CRF) Method applies one to three CRFs to historical crashes to estimate reductions in future crashes. Crash Modification Factors (CMFs) can be converted to CRFs. For additional information, click the "Learn More" button.

Crash Reduction Factor (CRF) Method

Traffic Growth Factor:	1%
Number of CRFs:	1
Years of Crash History:	5

Combined CRF (Dominant Common Residuals Method)

Iowa DOT's preferred methodology for combining CRFs is Dominant Common Residuals, since it is more conservative than the other options.

	CRF 1:	Combined CRF	
CRF Value (%)	75	**75.0**	
Equivalent CMF	0.25		Is Dom. Com. Resd. Valid?
Combined CMF, if # used (DR)	0.25	0.25	TRUE
Combined CMF, if # used (Mult)	0.25		Is data entered before # CRF picked?
Pick Dom Com. Resd. Or Mult. Fo	0.25	0.25	FALSE

Crash Severity	Rounded Societal Costs	Crash History (Total):	CRF (from above)	Crash History - Annual Avg	Crashes Saved Annually
Fatal (K)	$ 4,200,000	0	75.0	**0.00**	**0.00**
Serious Injury (A)	$ 4,200,000	0	75.0	**0.00**	**0.00**
Minor Injury (B)	$ 280,000	2	75.0	**0.40**	**0.30**
Possible/Unknown Injury (C)	$ 130,000	1	75.0	**0.20**	**0.15**
Property Damage Only (O)	$ 20,000	13	75.0	**2.60**	**1.95**

Crash Severity	Annual Societal Benefit
Fatal (K)	**$ -**

County:	Linn	Prepared By:	Shive-Hattery
Location:	Boyson Road, from Hawkeye Drive to	Date Prepared:	8/15/2024

Serious Injury (A)	**$**	**-**
Minor Injury (B)	**$**	**84,000**
Possible/Unknown Injury (C)	**$**	**19,500**

County:	Linn	Prepared By:	Shive-Hattery
Location:	Boyson Road, from Hawkeye Drive to	Date Prepared:	8/15/2024
Property Damage Only (O)	$ 39,000		

Predictive Method

Existing Condition (All Crashes):		Location Characteristics:	Please Select
Alternative (All Crashes):			Please Select
Percent Change in Crashes	n/a		Iowa Crash Distribution 2017-2021

Crash Severity	Crash Distribution Based on Location Characteristics	Existing Condition Expected Crashes - Service Life	Alternative Expected Crashes - Service Life	Crashes Saved Over Service Life	Crashes Saved Annually
Fatal (K)	0.00%	0.00	0.00	**0.00**	**0.00**
Serious Injury (A)	0.00%	0.00	0.00	**0.00**	**0.00**
Minor Injury (B)	0.00%	0.00	0.00	**0.00**	**0.00**
Possible/Unknown Injury (C)	0.00%	0.00	0.00	**0.00**	**0.00**
Property Damage Only (O)	0.00%	0.00	0.00	**0.00**	**0.00**

Crash Severity	Rounded Societal Costs	Annual Societal Benefit
Fatal (K)	$ 4,200,000	$ -
Serious Injury (A)	$ 4,200,000	$ -
Minor Injury (B)	$ 280,000	$ -
Possible/Unknown Injury (C)	$ 130,000	$ -
Property Damage Only (O)	$ 20,000	$ -

Total Benefits and Costs

		Implementation Cost	$ 608,396
		Present Value of Maint.	$ 165,366
Present Value Benefits (Societal Benefits)	$ 2,104,826	Present Value Costs (Impl. and Maint. Costs)	$ 773,762
Present Value Net Return	$ 1,331,064		
Benefit Cost Ratio	**2.72**		

Form continues on next page

County:	Linn	Prepared By:	Shive-Hattery
Location:	Boyson Road, from Hawkeye Drive to	Date Prepared:	8/15/2024

No Input Necessary - No Custom Values In Use

General Customizations

No change to Crash Costs

No change to Discount Rate

No change to Maintenance Costs

Method-Specific Customizations

No change to Traffic Growth Rate

No change to Crash History

Rev. 07/23

Application for SITE-SPECIFIC TSIP FUNDS

GENERAL INFORMATION **DATE:** 7/18/2024

Location / Title of Project IA 13 & IA 100 INTERSECTION IMPROVEMENTS

Applicant CITY OF MARION

Contact Person JACOB HAHN Title DEPUTY CITY ENGINEER

Complete Mailing Address 1225 6TH AVE, MARION, IA 52302

Phone 319-743-6340 (Area Code) E-Mail JHAHN@CITYOFMARION.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)

Contact Person Title

Complete Mailing Address

Phone (Area Code) E-Mail

PLEASE COMPLETE THE FOLLOWING PROJECT INFORMATION:

Funding Amount

Total Safety Cost	$	500,000
Total Project Cost	$	617,250
Safety Funds Requested	**$**	**500,000**

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
2017048352	IA 13 & IA 100	☐	☐	-0.10	
		☐	☐		

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 Marion

Signed: _____ 7/18/24
Signature Date Signed

Jacob Hahn
Printed Name

Attest: _____ 7/18/24
Signature Date Signed

MICHAEL D. BARNALOW
Printed Name

RESOLUTION NO. 32021

RESOLUTION AUTHORIZING THE SUBMITTAL OF AN APPLICATION FOR TRAFFIC SAFETY IMPROVEMENT PROGRAM (TSIP) FUNDING FOR THE INTERSECTION OF HIGHWAY 100 AND HIGHWAY 13 TO ADD AN EASTBOUND RIGHT TURN LANE, CONVERT A SHARED LEFT TURN & THROUGH LANE TO A DEDICATED LEFT TURN LANE, AND ASSOCIATED IMPROVEMENTS (ANN-25-002)

WHEREAS, the Iowa Department of Transportation has established the TSIP and provides funding for locations where vehicular safety is a concern and documented; and

WHEREAS, the Highway 100 and Highway 13 intersection has been identified as a location where vehicular safety could be improved and funded by TSIP.

NOW THEREFORE, BE IT RESOLVED BY THE CITY COUNCIL OF THE CITY OF MARION, IOWA, that:

1. The City Council supports the application for TSIP funding.
2. The City Council hereby commits the additional City funds necessary for construction of the project beyond any TSIP funding, and;
3. The City Council hereby commits to accepting and maintaining these

Passed and approved on July 18, 2024.

Nicolas AbouAssaly

Nicolas AbouAssaly, Mayor

ATTEST:
I, Rachel Bolender, City Clerk of the City of Marion, Iowa hereby certify that at a meeting of the City Council of said City, held on the above date, among other proceedings the above was adopted.

Rachel Bolender

Rachel Bolender, City Clerk

MARION
Engineering Department

Existing Conditions:
The intersection of Highway's IA13 & IA100 is a large, four leg, signalized intersection with two through lanes in three of the four directions. There are two left turn lanes (one a shared left and thru) for eastbound traffic on IA 100 with about 200 feet of storage in the dedicated left turn lane. There are two left turn lanes for northbound traffic on IA 13 with about 400 feet of storage in each. For every other direction of traffic approaching the intersection there is one left turn bay. The left turn bays for southbound and westbound traffic are 105 feet and 80 feet, respectively. All left turn movements at this intersection are protected-only signal phasing. Due to the existing condition of the eastbound lanes having a shared left turn and thru lane, this results in eastbound and westbound traffic having split phasing that creates operational inefficiencies of the intersection. Right turn lanes exist for southbound and eastbound traffic. The posted speed limit of both highways on all sides of the intersection is 55 mph. The design speed for this intersection is 60 MPH, and clear zones are anticipated to be a minimum of 30' with 6:1 foreslopes.

Proposed Concept:
The proposed project will convert the eastbound shared left and thru lane into a left turn only lane, convert the eastbound right turn lane to a thru lane, and add a right turn lane. The proposed project will also lengthen the westbound left turn lane and include geometric improvements to the east leg to accommodate the lane reconfiguration of the eastbound traffic. Two traffic signals poles and mast arms will be replaced due to the reconfiguration, and all existing and proposed traffic signals will be upgraded to optimize signal timing and with planned interconnectivity with other signals along the highway corridor. Traffic signals will include retroreflective strips on the backplates. According to the TEAP Study dated February 2024 of this intersection and corridor, the implementation of these intersection improvements will allow for the eastbound and westbound movements to not have split phasing and will lead to better operational efficiencies of the intersection. There is sufficient right-of-way to complete the proposed improvements.

Safety Justification:
According to the Iowa Crash Analysis Tool (ICAT) over the past 5 years (2023-2019) there have been a reported 47 non-animal related crashes at or within a relative proximity of this intersection. Of those 44 crashes, 27 were rear end collisions. Increasing the intersection efficiency while adding safety features like retroreflective strips on backplates may reduce the likelihood of future accidents.

From the Iowa DOT 2021 traffic counts, IA 13 had an ADT volume of 22,500 vehicles south of the intersection while IA 100 had an ADT volume of 17,100 vehicles west of the intersection.

C

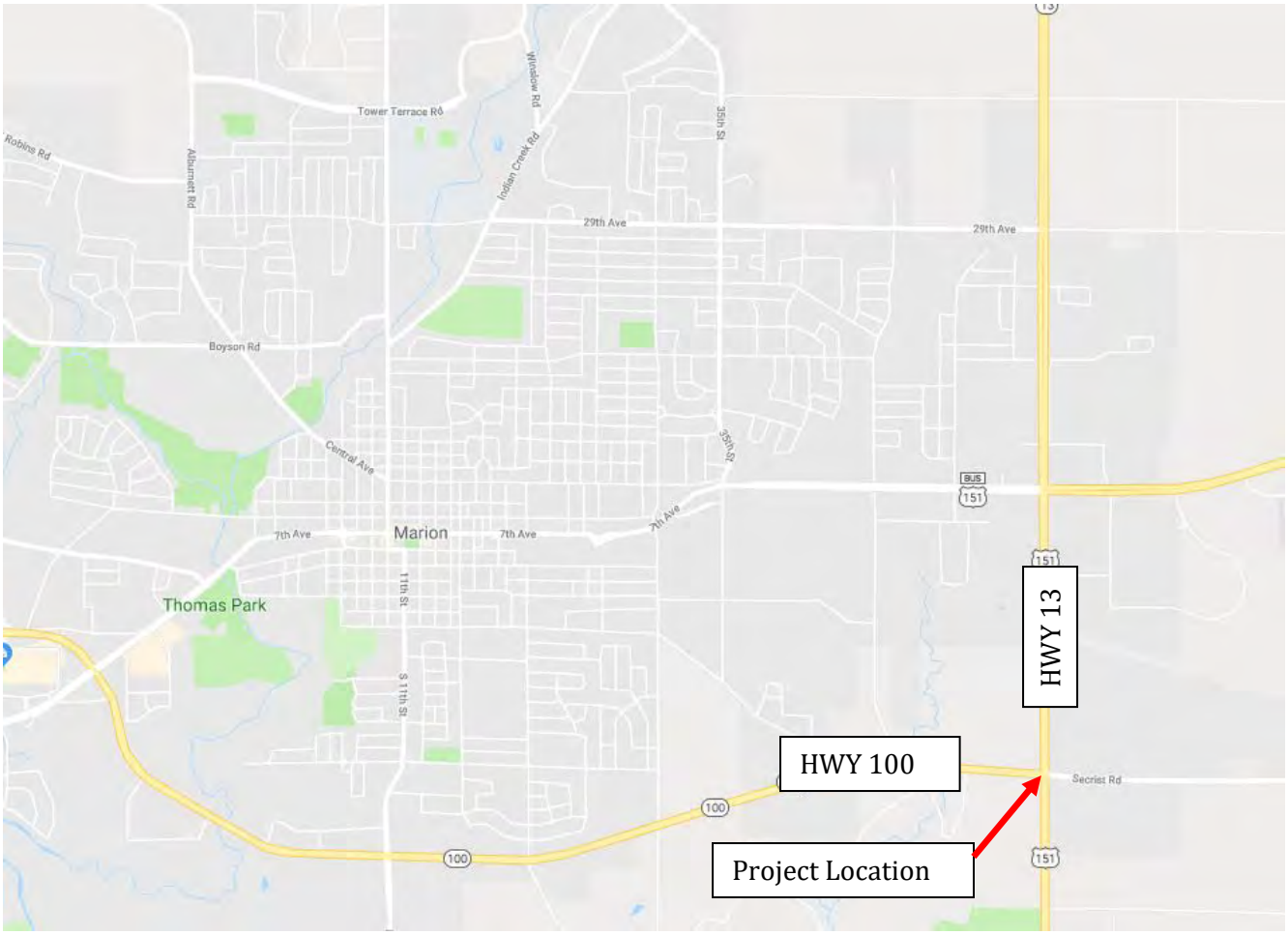
Highway 13 / Highway 100 Opinion of Probable Construction Costs						
ITEM NO.	ITEM	ESTIMATED QUANTITIY	UNIT	UNIT PRICE	TSIP NON PARTICIPATING	TSIP PARTICIPATING AMOUNT
1	Excavation, Class 10	2,000	CY	$25		$50,000
2	Granular Shoulder, Type B	600	TON	$30		$18,000
3	Subgrade Preparation	1,300	SY	$1		$1,300
4	Modified Subbase 12"	1,300	SY	$14		$17,550
5	Subdrain, 4" HDPE	800	LF	$15		$12,000
6	Subdrain Outlets	8	EA	$300		$2,400
7	Pavement, PCC 10"	1,100	SY	$70		$77,000
8	Pavement Removals	200	SY	$14		$2,800
9	Pavement Markings and Symbols Ren	1	LS	$2,000		$2,000
10	Pavement Markings and Symbols Gro	1	LS	$25,000		$25,000
11	Pavement Markings and Symbols	1	LS	$35,000		$35,000
12	Temporary Traffic Control	1	LS	$30,000		$30,000
13	Traffic Signal	1	LS	$225,000		$225,000
14	Traffic Signal Removal	1	LS	$20,000		$20,000
15	Mobilization	1	LS	$75,000		$75,000
16	Concrete Washout	1	LS	$1,000		$1,000
17	Relocate Sign & Posts	6	EA	$350		$2,100
18	Filter Socks	700	LF	$3		$2,100
19	Hydraulic Seeding, Seeding, Fertilizing	1	AC	$5,000		$5,000
19	Temporary RECP, Type 1B, Wood Ex	2,000	SY	$2		$4,000
20	Construction Survey	1	LS	$10,000	$10,000	
				TOTAL	**$10,000.00**	**$607,250.00**

MARION Engineering Department

August 15, 2024:	**Traffic Safety Improvement Program (TSIP) Submittal Deadline**
January 2025:	**Notice of Approval**
September 2025:	**Complete Project Design**
October 2025:	**Project Letting**
Spring 2026:	**Begin Construction**
Fall 2026:	**Complete Construction**

MAP E

MARION
Engineering Department



MARION
Engineering Department

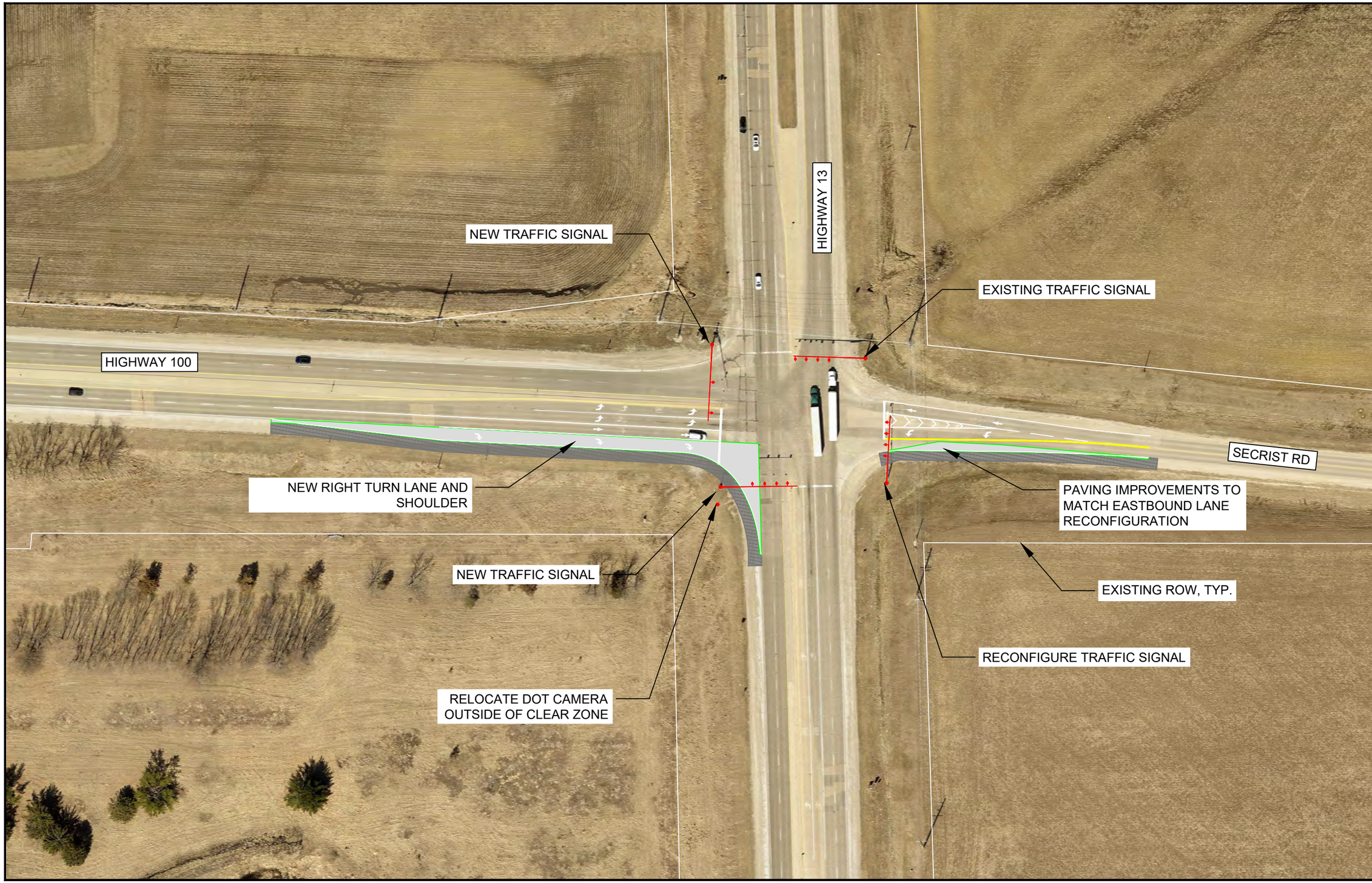
Looking North on Highway 13

Looking South on Highway 13

MARION Engineering Department

Looking East on Highway 100

Looking West on Secrist Rd



Sheet Description: PLAN VIEW

No.	Date:	Revisions

CITY OF MARION
ENGINEERING DEPARTMENT
MARION, IOWA

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Project: HWY 100 & HWY 13 INTERSECTION IMPROVEMENTS

Page G

Proj. No. P-01-26

Drawn/Designed By: SMK | Checked: JAH | Reviewed: MDB | Book: smk2 | Scale: 1"=100'

CITY OF MARION
ENGINEERING DEPARTMENT
MARION, IOWA

No.	Date:	Revisions

Sheet Description:
AERIAL VIEW

Project:
HWY 100 & HWY 13
INTERSECTION IMPROVEMENTS

Page
H

Proj. No.
P-01-26

Drawn/Designed By: SMK | Checked: JAH | Reviewed: MDB | Book: smk2 | Scale: 1"=100'

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Iowa Crash Analysis Tool
Quick Report
2019-2023

Crash Severity	50
Fatal Crash	0
Suspected Serious Injury Crash	1
Suspected Minor Injury Crash	3
Possible/Unknown Injury Crash	7
Property Damage Only	39

Injury Status Summary	19
Fatalities	0
Suspected serious/incapacitating	1
Suspected minor/non-incapacitating	4
Possible (complaint of pain/injury)	10
Uninjured	0
Unknown	0
Not Reported	4

Property/Vehicles/Occupants	
Property Damage Total (dollars):	332,205.00
Average (per crash dollars):	6,644.10
Total Vehicles:	100.00
Average (per crash):	2.00
Total Occupants:	133.00
Average (per crash):	2.66

Average Severity	
Fatalities/Fatal Crash:	0.00
Fatalities/Crash:	0.00
Injuries/Crash:	0.30
Major Injuries/Crash:	0.02
Minor Injuries/Crash:	0.08
Possible/Unknown Injuries/Crash:	0.20

Major Cause			50
Animal	3	Ran traffic signal	2
Ran stop sign	0	Failed to yield to emergency vehicle	0
FTYROW: At uncontrolled intersection	0	FTYROW: Making right turn on red signal	0
FTYROW: From stop sign	0	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	1	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	4
Exceeded authorized speed	0	Improper or erratic lane changing	0
Operating vehicle in an reckless/erratic/care...	3	Followed too close	27
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	2
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...	1
Driver Distraction: Inattentive/lost in thou...	0	Driver Distraction: Other interior distracti...	0
Driver Distraction: Exterior distraction	0	Ran off road - right	1
Ran off road - straight	0	Ran off road - left	0
Lost control	0	Swerving/Evasive Action	2
Over correcting/over steering	0	Failed to keep in proper lane	1
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	1	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	1
Unknown	0	Not reported	0
Other: No improper action	1		

Iowa Crash Analysis Tool
Quick Report
2019-2023

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	1	0	1	1	1	2	0	6
Monday	0	0	0	2	0	1	2	1	2	0	0	0	0	8
Tuesday	0	0	0	3	2	0	0	2	1	1	0	0	0	9
Wednesday	0	0	0	0	1	1	0	1	1	0	0	0	0	4
Thursday	0	0	0	2	0	0	0	2	3	1	0	0	0	8
Friday	0	0	0	0	1	1	1	0	3	1	1	1	0	9
Saturday	0	0	0	1	0	2	1	0	1	0	0	1	0	6
Total	0	0	0	8	4	5	5	6	12	4	2	4	0	50

Manner of Crash Collision	**50**
Non-collision (single vehicle)	2
Head-on (front to front)	0
Rear-end (front to rear)	35
Angle (oncoming left turn)	3
Broadside (front to side)	2
Sideswipe (same direction)	5
Sideswipe (opposite direction)	0
Rear to rear	0
Rear to side	0
Not reported	3
Other	0
Unknown	0

Surface Conditions	**50**
Dry	36
Wet	8
Ice/frost	0
Snow	2
Slush	1
Mud/dirt	0
Water (standing or moving)	0
Sand	0
Oil	0
Gravel	0
Not reported	3
Other	0
Unknown	0

Fixed Object Struck			**100**
Bridge overhead structure	0	Bridge pier or support	0
Bridge/bridge rail parapet	0	Curb/island/raised median	0
Ditch	0	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)	100

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	1	0	0	0	1
= 17	1	0	0	0	1
= 18	2	2	0	0	4
= 19	3	1	0	0	4
= 20	0	0	0	0	0
>= 21 and <= 24	3	3	0	0	6
>= 25 and <= 29	6	5	0	0	11
>= 30 and <= 34	2	7	0	0	9
>= 35 and <= 39	3	5	0	0	8
>= 40 and <= 44	6	8	0	0	14
>= 45 and <= 49	0	4	0	0	4
>= 50 and <= 54	6	6	0	0	12
>= 55 and <= 59	6	4	0	0	10
>= 60 and <= 64	3	10	0	0	13
>= 65 and <= 69	0	1	0	0	1
>= 70 and <= 74	0	1	0	0	1
>= 75 and <= 79	0	0	0	0	0
>= 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	42	57	1	0	100

Drug/Alcohol Related	50
Drug	0
Alcohol (< Statutory)	0
Alcohol (Statutory)	1
Drug and Alcohol (< Statutory)	0
Drug and Alcohol (Statutory)	0
Refused	0
Under Influence of Alcohol/Drugs/Medications	0
None Indicated	49

Alcohol Test Given	100
None	98
Blood	0
Urine	0
Breath	1
Vitreous	0
Refused	0
Not reported	1

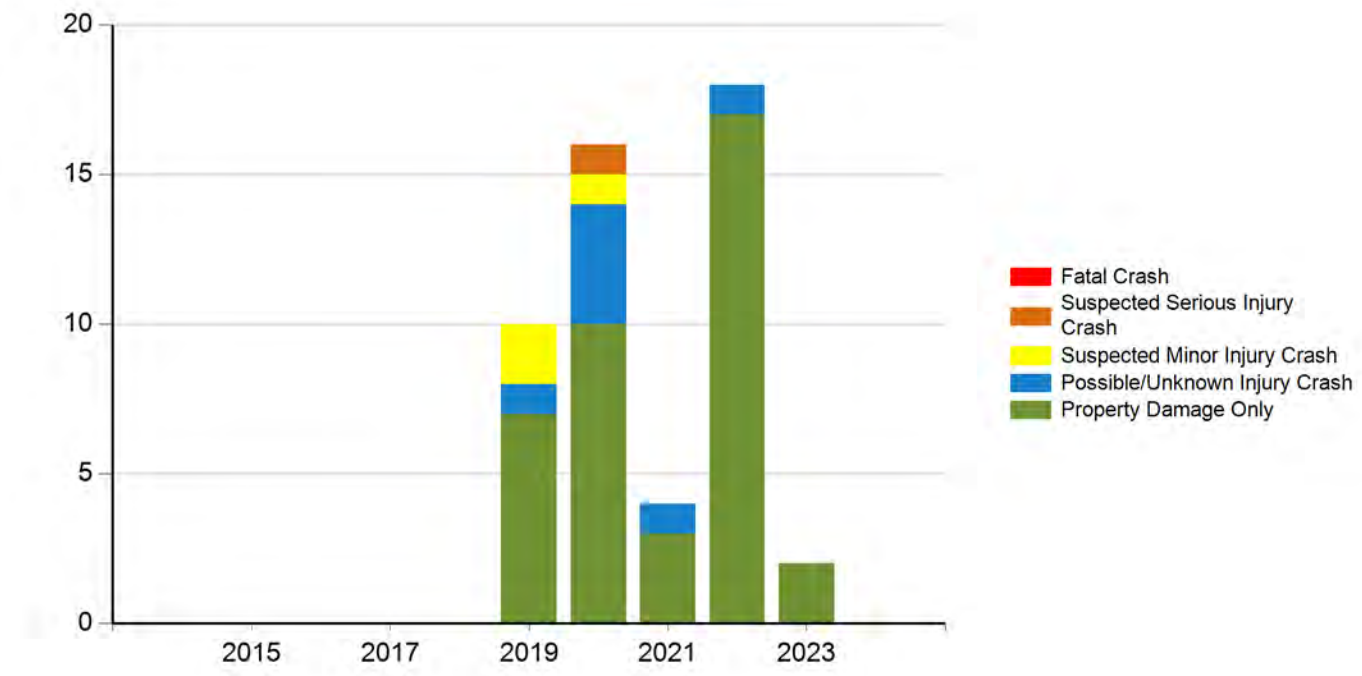
Drug Test Given	100
None	99
Blood	0
Urine	0
Breath	0
Vitreous	0
Refused	0
Not reported	1

Drug Test Result	100
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	100
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**
2014	0	0	0	0	0	0
2015	0	0	0	0	0	0
2016	0	0	0	0	0	0
2017	0	0	0	0	0	0
2018	0	0	0	0	0	0
2019	0	0	2	1	7	10
2020	0	1	1	4	10	16
2021	0	0	0	1	3	4
2022	0	0	0	1	17	18
2023	0	0	0	0	2	2
2024	0	0	0	0	0	0
Total	0	1	3	7	39	50

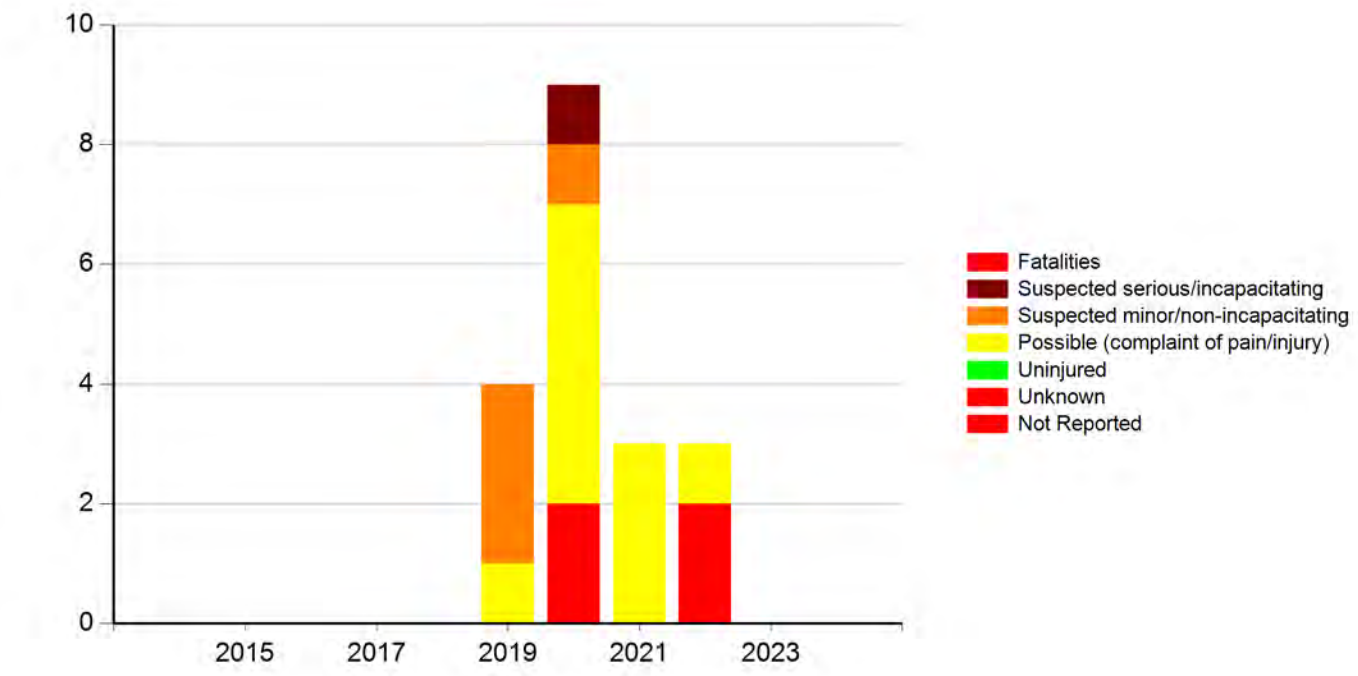
Severity/Year



Injury Status - Annual

Crash Year	Fatalities	Suspected serious/incapacitating	Suspected minor/non-incapacitating	Possible (complaint of pain/injury)	Uninjured	Unknown	Not Reported	**Total**
2014	0	0	0	0	0	0	0	0
2015	0	0	0	0	0	0	0	0
2016	0	0	0	0	0	0	0	0
2017	0	0	0	0	0	0	0	0
2018	0	0	0	0	0	0	0	0
2019	0	0	3	1	0	0	0	4
2020	0	1	1	5	0	0	2	9
2021	0	0	0	3	0	0	0	3
2022	0	0	0	1	0	0	2	3
2023	0	0	0	0	0	0	0	0
2024	0	0	0	0	0	0	0	0
Total	0	1	4	10	0	0	4	19

Injury Status/Year



Meeting the following criteria

Jurisdiction: Statewide
Year: 2019, 2020, 2021, 2022, 2023
Map Selection: Yes
Filter: None

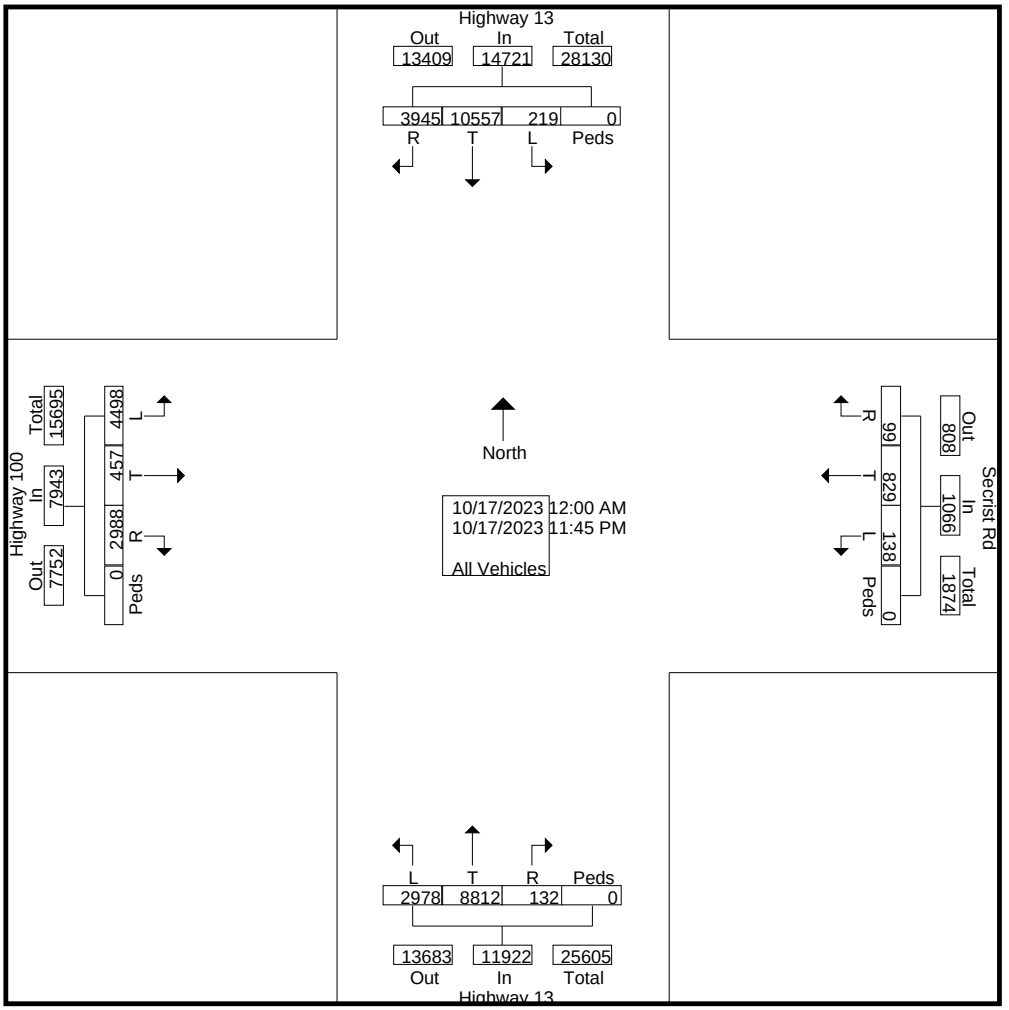
Analyst Information

Snyder & Associates

2727 SW Snyder Blvd
Ankeny, IA 50023

IA Highway 13 & IA Highway 100
IA 13 Corridor TEAP Study
Marion, IA
122.1000.01K

File Name : TMV-City_HWY13-HWY100_10-17-23
Site Code :
Start Date : 10/17/2023
Page No : 4



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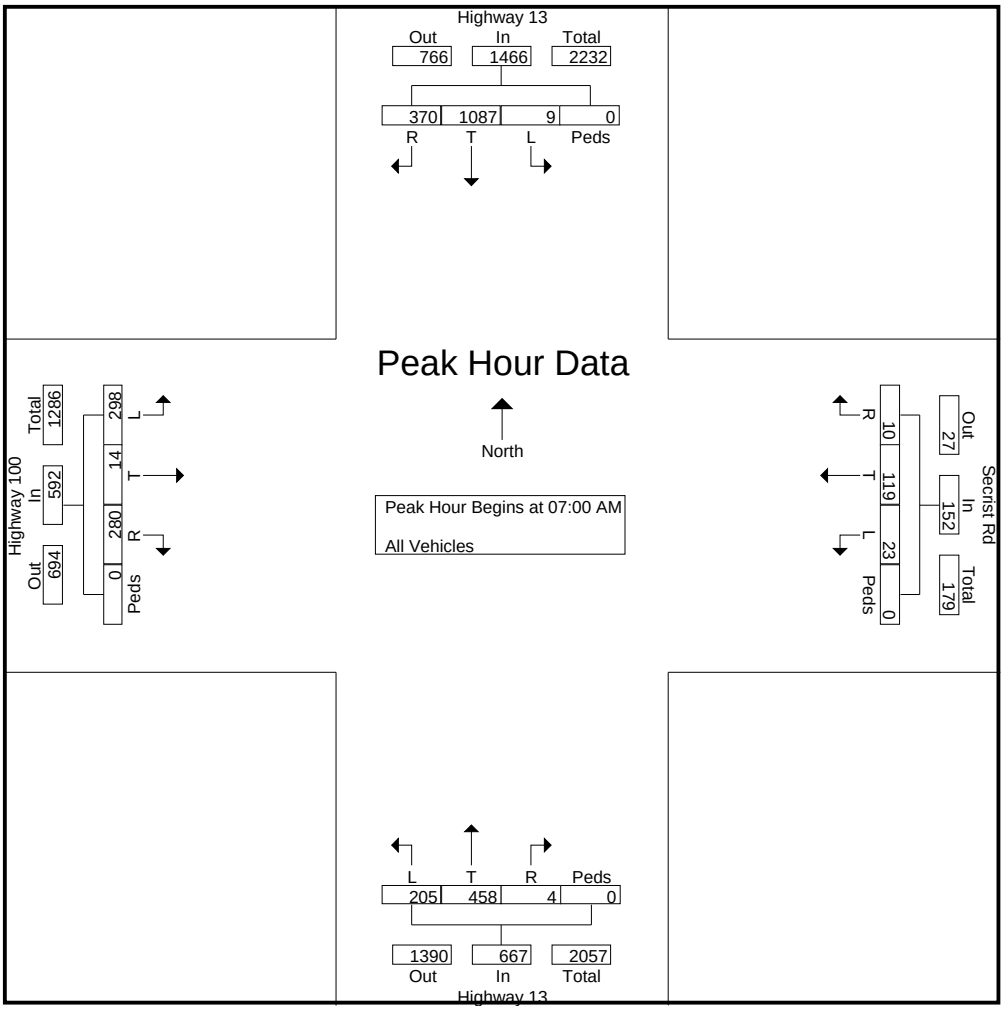
File Name : TMV-City_HWY13-HWY100_10-17-23
Site Code :
Start Date : 10/17/2023
Page No : 5

	Highway 13 Soutbound					Secrist Rd Westbound					Highway 13 Northbound					Highway 100 Eastbound					
Start Time	L	T	R	Peds	App. Total	L	T	R	Peds	App. Total	L	T	R	Peds	App. Total	L	T	R	Peds	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 07:00 AM																					
07:00 AM	0	241	83	0	324	5	15	3	0	23	35	106	**1**	0	142	77	1	58	0	136	625
07:15 AM	**5**	282	79	0	366	4	32	**6**	0	42	**70**	**130**	1	0	**201**	76	3	63	0	142	751
07:30 AM	2	**290**	**115**	0	**407**	**8**	**37**	1	0	**46**	49	98	1	0	148	65	3	**83**	0	151	**752**
07:45 AM	2	274	93	0	369	6	35	0	0	41	51	124	1	0	176	**80**	**7**	76	0	**163**	749
Total Volume	9	1087	370	0	1466	23	119	10	0	152	205	458	4	0	667	298	14	280	0	592	2877
% App. Total	0.6	74.1	25.2	0		15.1	78.3	6.6	0		30.7	68.7	0.6	0		50.3	2.4	47.3	0		
PHF	.450	.937	.804	.000	.900	.719	.804	.417	.000	.826	.732	.881	1.00	.000	.830	.931	.500	.843	.000	.908	.956



Snyder & Associates

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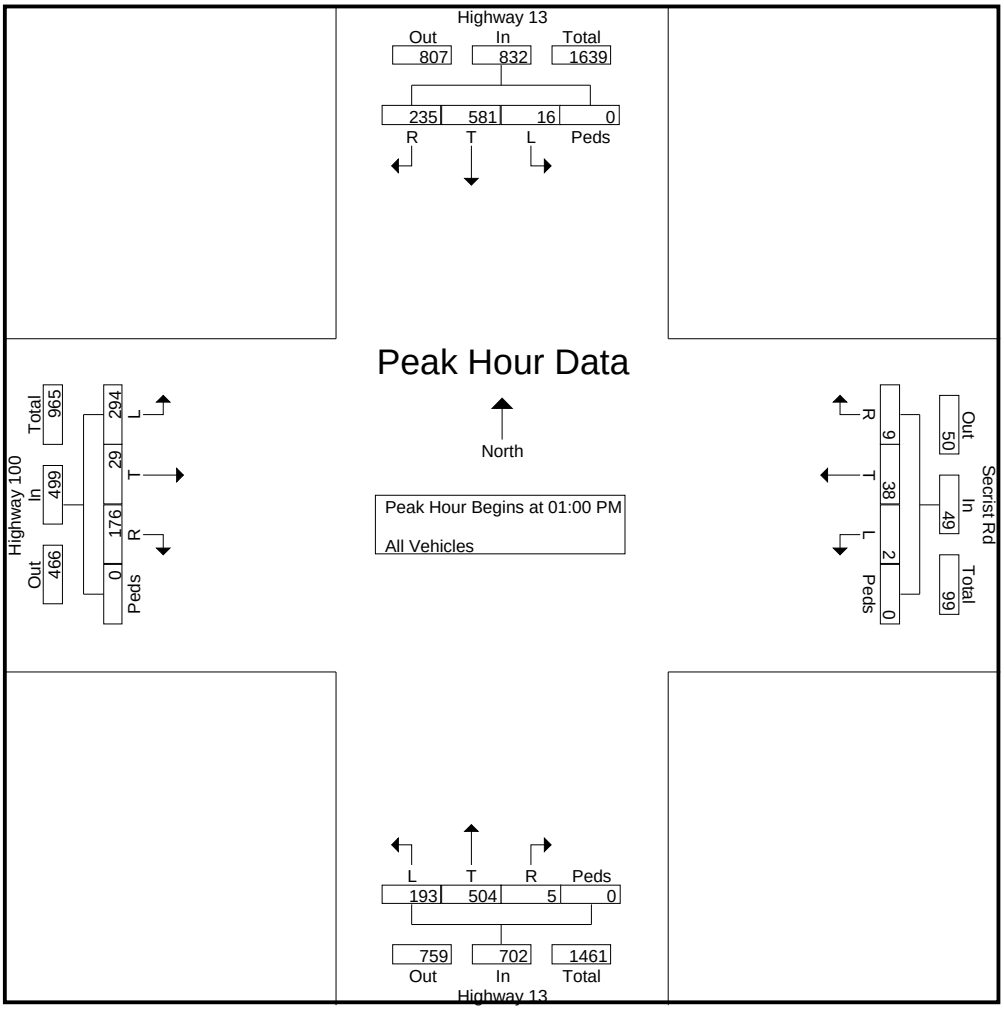
Ankeny, IA 50023

IA Highway 13 & IA Highway 100
IA 13 Corridor TEAP Study
Marion, IA
122.1000.01K

File Name : TMV-City_HWY13-HWY100_10-17-23
Site Code :
Start Date : 10/17/2023
Page No : 6

	Highway 13 Soutbound					Secrist Rd Westbound					Highway 13 Northbound					Highway 100 Eastbound					
Start Time	L	T	R	Peds	App. Total	L	T	R	Peds	App. Total	L	T	R	Peds	App. Total	L	T	R	Peds	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	**7**	**156**	54	0	**217**	**1**	9	2	0	12	44	115	0	0	159	79	6	**55**	0	**140**	**528**
01:15 PM	3	140	52	0	195	1	7	**4**	0	12	47	**139**	**3**	0	**189**	**80**	4	41	0	125	521
01:30 PM	1	149	61	0	211	0	10	2	0	12	50	127	2	0	179	64	**12**	42	0	118	520
01:45 PM	5	136	**68**	0	209	0	**12**	1	0	**13**	**52**	123	0	0	175	71	7	38	0	116	513
Total Volume	16	581	235	0	832	2	38	9	0	49	193	504	5	0	702	294	29	176	0	499	2082
% App. Total																					
PHF	.571	.931	.864	.000	.959	.500	.792	.563	.000	.942	.928	.906	.417	.000	.929	.919	.604	.800	.000	.891	.986



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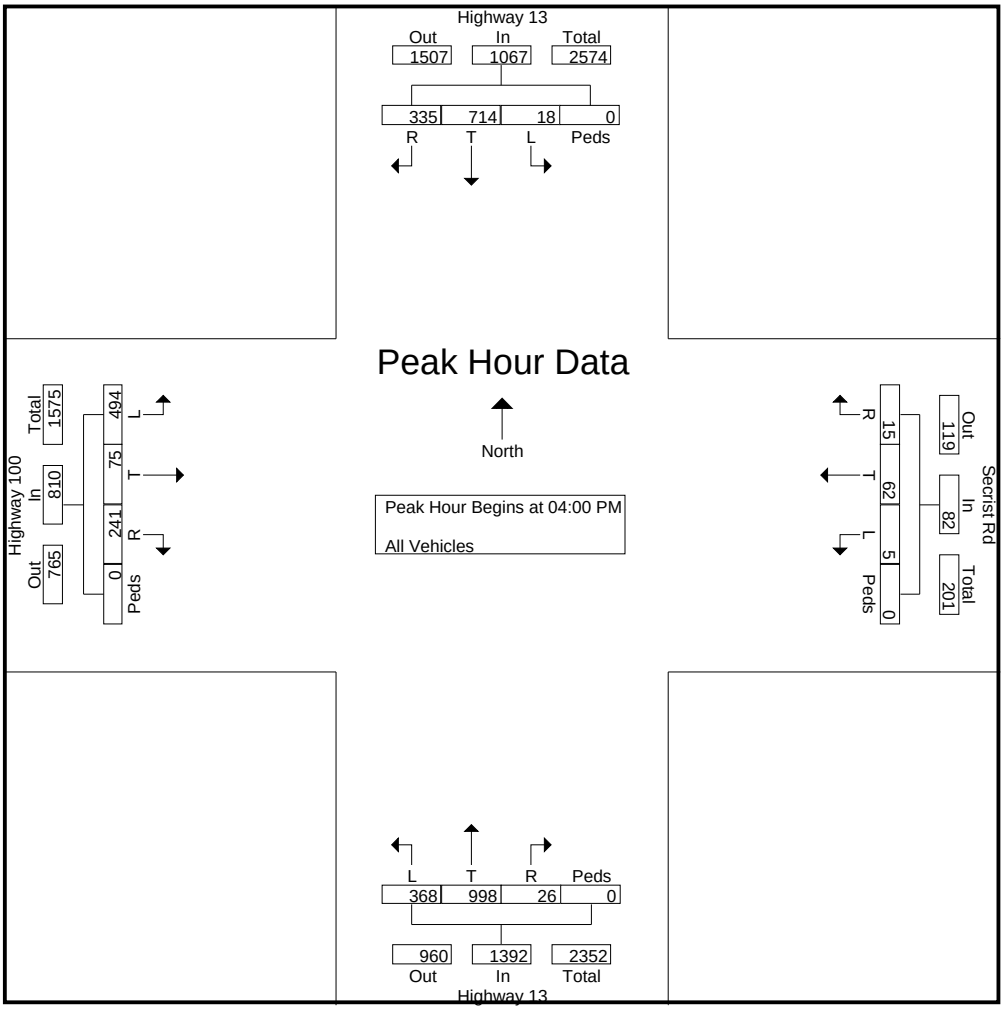
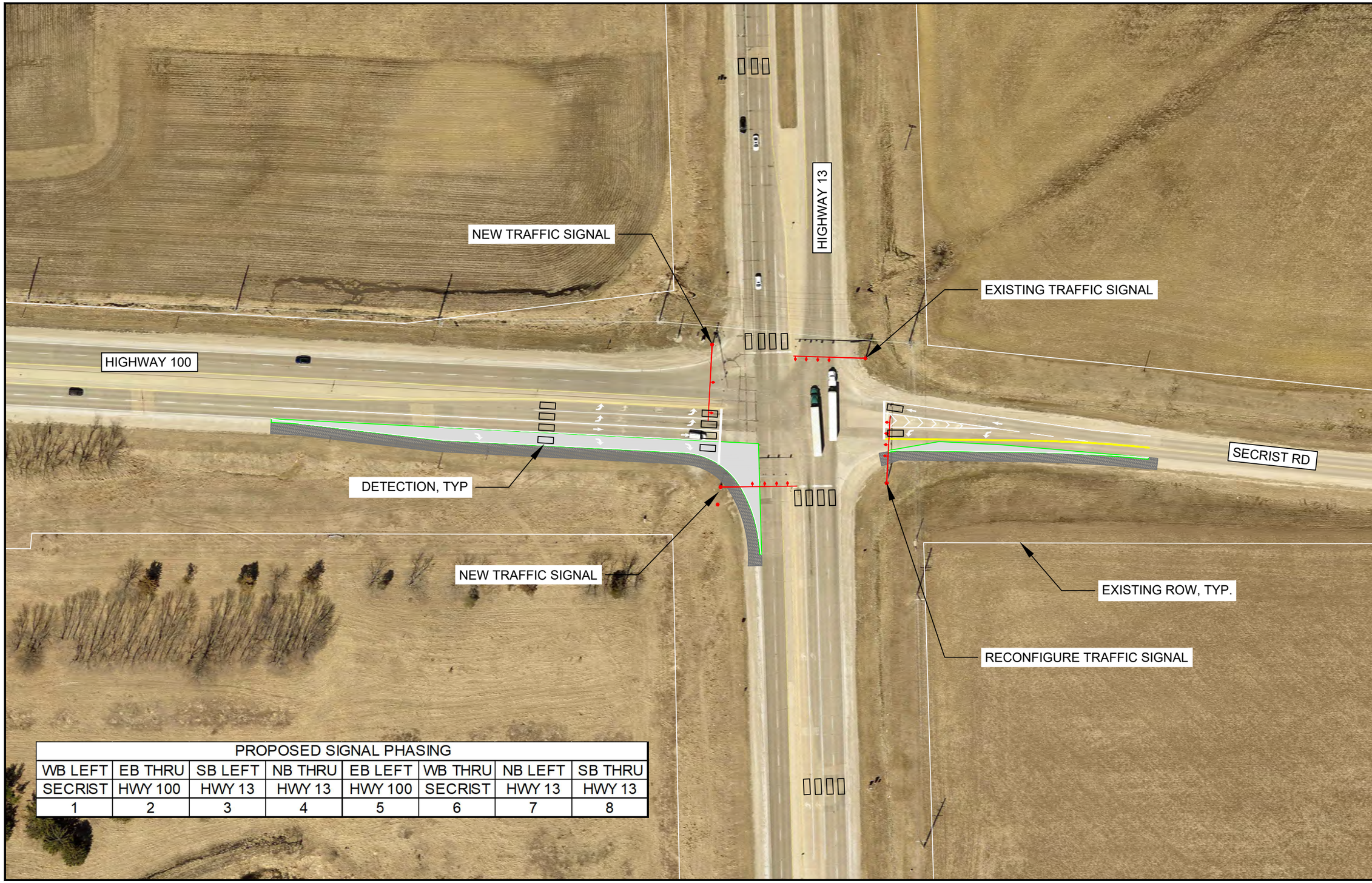
File Name : TMV-City_HWY13-HWY100_10-17-23
Site Code :
Start Date : 10/17/2023
Page No : 7

	Highway 13 Soutbound					Secrist Rd Westbound					Highway 13 Northbound					Highway 100 Eastbound					
Start Time	L	T	R	Peds	App. Total	L	T	R	Peds	App. Total	L	T	R	Peds	App. Total	L	T	R	Peds	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 04:00 PM																					
04:00 PM	4	169	87	0	260	**2**	16	**5**	0	23	81	273	5	0	359	109	**21**	56	0	186	828
04:15 PM	**7**	188	83	0	278	1	13	2	0	16	97	242	5	0	344	**142**	15	61	0	**218**	**856**
04:30 PM	2	**213**	**103**	0	**318**	2	12	4	0	18	88	209	**11**	0	308	113	21	**62**	0	196	840
04:45 PM	5	144	62	0	211	0	**21**	4	0	**25**	**102**	**274**	5	0	**381**	130	18	62	0	210	827
Total Volume	18	714	335	0	1067	5	62	15	0	82	368	998	26	0	1392	494	75	241	0	810	3351
% App. Total																					
PHF	.643	.838	.813	.000	.839	.625	.738	.750	.000	.820	.902	.911	.591	.000	.913	.870	.893	.972	.000	.929	.979





PROPOSED SIGNAL PHASING							
WB LEFT	EB THRU	SB LEFT	NB THRU	EB LEFT	WB THRU	NB LEFT	SB THRU
SECRIST	HWY 100	HWY 13	HWY 13	HWY 100	SECRIST	HWY 13	HWY 13
1	2	3	4	5	6	7	8

Sheet Description:
TRAFFIC SIGNAL LAYOUT

7/2/2024 4:48 PM

No.	Date:	Revisions

CITY OF MARION
ENGINEERING DEPARTMENT
MARION, IOWA

S:\ENGINEERING\PROJECTS\2025\HWY 100 & HWY 13 TSIP\CONCEPT PLAN.DWG

Project:
HWY 100 & HWY 13
INTERSECTION IMPROVEMENTS

Page
K

Proj. No.
P-01-26

Drawn/Designed By: SMK | Checked: JAH | Reviewed: MDB | Book: smk2 | Scale: 1"=10'

County:	LINN	Prepared By:	CITY OF MARION
Location:	IA 13 AND IA 100	Date Prepared:	7/1/2024
Proposed Improvements:	INTERSECTION IMPROVEMENTS INCLUDING NEW TURN LANES AND REPLACEMENT & RECONFIGURATION OF TRAFFIC SIGNALS.		
Estimated Improvement Cost:	$ 617,250		
Inflation on Crash Costs:	4%	Annual Maintenance:	2%
Discount Rate:	4%	(% of Improvement Cost)	
Estimated Service Life:	15	Annual Maintenance Cost:	$ 12,345

Method Choice: CRF Method

The Crash Reduction Factor (CRF) Method applies one to three CRFs to historical crashes to estimate reductions in future crashes. Crash Modification Factors (CMFs) can be converted to CRFs. For additional information, click the "Learn More" button.

Crash Reduction Factor (CRF) Method

Traffic Growth Factor:	1%
Number of CRFs:	3
Years of Crash History:	5

Combined CRF (Dominant Common Residuals Method)

Iowa DOT's preferred methodology for combining CRFs is Dominant Common Residuals, since it is more conservative than the other options.

	CRF 1:	CRF 2:	CRF 3:	**Combined CRF**
CRF Value (%)	5	6	25	**26.0**

Crash Severity	Rounded Societal Costs	Crash History (Total):	CRF (from above)	Crash History - Annual Avg	Crashes Saved Annually
Fatal (K)	$ 4,200,000	0	26.0	**0.00**	**0.00**
Serious Injury (A)	$ 4,200,000	1	26.0	**0.20**	**0.05**
Minor Injury (B)	$ 280,000	3	26.0	**0.60**	**0.16**
Possible/Unknown Injury (C)	$ 130,000	7	26.0	**1.40**	**0.36**
Property Damage Only (O)	$ 20,000	36	26.0	**7.20**	**1.87**

Crash Severity	Annual Societal Benefit
Fatal (K)	**$ -**
Serious Injury (A)	**$ 218,110**
Minor Injury (B)	**$ 43,622**
Possible/Unknown Injury (C)	**$ 47,257**
Property Damage Only (O)	**$ 37,390**

Total Benefits and Costs

		Implementation Cost	$ 617,250
		Present Value of Maint.	$ 137,256
Present Value Benefits (Societal Benefits)	$ 4,102,917	Present Value Costs (Impl. and Maint. Costs)	$ 754,506
Present Value Net Return	$ 3,348,411		
Benefit Cost Ratio	**5.44**		

Form continues on next page

County:	LINN	Prepared By:	CITY OF MARION
Location:	IA 13 AND IA 100	Date Prepared:	7/1/2024

No Input Necessary - No Custom Values In Use

General Customizations

No change to Crash Costs

No change to Discount Rate

No change to Maintenance Costs

Method-Specific Customizations

No change to Traffic Growth Rate

No change to Crash History

Application for Iowa Department of Transportation Traffic Safety Improvement Program (TSIP)

Dace Avenue / Leech Avenue 3 Lane Conversion

City of Sioux City

Table of Contents

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A

Rev. 07/23

Application for SITE-SPECIFIC TSIP FUNDS

GENERAL INFORMATION **DATE:** 7/29/2024

Location / Title of Project Dace Avenue / Leech Avenue 3 Lane Conversion

Applicant City of Sioux City

Contact Person Katie Eickholt Title Civil Engineer

Complete Mailing Address PO Box 447

Sioux City, IA 51102

Phone 712-224-6027 (Area Code) E-Mail keickholt@sioux-city.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) _____

Contact Person _____ Title _____

Complete Mailing Address _____

_____

Phone _____ (Area Code) E-Mail _____

PLEASE COMPLETE THE FOLLOWING PROJECT INFORMATION:

Funding Amount

Total Safety Cost	$	91,804.05
Total Project Cost	$	91,804.05
Safety Funds Requested	**$**	**91,804.05**

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
		☐	☐		
		☐	☐		

A

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 Sioux City

Signed: _____ AUG 12 2024

Signature — Date Signed

Robert K. Padmore, City Manager

Printed Name

Attest: _____ AUG 12 2024

Signature — Date Signed

Heidi Farrens, City Clerk

Printed Name

A

RESOLUTION NO. 2024 - 0819
with attachments

RESOLUTION AUTHORIZING AND APPROVING SUBMISSION OF A GRANT APPLICATION TO THE IOWA DEPARTMENT OF TRANSPORTATION TRAFFIC SAFETY IMPROVEMENT PROGRAM FOR FY2026 FOR THE COST OF IMPROVEMENTS FOR THE DACE AVENUE / LEECH AVENUE 3 LANE CONVERSION IN CONNECTION WITH THE GORDON DRIVE VIADUCT PROJECT.

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

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

WHEREAS, the City Council previously adopted and approved the Dace Avenue / Leech Avenue 3 Lane Conversion design option in connection with the Gordon Drive Viaduct Project for incorporation into the final design plans on May 13, 2024 under Resolution No. 2024-0538; and

WHEREAS, the City desires to utilizes funds available in the Iowa Department of Transportation Traffic Safety Improvement Program to cover the costs of improvements for the Dace Avenue / Leech Avenue 3 Lane Conversion in connection with the Gordon Drive Viaduct Project; and

WHEREAS, there is attached hereto and by this reference made a part hereof, a Grant Application to the Iowa Department of Transportation Traffic Safety Improvement Program, which Grant Application should be approved as to form and content.

NOW, THEREFORE, BE IT HEREBY RESOLVED BY THE CITY COUNCIL OF THE CITY OF SIOUX CITY, IOWA that the Engineering Division is hereby authorized and directed to submit a Grant Application to the Iowa Department of Transportation Traffic Safety Improvement Program to request funding to cover the costs of improvements for the Dace Avenue / Leech Avenue 3 Lane Conversion in connection with the Gordon Drive Viaduct Project.

BE IT FURTHER RESOLVED, that the City Manager and City Clerk are hereby authorized and directed to execute said Grant Application for and on behalf of the City.

PASSED AND APPROVED: August 12, 2024

Robert E. Scott, Mayor

ATTEST:

Heidi Farrens, City Clerk

B. NARRATIVE

BACKGROUND

The City of Sioux City is submitting this application for Traffic Safety Improvement Program funds under the Site-Specific Projects category. Dace Avenue from Floyd Boulevard to S Steuben Street and Leech Avenue from S Steuben Street to IA-376/S Lewis Boulevard is 0.7-miles long and currently a four-lane road with a 30-mph posted speed. The road is 53-foot wide with curb & gutter, and no shoulders. There is sidewalk on both sides. Dace Avenue intersects with 3 rail crossings, Expo Center Drive, and S Steuben Street. Leech Avenue intersects with one rail crossing, S Stueben Street, S Morgan Street, Cunningham Drive, Chicago Avenue, and IA-376/S Lewis Boulevard.

CRASH HISTORY

The existing four-lane configuration in conjunction with the rising traffic volumes has led to a trend of multiple annual crashes. Crash history for this corridor was collected from the Iowa DOT ICAT website and was evaluated from 2019 to 2023 to identify trends and safety issues with the current geometry and operations. In the past 5 years, fifty (50) crashes have occurred involving ninety-eight (98) vehicles and one hundred and thirty-one (131) occupants in this corridor with only minor injuries and property damage reported. Refer to section I for the full crash history summary report generated utilizing the Iowa Crash Analysis Tool.

PROPOSED IMPROVEMENTS

Due to the amount and types of crashes in the corridor, the amount of access points number of intersections, and traffic volumes, it is proposed to remove the current stripping configuration and restripe the road as a three-lane road with a middle two-way left-turn lane (TWLTL) to increase safety by removing turning vehicles from the through lanes. Bike lanes will also be added as part of the improvements to enhance access for bicyclists to the cities trail system, Chris Larson Park, Expo Center, and downtown economic area from the residential areas on the east side of Lewis Boulevard. This modification per CRF #RS-35 will reduce crashes in this area by a factor of thirty (30) for all crash types and severities.

CONCLUSION

The improvements to the corridor are being done in preparation for the Iowa DOT Gordon Drive Viaduct Project. This project is anticipated to start construction in 2028 and will include a connection from Cunningham Drive to Gordon Drive. Improvements and striping along Cunningham Drive along with modifications to the IA-376/S Lewis Boulevard intersection are being coordinated with this project and will be completed with the Iowa DOT project. The proposed improvements being made as detailed in this grant application aim to enhance the corridor by improving the accommodations for turning vehicles, improving the safety of left turning vehicles, and accommodate future traffic growth in the area. Overall, these changes will result in a safer road by reducing the number of crashes, particularly those involving rear-end and angle collisions. I wonder if we need to talk about the Gordon Drive Viaduct Project some.

C. ITEMIZED BREAKDOWN OF COSTS

Item No.	Item Code	Item Description	Quantity	Unit	Unit Price	Extended Price
1	8020-B	Painted Pavement Markings, Solvent/Waterborne	151.07	STA	$100.00	$15,100.00
2	8020-G	Painted Symbols and Legends, Solvent/Waterborne	25	EA	$150.00	$3,750.00
3	8020-K	Pavement Markings Removed	101.82	STA	$75.00	$7,650.00
4	8020- I	Symbols and Legends Removed	13	EA	$125.00	$1,625.00
5	8010-A	Traffic Signal	1	LS	$25,000.00	$25,000.00
6	8030-A	Temporary Traffic Control	1	LS	$7,500.00	$7,500.00
7	11020-A	Mobilization	1	LS	$10,000.00	$10,000.00
					SUBTOTAL:	**$70,618.50**
					CONTINGENCY (30%):	**$21,185.55**
					TOTAL:	**$91.804.05**

D. TIME SCHEDULE

TSIP Application Due	August 15, 2024
TSIP Award Notification	Mid-January 2025
TSIP Funding Available	July 1, 2025
Project Letting	July 15, 2025
Project Construction	July – November 2025
Project Completion	November 2025

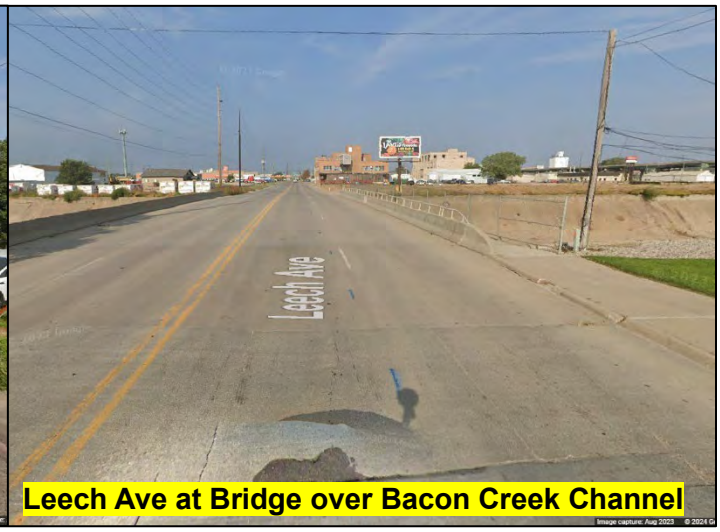
E. MAP

Project location is indicated by the red line below.

F. COLOR PICTURES

Photos starting at Leech Avenue & Business 75/Lewis Boulevard in order from East to West

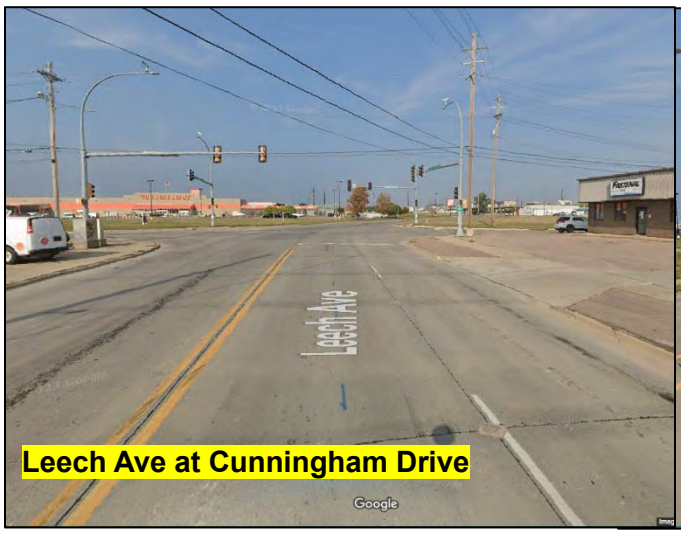
Leech Ave at West of BNSF Railroad Crossing



Leech Ave at Bridge over Bacon Creek Channel

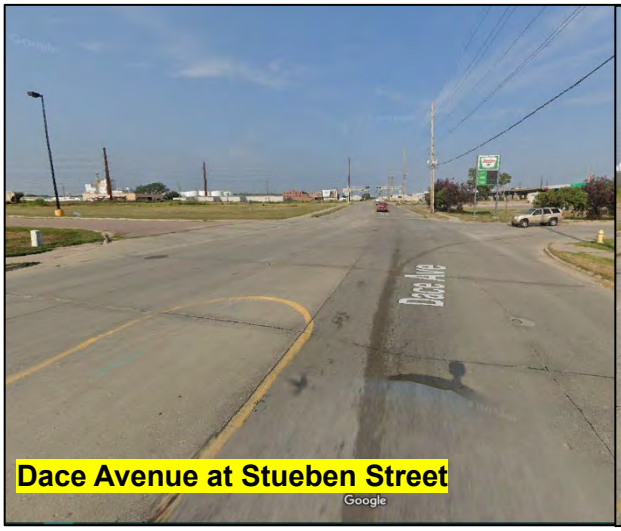
Leech Ave at S Prospect St

Leech Ave West of intersection of S Prospect St



Leech Ave at Cunningham Drive

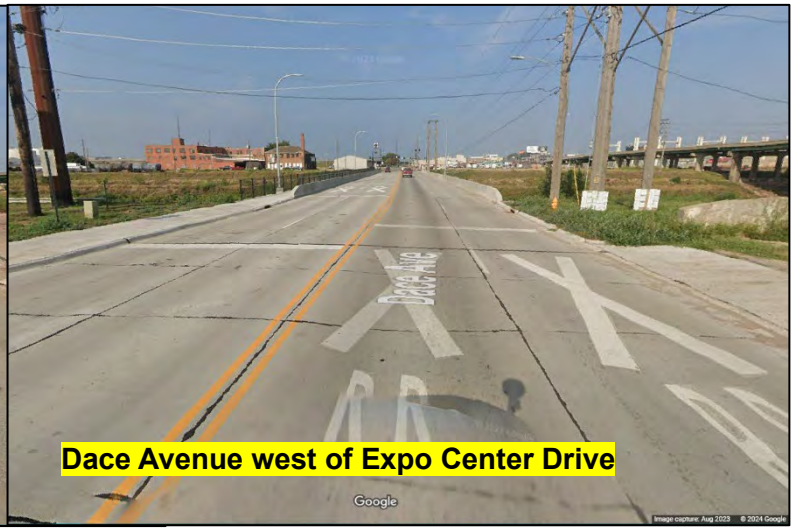
Leech Ave at S Morgan St



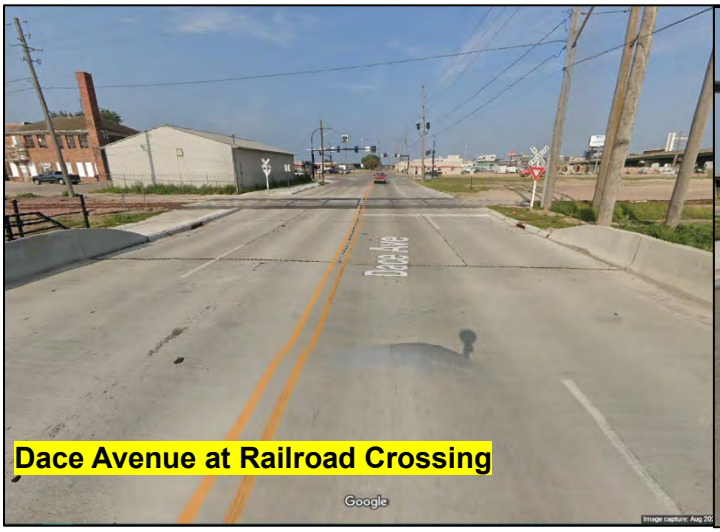
Dace Avenue at Stueben Street

Dace Avenue at Railroad crossing

Dace Avenue at Union Pacific Crossing and Expo Center Drive



Dace Avenue west of Expo Center Drive



Dace Avenue at Railroad Crossing

Dace Avenue at Floyd Boulevard

G

PLAN VIEW - 1 (NTS)

N

G

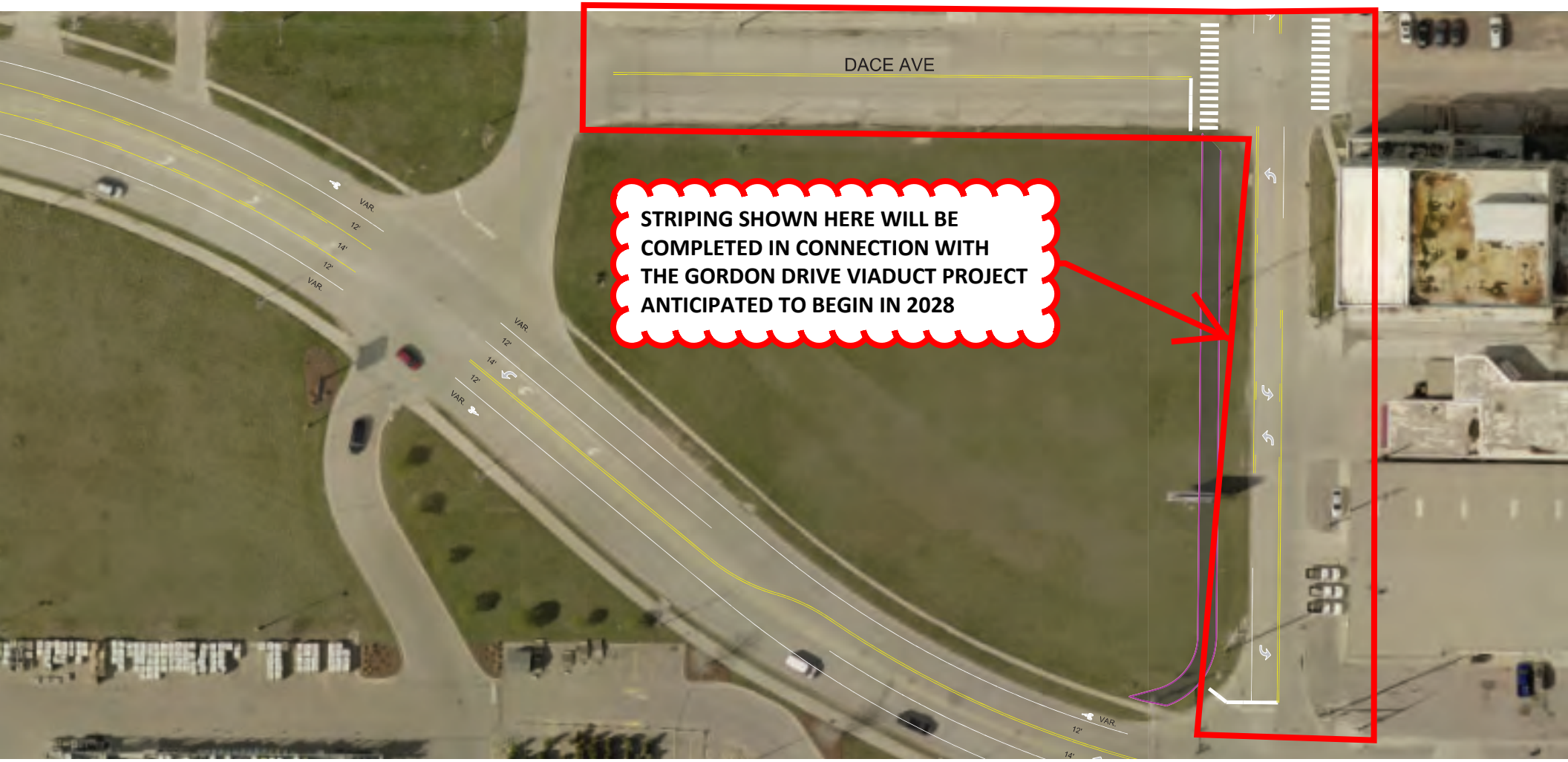
N

PLAN VIEW - 2 (NTS)

G

N

PLAN VIEW - 3 (NTS)



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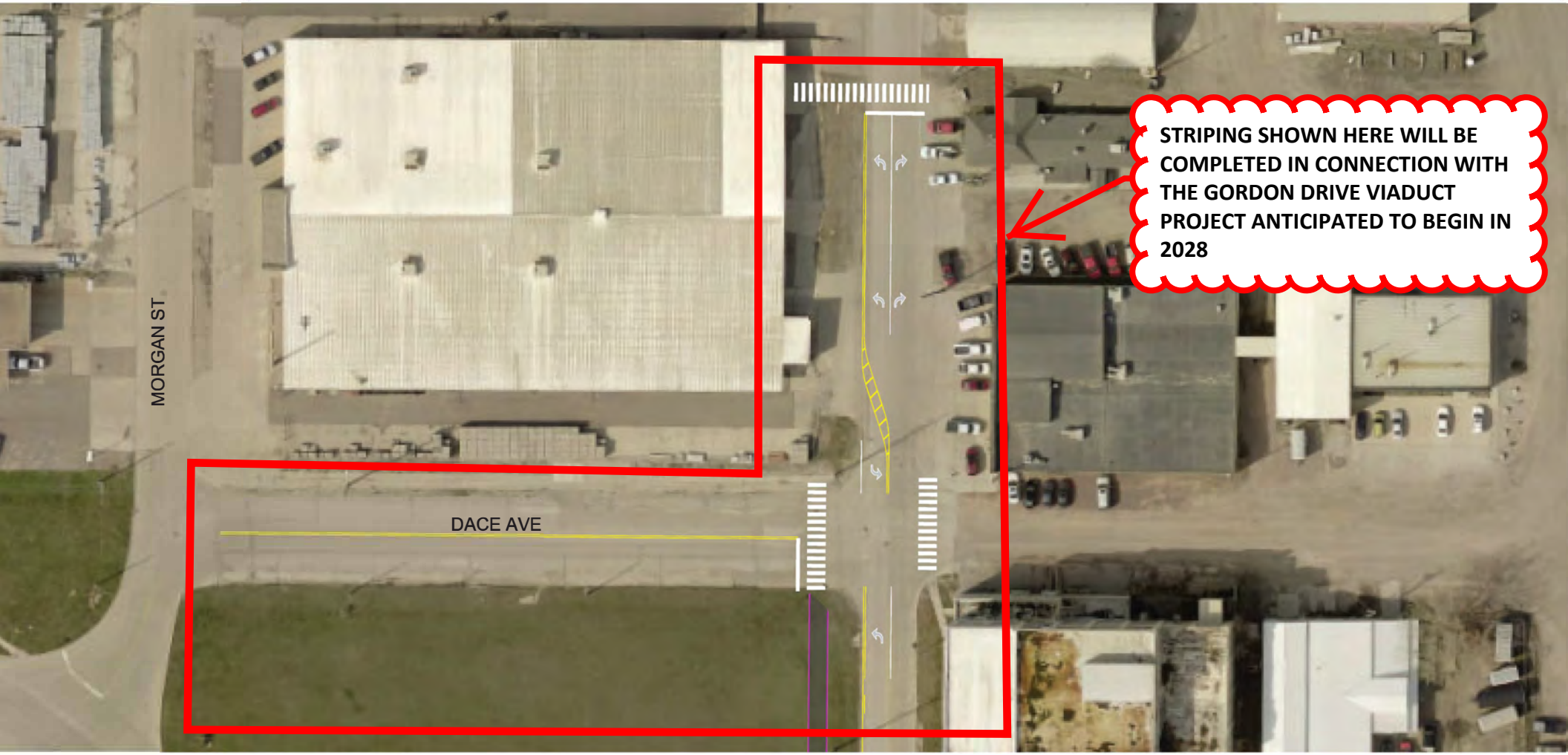
PLAN VIEW - 4 (NTS)

PLAN VIEW - 5 (NTS)



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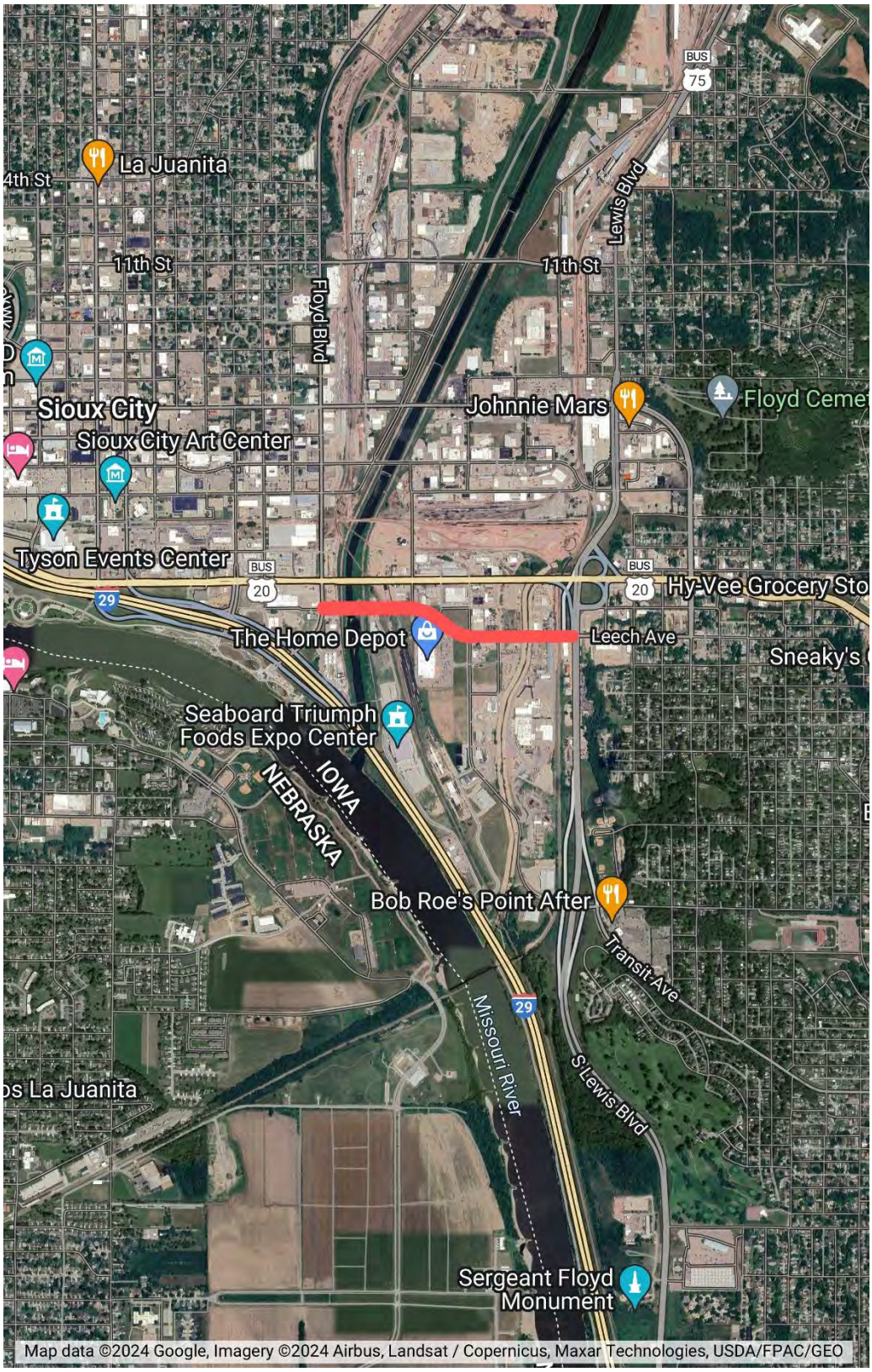
PLAN VIEW - 6 (NTS)

H. AERIAL PHOTOGRAPH



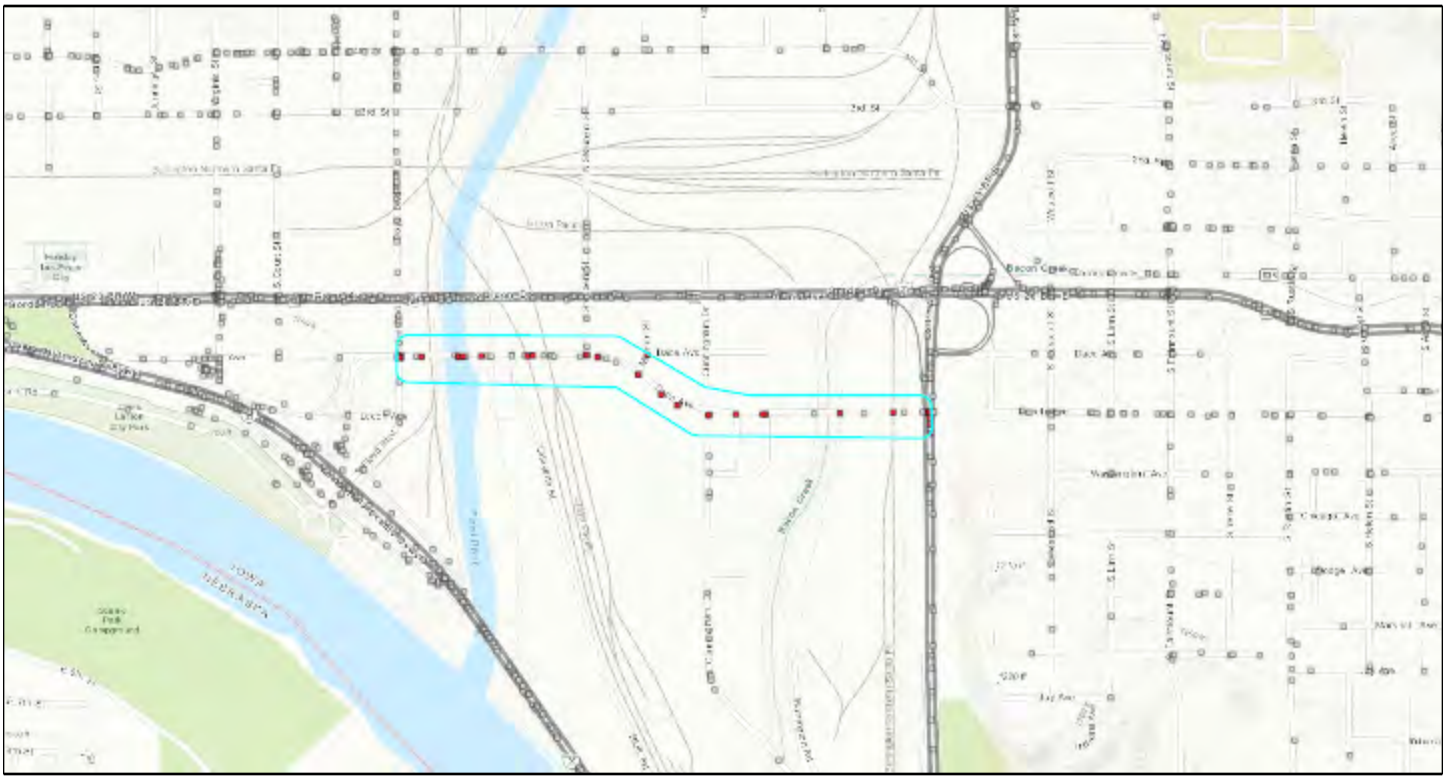
Iowa Crash Analysis Tool
Quick Report
2019-2023

Crash Severity	50
Fatal Crash	0
Suspected Serious Injury Crash	0
Suspected Minor Injury Crash	3
Possible/Unknown Injury Crash	13
Property Damage Only	34

Injury Status Summary	25
Fatalities	0
Suspected serious/incapacitating	0
Suspected minor/non-incapacitating	3
Possible (complaint of pain/injury)	12
Uninjured	0
Unknown	6
Not Reported	4

Property/Vehicles/Occupants	
Property Damage Total (dollars):	272,307.00
Average (per crash dollars):	5,446.14
Total Vehicles:	98.00
Average (per crash):	1.96
Total Occupants:	131.00
Average (per crash):	2.62

Average Severity	
Fatalities/Fatal Crash:	0.00
Fatalities/Crash:	0.00
Injuries/Crash:	0.30
Major Injuries/Crash:	0.00
Minor Injuries/Crash:	0.06
Possible/Unknown Injuries/Crash:	0.24



Major Cause			50
Animal	1	Ran traffic signal	3
Ran stop sign	1	Failed to yield to emergency vehicle	0
FTYROW: At uncontrolled intersection	1	FTYROW: Making right turn on red signal	0
FTYROW: From stop sign	1	FTYROW: From yield sign	0
FTYROW: Making left turn	8	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	3
Exceeded authorized speed	0	Improper or erratic lane changing	4
Operating vehicle in an reckless/erratic/care...	0	Followed too close	8
Passing: On wrong side	0	Passing: Where prohibited by signs/markings	0
Passing: With insufficient distance/inadequa...	0	Passing: Through/around barrier	1
Passing: Other passing	0	Made improper turn	4
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...	1
Driver Distraction: Exterior distraction	1	Ran off road - right	1
Ran off road - straight	1	Ran off road - left	1
Lost control	1	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	2	Improper starting	0
Illegally parked/unattended	0	Driving less than the posted speed limit	0
Operator inexperience	0	Other	2
Unknown	1	Not reported	0
Other: No improper action	4		

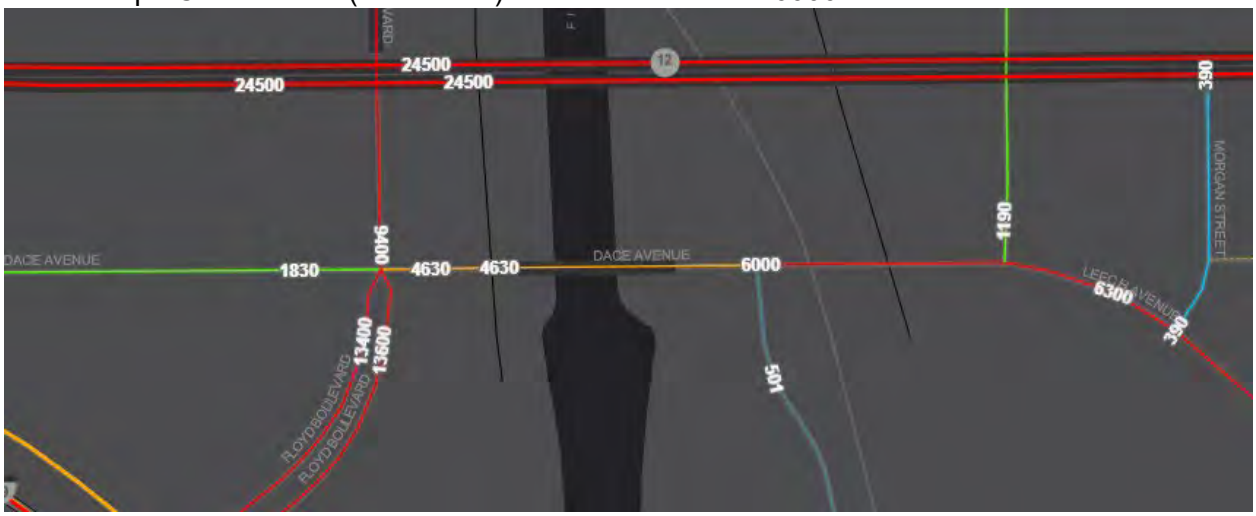
J. TRAFFIC VOLUMES AND/OR TURNING MOVEMENT

TRAFFIC VOLUMES

Traffic volumes are shown below as vehicles per day based on the Iowa DOT 2023 Annual Average Daily Traffic Report. Numbers noted with asterisks were taken from the Iowa DOT 2019 Annual Average Daily Traffic Report.

Dace Avenue

- Floyd Boulevard to Expo Center Drive (Bluff Road) – 4630 AADT*
- Expo Center Drive (Bluff Road) to Stueben Street – 6000 AADT



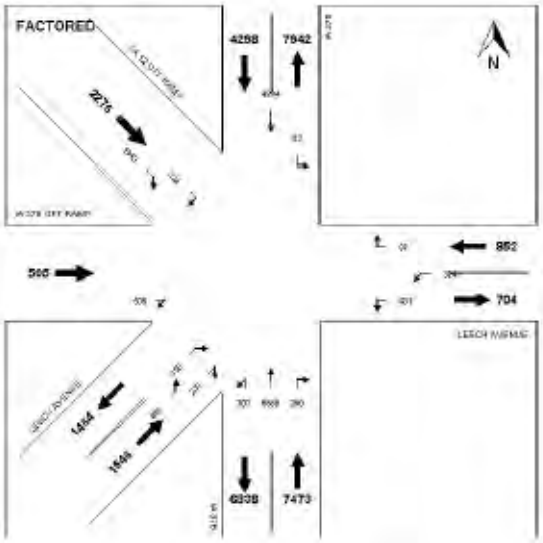
Leech Avenue

- S Stueben Street to Cunningham Drive – 6300 AADT
- Cunningham Drive to rail crossing – 3010 AADT
- Rail crossing to IA-376/S Lewis Boulevard – 2510 AADT

TURNING MOVEMENT REPORTS

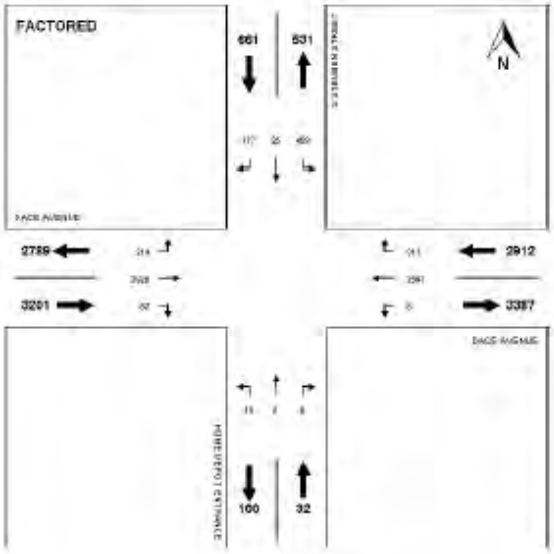
Iowa Department of Transportation
Turning Movement Traffic Count Summary
Vehicle Type: All Vehicles

Station Number:	97411655599
Count Date:	Monday, July 31, 2023
County:	Woodbury
Location Description:	IA 12 & IA 376
Volume Factor:	0.919
Pass Class Factor:	0.936
SU Class Factor:	0.792
Combo Class Factor:	0.743



Iowa Department of Transportation
Turning Movement Traffic Count Summary
Vehicle Type: All Vehicles

Station Number:	97411456099
Count Date:	Wednesday, July 12, 2023
County:	Woodbury
Location Description:	DACE AVE & STRUBEN ST & HOME DEPOT ENT
Volume Factor:	0.971
Pass Class Factor:	0.978
SU Class Factor:	0.795
Combo Class Factor:	0.784



K. TRAFFIC SIGNAL LAYOUT, TYPE, PROPOSED PHASING, AND DETECTOR LOCAITONS

Not Applicable.

County:	Woodbury	Prepared By:	Katie Eickholt
Location:	Sioux City	Date Prepared:	7/26/2024
Proposed Improvements:	Dace Ave (Floyd Blvd to S Stueben St) and Leech Ave (S Stueben St to IA-376/S Lewis Blvd) 4-3 Lane Conversion		
Estimated Improvement Cost:	$ 91,804		
Inflation on Crash Costs:	4%	Annual Maintenance: (% of Improvement Cost)	2%
Discount Rate:	4%		
Estimated Service Life:	20	Annual Maintenance Cost:	$ 1,836

Method Choice: CRF Method

The Crash Reduction Factor (CRF) Method applies one to three CRFs to historical crashes to estimate reductions in future crashes. Crash Modification Factors (CMFs) can be converted to CRFs. For additional information, click the "Learn More" button.

Crash Reduction Factor (CRF) Method

Traffic Growth Factor:	1%
Number of CRFs:	1
Years of Crash History:	5

Combined CRF (Dominant Common Residuals Method)

Iowa DOT's preferred methodology for combining CRFs is Dominant Common Residuals, since it is more conservative than the other options.

	CRF 1:	Combined CRF
CRF Value (%)	30	**30.0**

Crash Severity	Rounded Societal Costs	Crash History (Total):	CRF (from above)	Crash History - Annual Avg	Crashes Saved Annually
Fatal (K)	$ 4,200,000	0	30.0	**0.00**	**0.00**
Serious Injury (A)	$ 4,200,000	0	30.0	**0.00**	**0.00**
Minor Injury (B)	$ 280,000	3	30.0	**0.60**	**0.18**
Possible/Unknown Injury (C)	$ 130,000	13	30.0	**2.60**	**0.78**
Property Damage Only (O)	$ 20,000	34	30.0	**6.80**	**2.04**

Crash Severity	Annual Societal Benefit
Fatal (K)	**$ -**
Serious Injury (A)	**$ -**
Minor Injury (B)	**$ 50,400**
Possible/Unknown Injury (C)	**$ 101,400**
Property Damage Only (O)	**$ 40,800**

Total Benefits and Costs

		Implementation Cost	$ 91,804
		Present Value of Maint.	$ 24,953
Present Value Benefits (Societal Benefits)	$ 2,844,838	Present Value Costs (Impl. and Maint. Costs)	$ 116,757
Present Value Net Return	$ 2,728,081		
Benefit Cost Ratio	**24.37**		

Form continues on next page

County:	Woodbury	Prepared By:	Katie Eickholt
Location:	Sioux City	Date Prepared:	7/26/2024

No Input Necessary - No Custom Values In Use

General Customizations

No change to Crash Costs

No change to Discount Rate

No change to Maintenance Costs

Method-Specific Customizations

No change to Traffic Growth Rate

No change to Crash History

Application for
Traffic Safety Improvement Program Funding

Iowa Department of Transportation

Interstate 35/80 and U.S. Highway 6 Interchange
Urbandale and Clive, Iowa

August 15, 2024

A
Rev. 07/23

Application for SITE-SPECIFIC TSIP FUNDS

GENERAL INFORMATION **DATE:** 8/15/2024

Location / Title of Project I-35/80 & US 6 Diverging Diamond Interchange

Applicant City of Urbandale

Contact Person John Larson Title Director of Engineering & Public Works

Complete Mailing Address 3600 86th Street
Urbandale, IA 50322

Phone (515) 278-3950 (Area Code) E-Mail jlarson@urbandale.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) City of Clive

Contact Person Jeff May Title Public Works Director

Complete Mailing Address 2123 NW 111th St
Clive, IA 50325

Phone (515) 223-6231 (Area Code) E-Mail jmay@cityofclive.com

PLEASE COMPLETE THE FOLLOWING PROJECT INFORMATION:

Funding Amount

Total Safety Cost	$	6,239,340
Total Project Cost	$	15,234,030
Safety Funds Requested	**$**	**500,000**

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 – *Interchange Justification Report (Snyder & Associates, 8/28/19) and IJR Amendment (Snyder & Associates, 3/13/24)*
☒ 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
Segment 2926	US 6 west of I-35/80 interchange	☒	☐	73.6	-0.15
Segment 4725	US 6 between interchange ramps	☒	☐	67.8	0.46
Segment 2466	US 6 east of I-35/80 interchange	☒	☐	6.3	0.27

A

RESOLUTION NO. 2024-182

A RESOLUTION AUTHORIZING THE CITY OF CLIVE, IOWA, TO MAKE A JOINT APPLICATION WITH THE CITY OF URBANDALE TO THE IOWA DEPARTMENT OF TRANSPORTATION TRAFFIC SAFETY IMPROVEMENT PROGRAM (TSIP) FOR THE PARTIAL FUNDING OF THE INTERSTATE 35 / INTERSTATE 80 / US HIGHWAY 6 (HICKMAN ROAD) INTERCHANGE PROJECT AND FURTHER APPROVING THE APPLICATION WHICH OBLIGATES THE CITY TO MATCHING FUNDS FOR THE CONSTRUCTION OF SAID PROJECT

WHEREAS, the Iowa Department of Transportation has established the TSIP and provides funding for locations where vehicular safety is a concern and documented; and

WHEREAS, the Interstate 35 / Interstate 80 / US Highway 6 Interchange Project has been identified where vehicular safety and traffic flow could be improved and funded by TSIP; and

WHEREAS, the proposed improvements, including additional capacity on all corridors and replacement of the traffic signals, will help reduce crashes in the project area and improve traffic operations.

NOW THEREFORE, BE IT RESOLVED BY THE CITY COUNCIL OF THE CITY OF CLIVE, IOWA, THAT:

1. The City Council supports and approves the application for Traffic Safety Improvement Program (TSIP) funding.
2. The City Council hereby commits to the City matching monies as required by TSIP.
3. The City Council hereby commits to accepting and maintaining these improvements.
4. The Mayor is hereby authorized to execute the application on behalf of the City.

PASSED AND APPROVED this 25 day of July, 2024

John Edwards, Mayor

Attest:

Matthew Graham, City Clerk

A

RESOLUTION 196-2024

A RESOLUTION AUTHORIZING THE CITY OF URBANDALE, IOWA, TO MAKE A JOINT APPLICATION WITH THE CITY OF CLIVE TO THE IOWA DEPARTMENT OF TRANSPORTATION TRAFFIC SAFETY IMPROVEMENT PROGRAM (TSIP) FOR THE PARTIAL FUNDING OF THE INTERSTATE 35 / INTERSTATE 80 / US HIGHWAY 6 INTERCHANGE PROJECT AND FURTHER APPROVING THE APPLICATION WHICH OBLIGATES THE CITY TO MATCHING FUNDS FOR THE CONSTRUCTION OF SAID PROJECT

WHEREAS, the Iowa Department of Transportation has established the TSIP and provides funding for locations where vehicular safety is a concern and documented; and

WHEREAS, the Interstate 35 / Interstate 80 / US Highway 6 Interchange Project has been identified where vehicular safety and traffic flow could be improved and funded by TSIP; and

WHEREAS, the proposed improvements, including additional capacity on all corridors and replacement of the traffic signals, will help reduce crashes in the project area and improve traffic operations.

NOW THEREFORE, BE IT RESOLVED BY THE CITY COUNCIL OF THE CITY OF URBANDALE, IOWA, THAT:

1. The City Council supports and approves the application for Traffic Safety Improvement Program (TSIP) funding.
2. The City Council hereby commits to the City matching monies as required by TSIP.
3. The City Council hereby commits to accepting and maintaining these improvements.
4. The Mayor is hereby authorized to execute the application on behalf of the City.

PASSED AND APPROVED this 16th day of July, 2024.

DocuSigned by:
Robert D. Andeweg
FC9F5989F08C44F...

Robert D. Andeweg, Mayor

Attest:

DocuSigned by:
Nicole Lunders
B7664D4F8025498...

Nicole Lunders, City Clerk

NARRATIVE

The Interstate 35/80 (I-35/80) and U.S. Highway 6 (US 6) interchange is currently a standard diamond interchange with I-35/80 going over US 6 and will be reconstructed as a diverging diamond interchange (DDI). The interchange currently experiences a significant delay and queuing, including queue spill-back from left turn lanes into through lanes, during daily peak hours. This results in unexpected stopping and likely contributes to higher-than-average crash rates. Due to the standard diamond configuration, left turns from US 6 onto the ramps are required to cross opposing through traffic. Currently the left turn signal phases on US 6 are protected/permissive, which results in increased potential for angle and broadside crashes.

The DDI is expected to improve the interchange capacity to allow for satisfactory operations through the design year of 2050, which will reduce unexpected stopping and queue lengths. The DDI configuration also allows for free left turns from US 6 onto the ramps, reducing potential for angle and broadside crashes

Existing Conditions

US 6 has a 4-lane divided rural cross-section through the interchange area. Paved shoulder widths vary from about 4 feet under the I-35/80 bridge to about 10 feet outside the ramp terminals. The speed limit is 45 mph west of the interchange and 50 mph east of the interchange. Both the northbound and southbound off-ramps have 3 lanes at the interchange termini (1 left lane, 1 shared left/through/right lane, and 1 right lane) with approximately 300-350 feet of storage. There are left and right turn lanes from US 6 onto both on-ramps, with the left turn lanes having about 400-450 feet of storage and the right turn lanes having about 200-250 ft of storage. **Attachment H** shows an aerial of the existing I-35/80 and US 6 interchange.

Existing (2022) and forecasted (2050) peak hour traffic volumes are summarized in **Table 1**. Traffic volumes are taken from the *Traffic Forecast Volume Technical Memorandum* from the *SW I-80/I-35/I-235 System Interchange Justification Report* (HR Green, March 31, 2023). Traffic is expected to grow significantly over the next 25 years, with total entering traffic increasing by about 1.4 to 1.5 percent per year.

Table 1. Summary of Existing and Forecasted Traffic Volumes (in vehicles per hour)

Location	AM Peak		PM Peak	
	2022	2050	2022	2050
SB Off-Ramp	780	1,180	730	1,100
NB Off-Ramp	960	1,320	920	1,260
EB US 6, W of Interchange	1,820	2,840	1,880	2,870
WB US 6, E of Interchange	780	1,300	1,730	2,600
TOTAL ENTERING	4,340	6,640	5,260	7,830

From 2019 through 2023, there were 132 total crashes at both interchange ramp termini. There was 1 major injury crash, 12 minor injury crashes, 20 possible/unknown injury crashes, and 99 property damage only crashes. The most common manner of crash was rear-end crashes with 57 crashes. A significant number of the crashes were also same direction sideswipes (20), broadsides (19), and angle, oncoming left turns (17). The most commonly reported major causes were following too close (37), failure to yield making a left turn (22), and running a traffic signal (10). A more detailed summary of existing crashes is included in **Attachment I**.

In addition to the existing crash history review, the Iowa DOT's Potential for Crash Reduction (PCR) database was also reviewed. Both the existing interchange terminals are labeled with "negligible" PCR for both all crashes and severe crashes. However, several roadway segments near and within the interchange are label as "high" PCR (see **Table 2**).

Table 2. Summary of PCRs for US 6 Segments Near I-35/80 Interchange

Location	All Crashes		Severe Crashes	
	PCR Label	Rank in Category	PCR Label	Rank in Category
West of Interchange	High	1 of 389	Negligible	351 of 389
Between Ramps	High	3 of 389	High	9 of 389
East of Interchange	High	86 of 389	High	20 of 389

Proposed Conditions

The I-35/80 and US 6 interchange was studied in an Interchange Justification Report (IJR) by Snyder & Associates to justify revised access to I-35/80 from US 6, which was approved August 28, 2019. The original IJR was amended on March 13, 2024 to consider updated traffic forecast volumes from the nearby I-80/I-35/I-235 Systems Interchange IJR. Both the original IJR and the amendment supported the preferred alternative of a DDI for the I-35/80 and US 6 interchange.

Improvements on I-35/80 and US 6 outside the interchange itself were recently bid and will be constructed in 2025 and 2026, however, the conversion of the interchange to a DDI has not been fully designed or bid yet. The DDI is currently on schedule to be bid in 2026 and constructed in 2026 and 2027.

The proposed lane configuration from the IJR amendment is shown in **Attachment G**. It includes 3 through lanes both directions on US 6, with dual left lanes with free turns onto the I-35/80 on-ramps and single right turn bypass lanes yielding to the dual left turn lanes. The off-ramps are dual off-ramps that expand to 4 lanes (2 left turn lanes and 2 right turn lanes). In addition to the crossovers being controlled by traffic signals, both the left and right turns from the off-ramps are proposed to be controlled by traffic signals as well. The proposed lane configuration and traffic control is based on the traffic operations analysis in the original IJR and the amendment.

The DDI is expected to provide both safety and operational benefits compared to the existing diamond interchange.

- The left turns at a DDI are free movements that only conflict with opposing right turns instead of opposing through traffic
    - Reduces potential for broadside and angle crashes, two of the most common manners of crash at this interchange and also tend to be more severe than other common crash types
- The angles of conflict points at a DDI are shallower than a standard diamond
    - Also reduces potential for broadside and angle crashes
- The improved operations will also reduce queue lengths and unexpected stopping
    - Reduces potential for rear-end crashes, the most common manner of crash at this interchange
- The FHWA's CMF Clearinghouse (www.cmfclearinghouse.org) includes CMFs for converting a standard diamond interchange to a DDI
    - 14.2% reduction in all crashes (CMF ID 10761)
    - 44.2% reduction in fatal and injury crashes (CMF ID 10762)
    - 8% reduction in property damage only crashes (CMF ID 10763)

ORDER OF MAGNITUDE COST OPINION

As part of preliminary design, a preliminary cost opinion for the interchange improvements was developed. The bid package that relates to the construction of the DDI along US 6 currently includes improvements to the adjacent signalized intersection of US 6 & NW 111th St to the east. The improvements at US 6 & NW 111th St are mostly capacity related and not expected to have a direct impact on safety. The bid package also includes landscaping/aesthetic improvements that are not essential to the roadway improvements.

The estimated costs associated with the US 6 & NW 111th St intersection and landscaping/ aesthetics totaling $2,755,350 were removed from the overall project cost to isolate the interchange related costs. Finally, 50 percent of the interchange related costs were identified as safety-related, with the remaining 50 percent being identified as operations-related. Project costs are summarized in **Table 3**. The following pages show the detailed cost estimate for the overall project.

Table 3. Summary of DDI Related Bid Package Costs

Cost Type	Overall Project	Interchange Only	Safety Cost (50% of Interchange)
Construction	$12,694,030	$10,398,680	$5,199,340
Contingency (20%)	$2,540,000	$2,080,000	$1,040,000
TOTAL	$15,234,030	$12,478,680	$6,239,340

The bid package that relates directly to the construction of the DDI is a small portion of the overall project which includes interstate paving, interstate signing, interstate lighting, interstate bridges/structures, and other improvements outside the immediate footprint of the interchange. Previously secured funding sources are applicable to the overall project, so the overall project funding is summarized in **Table 4**. The costs below represent the current best estimate of overall project costs, but some bid packages have not been bid yet, so the costs are subject to change.

Table 4. Overall Project Funding Summary

Source	Amount
Iowa DOT Funded	$115,424,800
State Transportation Block Grant	$2,500,000
Transportation Alternative Set Aside	$800,000
Water Quality Initiative	$279,500
Potential TSIP Funding	***$500,000***
City of Urbandale	$3,192,700
City of Clive	$3,192,700
TOTAL	**$125,889,700**

C

IM-080-3(274)124--13-77

Polk I-35/80 & Hickman Road Interchange - Exterior Interstate

Iowa Department of Transportation

Opinion of Probable Construction Cost

Snyder & Associates, Inc. -- July 2024

ITEM	ITEM CODE	ITEM DESCRIPTION	NOTE	UNIT	UNIT PRICE	DIVISION 1 IOWA DOT QTY	DIVISION 1 IOWA DOT TOTAL	DIVISION 2 CITIES QTY	DIVISION 2 CITIES TOTAL
1	2102-0425070	SPECIAL BACKFILL		TON	$ 15.00	30,585	$ 458,775		$ -
2	2102-2625001	EMBANKMENT-IN-PLACE, CONTRACTOR FURNISH		CY	$ 12.00	50,000	$ 600,000		$ -
3	2111-8174100	GRANULAR SUBBASE		SY	$ 8.00	53,032	$ 424,256		$ -
4	2122-5190007	PAVED SHLD, PCC, 7"		SY	$ 60.00	22	$ 1,320		$ -
5	2123-7450000	SHLD CONSTRUCTION, EARTH		STA	$ 350.00	66	$ 23,100	23	$ 8,050
6	2213-6745500	REMOVAL OF CURB		STA	$ 227.00	17.5	$ 3,973		$ -
7	2301-1003100	STD/S-F PCC PAV'T, QM-C CL 3, 10"		SY	$ 75.00	4,787	$ 359,025		$ -
8	2301-1003120	STD/S-F PCC PAV'T, QM-C CL 3, 12"		SY	$ 80.00	36,212	$ 2,896,960		$ -
9	2301-4875006	MEDIAN, P.C. CONCRETE, 6 IN.		SY	$ 80.00	8,988	$ 719,040		$ -
10	2401-6745830	RMVL OF PCC MEDIAN BARRIER		LF	$ 70.00	2,587	$ 181,069		$ -
11	2402-2720000	EXCAVATION, CLASS 20		CY	$ 20	879	$ 17,580		$ -
12	2402-2725005	FOUNDATION TREATMENT MATERIAL		TON	$ 55	95	$ 5,225		$ -
13	2403-0100020	STRUCTURAL CONCRETE (RCB CULVERT)		CY	$ 850	151	$ 128,350		$ -
14	2404-7775005	REINFORCING STEEL, EPOXY COATED		LB	$ 2	29,501	$ 59,002		$ -
15	2416-0100015	APRON, CONC, 15"		EACH	$ 1,500.00	2	$ 3,000		$ -
16	2416-0100018	APRON, CONC, 18"		EACH	$ 1,800.00	2	$ 3,600		$ -
17	2416-0100030	APRON, CONC, 30"		EACH	$ 3,000.00	1	$ 3,000		$ -
18	2416-0100054	APRON, CONC, 54"		EACH	$ 8,000.00	1	$ 8,000		$ -
19	2435-0140148	MANHOLE, STORM SWR, SW-401, 48"		EACH	$ 4,000.00	2	$ 8,000		$ -
20	2435-0250700	INTAKE, SW-507		EACH	$ 7,500.00	14	$ 105,000	4	$ 30,000
21	2435-0250800	INTAKE, SW-508		EACH	$ 8,500.00	4	$ 34,000		$ -
22	2435-0250900	INTAKE, SW-509		EACH	$ 9,500.00	6	$ 57,000		$ -
23	2435-0251218	INTAKE, SW-512, 18 IN.		EACH	$ 3,000.00		$ -	4	$ 12,000
24	2435-0251300	INTAKE, SW-513		EACH	$ 7,500.00	2	$ 15,000		$ -
25	2435-0254500	INTAKE, SW-545		EACH	$ 9,500.00	7	$ 66,500		$ -
26	2501-8400172	TEMPORARY SHORING		LS	$ 25,000	1	$ 25,000		$ -
27	2502-8212034	SUBDRAIN, LONGITUDINAL, (SHLD) 4"		LF	$ 8.00	4,590	$ 36,720		$ -
28	2502-8212036	SUBDRAIN, LONGITUDINAL, (SHLD) 6"		LF	$ 10.00		$ -	345	$ 3,450
29	2503-0114215	STORM SWR G-MAIN,TRENCHED, RCP 2000D,15"		LF	$ 90.00	746	$ 67,140	284	$ 25,560
30	2503-0114218	STORM SWR G-MAIN,TRENCHED, RCP 2000D,18"		LF	$ 100.00	560	$ 56,000		$ -
31	2503-0114224	STORM SWR G-MAIN,TRENCHED, RCP 2000D,24"		LF	$ 120.00	680	$ 81,600		$ -
32	2503-0114230	STORM SWR G-MAIN,TRENCHED, RCP 2000D,30"		LF	$ 150.00	634	$ 95,100		$ -
33	2503-0114236	STORM SWR G-MAIN,TRENCHED, RCP 2000D,36"		LF	$ 190.00	396	$ 75,240		$ -
34	2503-0114242	STORM SWR G-MAIN,TRENCHED, RCP 2000D,42"		LF	$ 230.00	300	$ 69,000		$ -
35	2503-0114248	STORM SWR G-MAIN,TRENCHED, RCP 2000D,48"		LF	$ 300.00	238	$ 71,400		$ -
36	2503-0114254	STORM SWR G-MAIN,TRENCHED, RCP 2000D,54"		LF	$ 320.00	48	$ 15,360		$ -
37	2510-6745850	RMVL OF PAV'T		SY	$ 8.00	45,165	$ 361,320		$ -
38	2510-6750600	RMVL OF INTAKE+UTILITY ACCESS		EACH	$ 1,000.00	1	$ 1,000		$ -
39	2511-0302600	RECREATIONAL TRAIL, PCC, 6"		SY	$ 60.00		$ -	1,858	$ 111,480
40	2511-0310100	SPECIAL COMPACTION OF SUBGRADE/REC TRAIL		STA	$ 1,000.00		$ -	17	$ 17,000
41	2511-6745900	REMOVAL OF SIDEWALK		SY	$ 10.00	766	$ 7,660		$ -
42	2511-7526005	SIDEWALK, P.C. CONCRETE, 5 IN		SY	$ 50.00	210	$ 10,500		$ -
43	2515-6745600	REMOVAL OF PAVED DRIVEWAY		SY	$ 15.00	655	$ 9,825		$ -
44	2525-0000100	Traffic Signals - 111th Street	(1)	LS	$ 420,000	1	$ 420,000		$ -
45	2525-0000100	Traffic Signals - Interchange SB Terminal		LS	$ 420,000	1	$ 420,000		$ -
46	2525-0000100	Traffic Signals - Interchange NB Terminal		LS	$ 420,000	1	$ 420,000		$ -
47	2525-0000120	Removal of Traffic Signals - 111th Street	(1)	LS	$ 42,000	1	$ 42,000		$ -
48	2525-0000120	Removal of Traffic Signals - SB Terminal		LS	$ 31,500	1	$ 31,500		$ -
49	2525-0000120	Removal of Traffic Signals - NB Terminal		LS	$ 31,500	1	$ 31,500		$ -
50	2528-8400256	Temporary Traffic Signals	(2)	EACH	$ 150,000.00	3	$ 450,000		$ -
51	2526-8285000	CONSTRUCTION SURVEY		LS	$ 150,000.00	0.95	$ 142,500	0.05	$ 7,500
52	2528-8445110	TRAFFIC CONTROL		LS	$ 430,000.00	0.95	$ 408,500	0.05	$ 21,500
53	2533-4980005	MOBILIZATION		LS	$ 941,000.00	0.95	$ 893,950	0.05	$ 47,050
54	2599-9999010	BIORETENTION		LS	$ 116,500.00		$ -	1	$ 116,500
55	2599-9999010	SOIL QUALITY RESTORATION		LS	$ 7,000.00		$ -	1	$ 7,000
56	2599-9999010	AESTHETICS AND LANDSCAPING	(1)	LS	$ 1,683,350.00		$ -	1	$ 1,683,350
57	2599-9999010	LIGHTING		LS	$ 60,000	1	$ 60,000	2	$ 120,000
58	PCT-999	UNQUANTIFIED		%Project			$ -		$ -

(1) - Not related to construction of the interchange

(2) - One temporary traffic signal (US 6 & NW 111th intersection) is not related to construction of the interchange

DIVISION SUBTOTAL:	$ 10,483,590	$ 2,210,440
CONTINGENCY (20%)	$ 2,097,000	$ 443,000
DIVISION TOTAL:	$ 12,580,590	$ 2,653,440
TOTAL CONSTRUCTION COSTS		**$ 15,234,030**

SCHEDULE

Below is the anticipated schedule of major project events for this project.

Present – July 2026	Design
August 2024	TSIP Funding Application
January 2025	TSIP Funding Award (if selected)
February 2025	TSIP Funding Agreement
July 2025	TSIP Funding Availability
September 2026	Project Letting
October 2026 – December 2027	Project Construction
December 2027	Project Completed

MAP

Below is a map of the Des Moines metro area with the I-35/80 and US 6 interchange identified with a red circle.

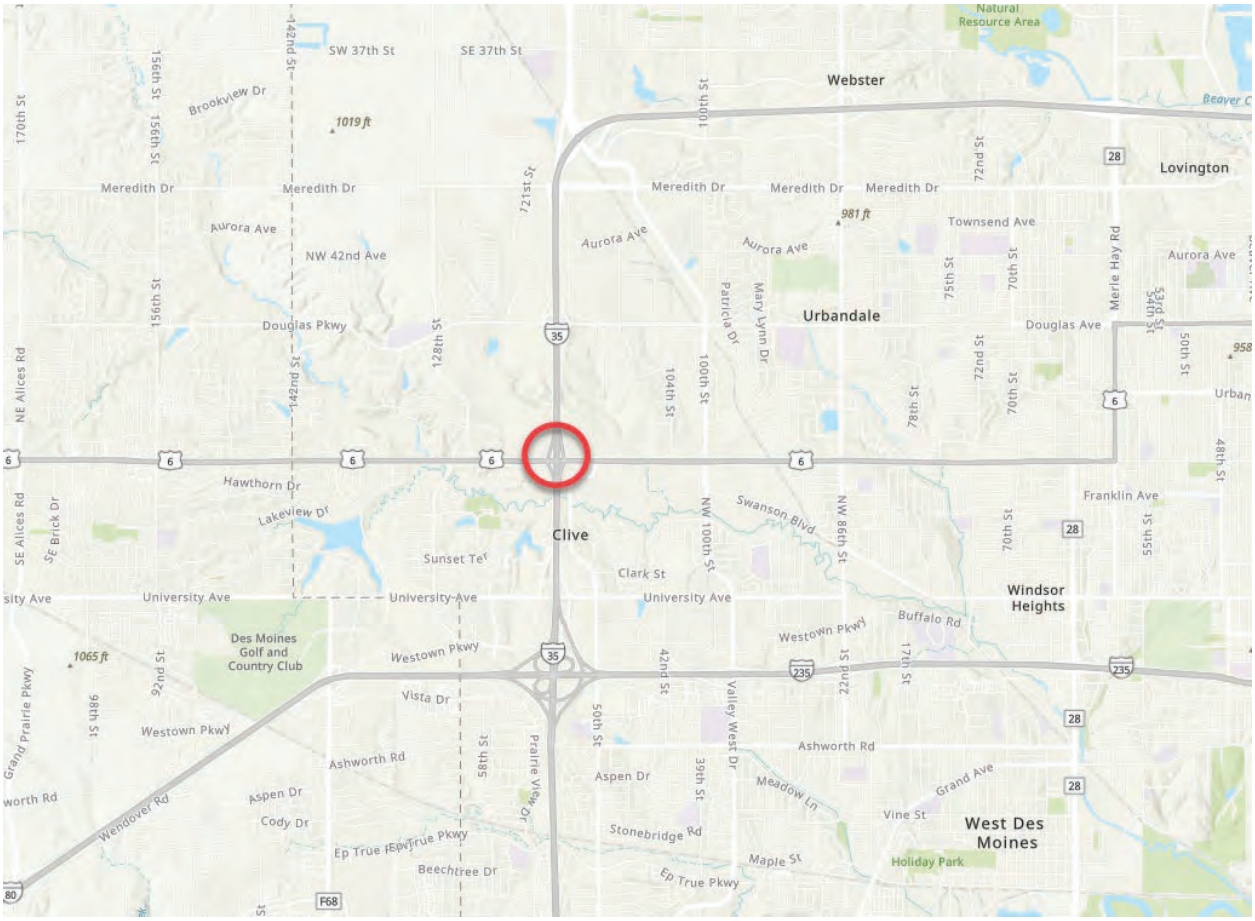


Figure 1. Map of the project location (Image Source: www.arcgis.com)

SITE PICTURES

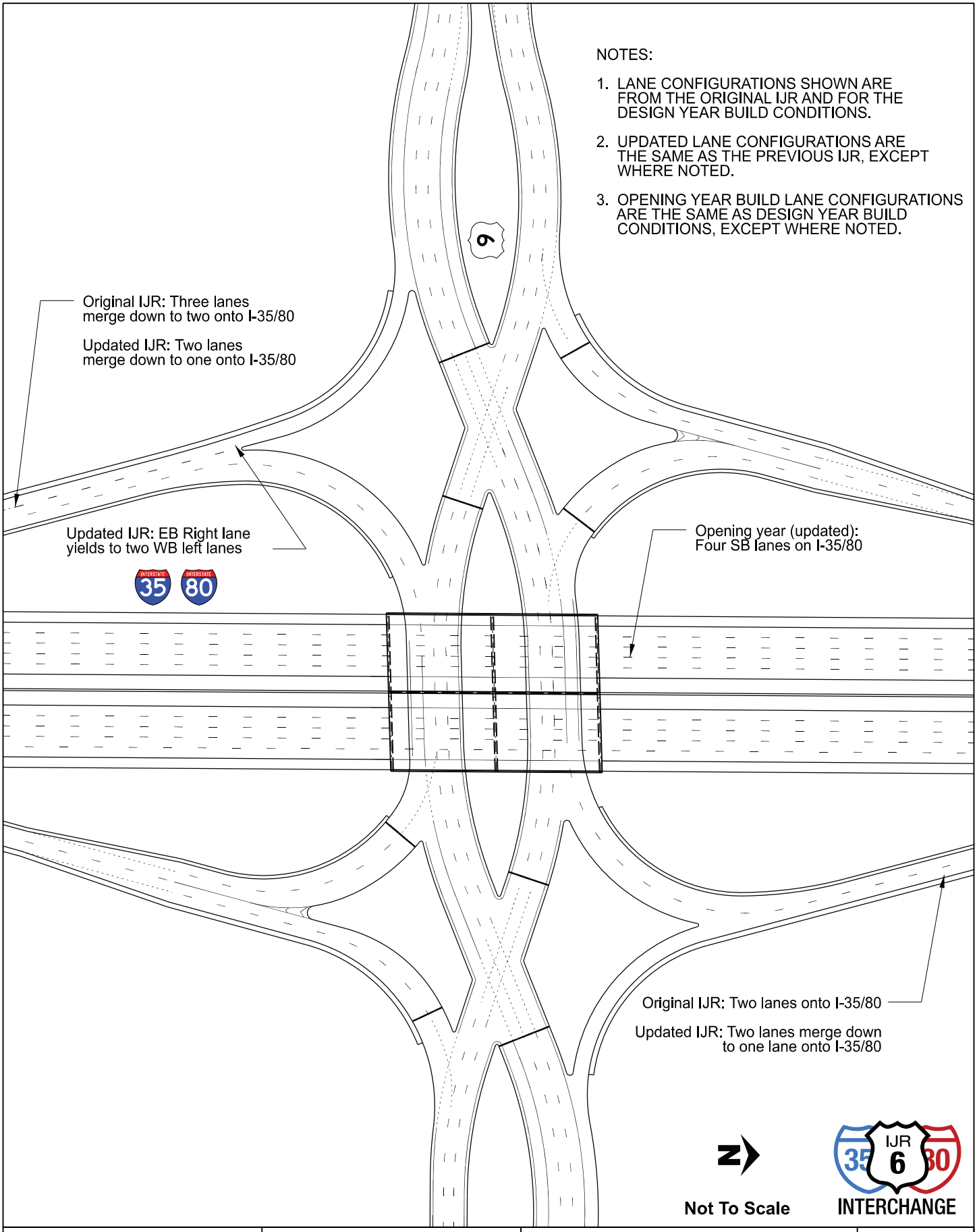
Below and on the following page are pictures of the I-35/80 and US 6 interchange.

Figure 2. View of the interchange from the SB off-ramp, looking south

Figure 3. View of the interchange from the NB off-ramp, looking north

Figure 4. View of the interchange from the SB ramps terminal, looking east

Figure 5. View of the interchange from the NB ramps terminal, looking west



SNYDER & ASSOCIATES

IOWA DOT

I-35/80 and US 6 Ramp Terminal Improvements (Original And Updated IJR)

I-35/80/US 6 IJR | Polk County, Iowa

Amendment

Figure 6-1

AERIAL PHOTOGRAPH

Below is an aerial photograph of the intersection of the I-35/80 and US 6 interchange.

Figure 6. Aerial photograph of the project intersection

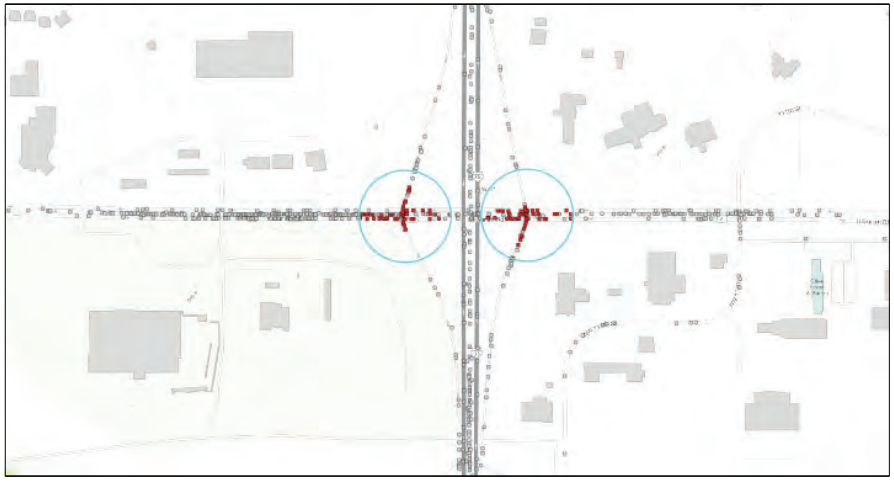
Iowa Crash Analysis Tool
Quick Report
2019-2023

Crash Severity	132
Fatal Crash	0
Suspected Serious Injury Crash	1
Suspected Minor Injury Crash	12
Possible/Unknown Injury Crash	20
Property Damage Only	99

Injury Status Summary	48
Fatalities	0
Suspected serious/incapacitating	1
Suspected minor/non-incapacitating	16
Possible (complaint of pain/injury)	26
Uninjured	0
Unknown	2
Not Reported	3

Property/Vehicles/Occupants	
Property Damage Total (dollars):	801,143.00
Average (per crash dollars):	6,069.27
Total Vehicles:	261.00
Average (per crash):	1.98
Total Occupants:	355.00
Average (per crash):	2.69

Average Severity	
Fatalities/Fatal Crash:	0.00
Fatalities/Crash:	0.00
Injuries/Crash:	0.33
Major Injuries/Crash:	0.01
Minor Injuries/Crash:	0.12
Possible/Unknown Injuries/Crash:	0.20



Iowa Crash Analysis Tool
Quick Report
2019-2023

Major Cause	132		
Animal	0	Ran traffic signal	10
Ran stop sign	0	Failed to yield to emergency vehicle	0
FTYROW: At uncontrolled intersection	0	FTYROW: Making right turn on red signal	0
FTYROW: From stop sign	0	FTYROW: From yield sign	0
FTYROW: Making left turn	22	FTYROW: From driveway	0
FTYROW: From parked position	0	FTYROW: To pedestrian	0
FTYROW: Other	1	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	7
Exceeded authorized speed	1	Improper or erratic lane changing	5
Operating vehicle in an reckless/erratic/care...	4	Followed too close	37
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	1	Made improper turn	7
Driver Distraction: Manual operation of an e...	1	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...	1
Driver Distraction: Exterior distraction	0	Ran off road - right	2
Ran off road - straight	0	Ran off road - left	1
Lost control	1	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	1
Equipment failure	0	Oversized load/vehicle	0
Other: Getting off/out of vehicle	0	Failure to dim lights/have lights on	0
Improper backing	1	Improper starting	0
Illegally parked/unattended	0	Driving less than the posted speed limit	0
Operator inexperience	0	Other	10
Unknown	12	Not reported	0
Other: No improper action	7		

Iowa Crash Analysis Tool
Quick Report
2019-2023

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	1	1	0	0	0	2	1	3	1	0	1	0	0	10
Monday	0	0	0	2	6	4	5	2	4	2	3	0	0	28
Tuesday	0	0	1	2	4	2	3	3	2	5	0	0	0	22
Wednesday	0	0	0	0	1	0	2	0	7	1	2	0	0	13
Thursday	1	0	1	1	1	2	4	2	2	1	1	1	0	17
Friday	0	0	0	2	3	4	3	6	4	2	1	1	0	26
Saturday	0	1	0	0	1	4	0	1	4	1	2	2	0	16
Total	2	2	2	7	16	18	18	17	24	12	10	4	0	132

Manner of Crash Collision	132
Non-collision (single vehicle)	8
Head-on (front to front)	4
Rear-end (front to rear)	57
Angle (oncoming left turn)	17
Broadside (front to side)	19
Sideswipe (same direction)	20
Sideswipe (opposite direction)	0
Rear to rear	0
Rear to side	2
Not reported	0
Other	5
Unknown	0

Surface Conditions	132
Dry	111
Wet	17
Ice/frost	1
Snow	2
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			261
Bridge overhead structure	0	Bridge pier or support	0
Bridge/bridge rail parapet	0	Curb/island/raised median	0
Ditch	1	Embankment	0
Ground	0	Culvert/pipe opening	1
Guardrail - face	1	Guardrail - end	0
Concrete traffic barrier (median or right sid...	1	Other traffic barrier	0
Cable barrier	0	Impact attenuator/crash cushion	0
Utility pole/light support	2	Traffic sign support	0
Traffic signal support	1	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)	254

Iowa Crash Analysis Tool
Quick Report
2019-2023

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	3	1	0	0	4
= 17	2	2	0	0	4
= 18	4	4	0	0	8
= 19	6	4	0	0	10
= 20	0	0	0	0	0
>= 21 and <= 24	8	19	0	0	27
>= 25 and <= 29	21	14	0	0	35
>= 30 and <= 34	9	16	0	0	25
>= 35 and <= 39	10	14	0	0	24
>= 40 and <= 44	8	10	0	0	18
>= 45 and <= 49	11	13	0	0	24
>= 50 and <= 54	6	11	0	0	17
>= 55 and <= 59	4	14	0	0	18
>= 60 and <= 64	3	7	0	0	10
>= 65 and <= 69	4	5	0	0	9
>= 70 and <= 74	4	6	0	0	10
>= 75 and <= 79	3	3	0	0	6
>= 80 and <= 84	2	1	0	0	3
>= 85 and <= 89	0	0	0	0	0
>= 90 and <= 94	0	0	0	0	0
>= 95	0	2	0	0	2
Not reported	0	0	0	0	0
Unknown	0	0	7	0	7
Total	108	146	7	0	261

Drug/Alcohol Related	132
Drug	0
Alcohol (< Statutory)	0
Alcohol (Statutory)	0
Drug and Alcohol (< Statutory)	0
Drug and Alcohol (Statutory)	0
Refused	1
Under Influence of Alcohol/Drugs/Medications	0
None Indicated	131

Alcohol Test Given	261
None	252
Blood	0
Urine	0
Breath	0
Vitreous	0
Refused	1
Not reported	8

Drug Test Given	261
None	253
Blood	0
Urine	0
Breath	0
Vitreous	0
Refused	0
Not reported	8

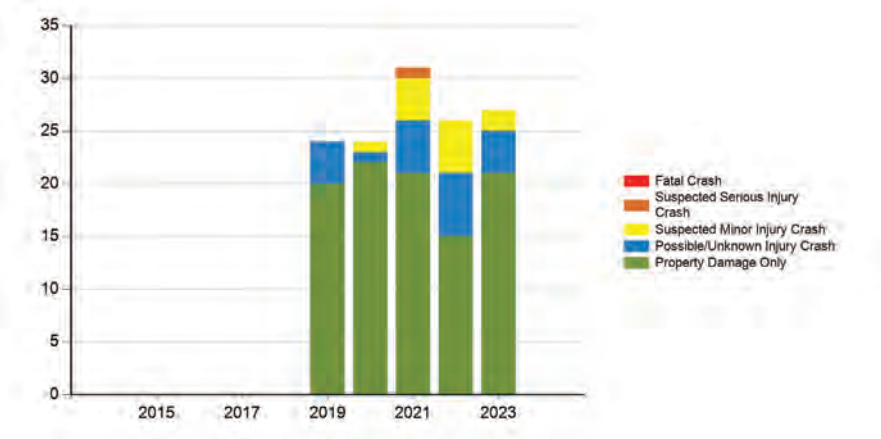
Drug Test Result	261
Negative	0
Cannabis	0
Central Nervous System depressants	0
Central Nervous System stimulants	0
Hallucinogens	0
Inhalants	0
Narcotic Analgesics	0
Dissociative Anesthetic (PCP)	0
Prescription Drug	0
Not reported	261
Other	0

Iowa Crash Analysis Tool
Quick Report
2019-2023

Crash Severity - Annual

Crash Year	Fatal Crash	Suspected Serious Injury Crash	Suspected Minor Injury Crash	Possible/Unknown Injury Crash	Property Damage Only	**Total**
2014	0	0	0	0	0	0
2015	0	0	0	0	0	0
2016	0	0	0	0	0	0
2017	0	0	0	0	0	0
2018	0	0	0	0	0	0
2019	0	0	0	4	20	24
2020	0	0	1	1	22	24
2021	0	1	4	5	21	31
2022	0	0	5	6	15	26
2023	0	0	2	4	21	27
2024	0	0	0	0	0	0
Total	0	1	12	20	99	132

Severity/Year

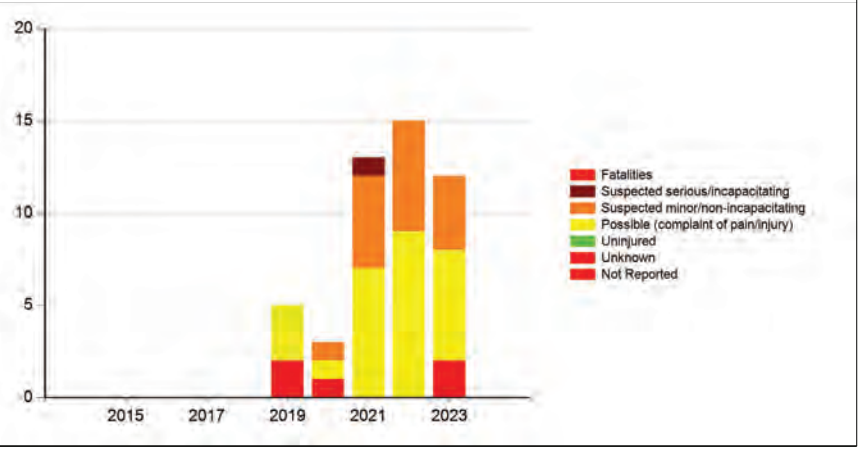


Iowa Crash Analysis Tool
Quick Report
2019-2023

Injury Status - Annual

Crash Year	Fatalities	Suspected serious/incapacitating	Suspected minor/non-incapacitating	Possible (complaint of pain/injury)	Uninjured	Unknown	Not Reported	**Total**
2014	0	0	0	0	0	0	0	0
2015	0	0	0	0	0	0	0	0
2016	0	0	0	0	0	0	0	0
2017	0	0	0	0	0	0	0	0
2018	0	0	0	0	0	0	0	0
2019	0	0	0	3	0	1	1	5
2020	0	0	1	1	0	0	1	3
2021	0	1	5	7	0	0	0	13
2022	0	0	6	9	0	0	0	15
2023	0	0	4	6	0	1	1	12
2024	0	0	0	0	0	0	0	0
Total	0	1	16	26	0	2	3	48

Injury Status/Year



Iowa Crash Analysis Tool
Quick Report
2019-2023

Meeting the following criteria

Jurisdiction: Statewide
Year: 2019, 2020, 2021, 2022, 2023
Map Selection: Yes
Filter: None

Analyst Information

Iowa Department of Transportation

Turning Movement Traffic Count Summary

Annualized Daily Traffic For All Vehicles

Station Number:
77211730399

Count Date:
Tuesday, September 20, 2016

County:
Polk

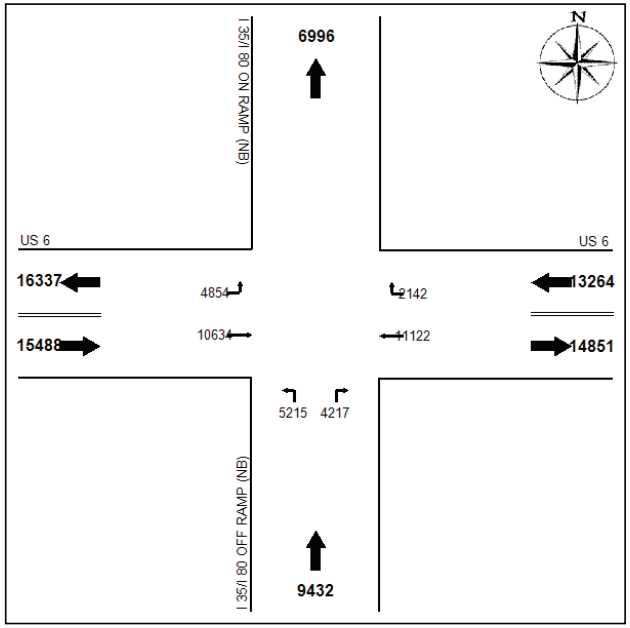
Location Description:
I-80/I-35 & US 6/HICKMAN RD

Volume Factor: 1.828

Pass Class Factor: 1.825

SU Class Factor: 1.485

Combo Class Factor: 1.488



Raw Data-All Vehicles:

	E Leg		S Leg		W Leg	
	T	*R*	*L*	*R*	*L*	*T*
07:00	659	110	344	416	531	1,005
08:00	707	142	371	403	408	1,004
11:00	712	140	355	278	332	722
12:00	839	132	304	268	323	786
15:00	928	213	433	285	356	775
16:00	1,175	259	551	364	349	794
17:00	1,104	187	528	310	415	770

Iowa Department of Transportation

Turning Movement Traffic Count Summary

Vehicle Type: Passenger Vehicles

Station Number:
77211730399

Count Date:
Tuesday, September 20, 2016

County:
Polk

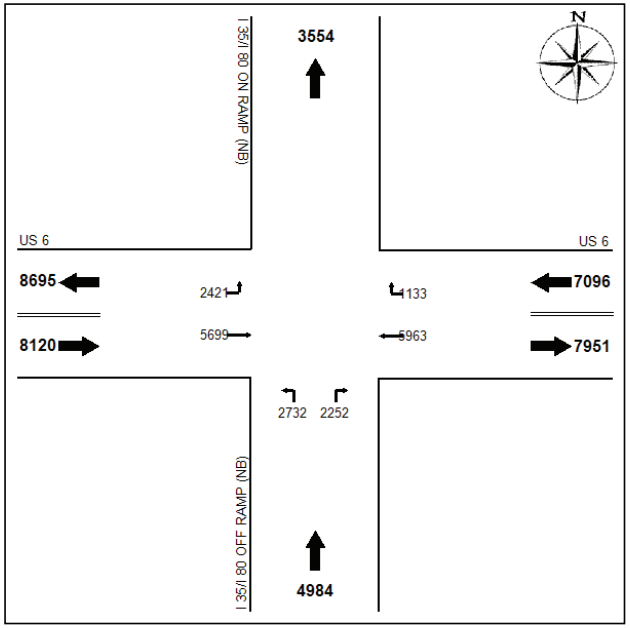
Location Description:
I-80/I-35 & US 6/HICKMAN RD

Volume Factor: N/A

Pass Class Factor: N/A

SU Class Factor: N/A

Combo Class Factor: N/A



Raw Data-Passenger Vehicles:

	E Leg		S Leg		W Leg	
	T	*R*	*L*	*R*	*L*	*T*
07:00	642	103	330	405	496	990
08:00	682	132	346	395	368	986
11:00	678	132	326	272	287	698
12:00	805	125	280	251	270	748
15:00	908	202	412	275	301	753
16:00	1,159	255	530	351	315	770
17:00	1,089	184	508	303	384	754

Iowa Department of Transportation

Turning Movement Traffic Count Summary

Vehicle Type: Single-Unit Trucks

Station Number:
77211730399

Count Date:
Tuesday, September 20, 2016

County:
Polk

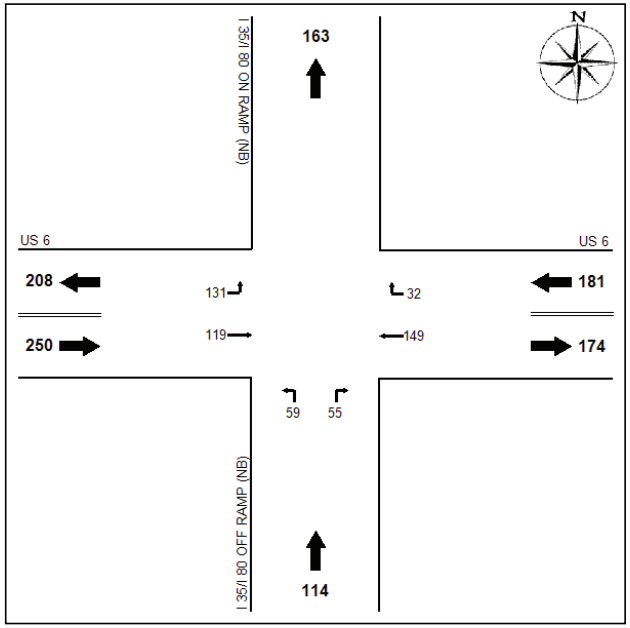
Location Description:
I-80/I-35 & US 6/HICKMAN RD

Volume Factor: N/A

Pass Class Factor: N/A

SU Class Factor: N/A

Combo Class Factor: N/A



Raw Data-Single-Unit Trucks:

	E Leg		S Leg		W Leg	
	T	*R*	*L*	*R*	*L*	*T*
07:00	16	5	6	7	11	9
08:00	23	8	12	7	11	14
11:00	31	6	13	4	23	16
12:00	31	2	6	9	27	28
15:00	20	9	7	10	27	18
16:00	16	1	10	12	17	22
17:00	12	1	5	6	15	12

Iowa Department of Transportation

Turning Movement Traffic Count Summary

Vehicle Type: Combination Trucks

Station Number:
77211730399

Count Date:
Tuesday, September 20, 2016

County:
Polk

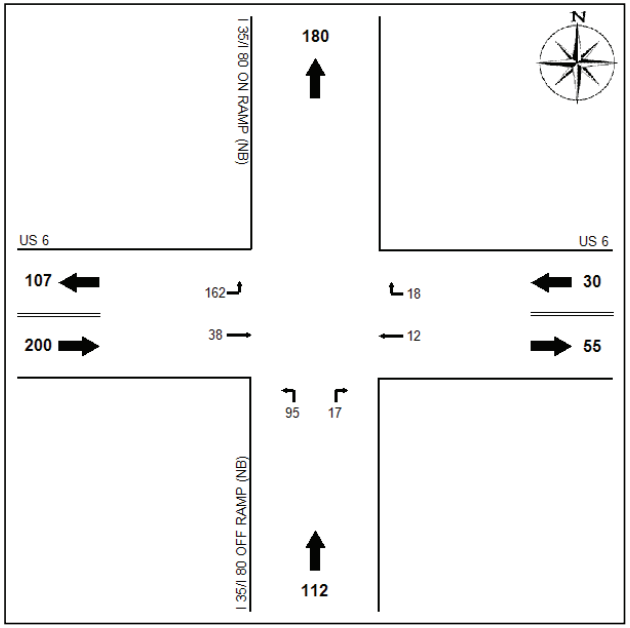
Location Description:
I-80/I-35 & US 6/HICKMAN RD

Volume Factor: N/A

Pass Class Factor: N/A

SU Class Factor: N/A

Combo Class Factor: N/A



Raw Data-Combination Trucks:

	E Leg		S Leg		W Leg	
	T	*R*	*L*	*R*	*L*	*T*
07:00	1	2	8	4	24	6
08:00	2	2	13	1	29	4
11:00	3	2	16	2	22	8
12:00	3	5	18	8	26	10
15:00	0	2	14	0	28	4
16:00	0	3	11	1	17	2
17:00	3	2	15	1	16	4

Iowa Department of Transportation

Turning Movement Traffic Count Summary

Annualized Daily Traffic For All Vehicles

Station Number:
77211730799

Count Date:
Tuesday, September 20, 2016

County:
Polk

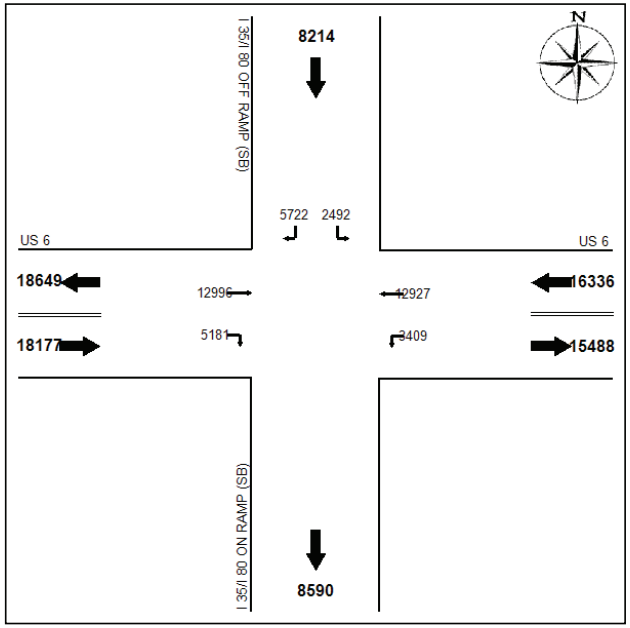
Location Description:
I-35, I-80 & US 6/HICKMAN RD

Volume Factor: 1.828

Pass Class Factor: 1.825

SU Class Factor: 1.485

Combo Class Factor: 1.488



Raw Data-All Vehicles:

	N Leg		E Leg		W Leg	
	L	*R*	*L*	*T*	*T*	*R*
07:00	275	478	188	815	1,261	491
08:00	255	415	225	853	1,157	500
11:00	150	359	205	862	904	356
12:00	164	381	269	874	945	351
15:00	191	455	244	1,117	940	321
16:00	178	570	382	1,344	965	401
17:00	162	528	364	1,268	1,023	456

Iowa Department of Transportation

Turning Movement Traffic Count Summary

Vehicle Type: Passenger Vehicles

Station Number:
77211730799

Count Date:
Tuesday, September 20, 2016

County:
Polk

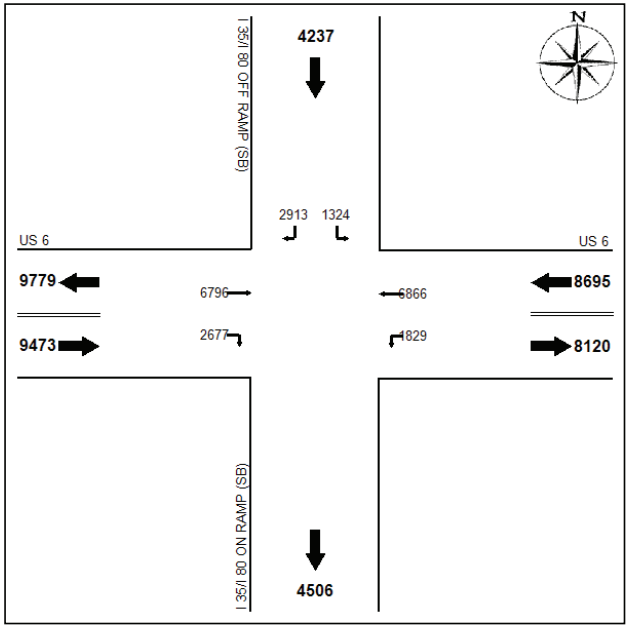
Location Description:
I-35, I-80 & US 6/HICKMAN RD

Volume Factor: N/A

Pass Class Factor: N/A

SU Class Factor: N/A

Combo Class Factor: N/A



Raw Data-Passenger Vehicles:

	N Leg		E Leg		W Leg	
	L	*R*	*L*	*T*	*T*	*R*
07:00	270	449	185	787	1,216	460
08:00	250	373	212	816	1,104	459
11:00	143	310	199	805	842	327
12:00	151	341	259	826	867	327
15:00	182	411	242	1,078	872	293
16:00	170	537	376	1,313	915	372
17:00	158	492	356	1,241	980	439

Iowa Department of Transportation

Turning Movement Traffic Count Summary

Vehicle Type: Single-Unit Trucks

Station Number:
77211730799

Count Date:
Tuesday, September 20, 2016

County:
Polk

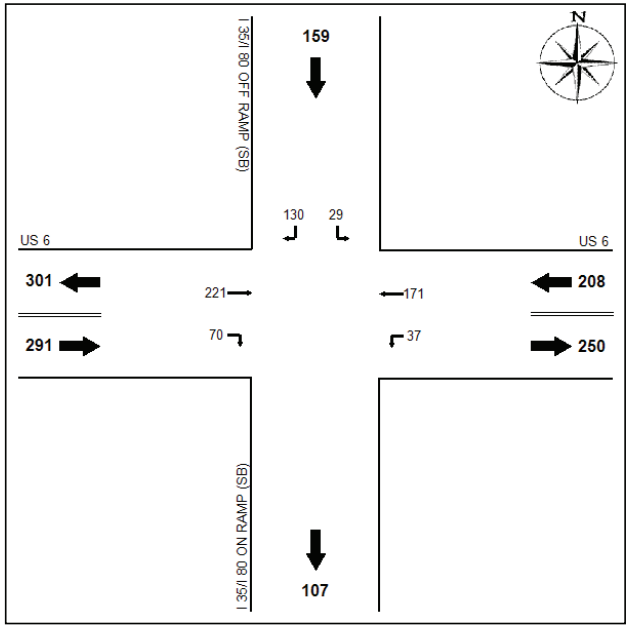
Location Description:
I-35, I-80 & US 6/HICKMAN RD

Volume Factor: N/A

Pass Class Factor: N/A

SU Class Factor: N/A

Combo Class Factor: N/A



Raw Data-Single-Unit Trucks:

	N Leg		E Leg		W Leg	
	L	*R*	*L*	*T*	*T*	*R*
07:00	1	18	3	19	19	10
08:00	3	24	11	24	22	12
11:00	2	18	5	39	37	12
12:00	9	22	6	31	46	7
15:00	6	24	1	26	39	12
16:00	7	15	6	20	32	8
17:00	1	9	5	12	26	9

Iowa Department of Transportation

Turning Movement Traffic Count Summary

Vehicle Type: Combination Trucks

Station Number:
77211730799

Count Date:
Tuesday, September 20, 2016

County:
Polk

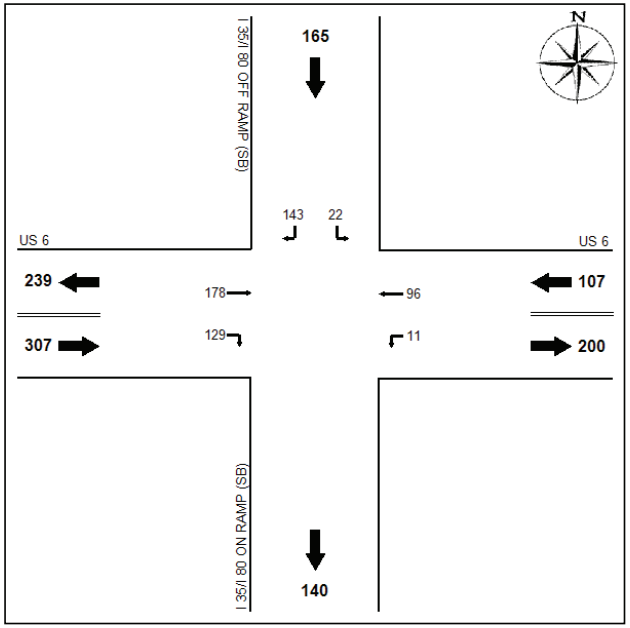
Location Description:
I-35, I-80 & US 6/HICKMAN RD

Volume Factor: N/A

Pass Class Factor: N/A

SU Class Factor: N/A

Combo Class Factor: N/A



Raw Data-Combination Trucks:

	N Leg		E Leg		W Leg	
	L	*R*	*L*	*T*	*T*	*R*
07:00	4	11	0	9	26	21
08:00	2	18	2	13	31	29
11:00	5	31	1	18	25	17
12:00	4	18	4	17	32	17
15:00	3	20	1	13	29	16
16:00	1	18	0	11	18	21
17:00	3	27	3	15	17	8

TRAFFIC SIGNAL PHASING INFORMATION

The existing traffic signals at both ramp termini allow protected-permissive left turns from US 6 onto the I-35/80 on-ramps.

The proposed signals for the diverging diamond interchange have not been designed yet, so exact timing and layout information is not yet available. It is currently anticipated that the left and right turns from the I-35/80 off-ramps onto US 6 will be controlled by traffic signals.

BENEFIT/COST ANALYSIS

As discussed in Section C, the safety cost for this project was estimated as half the cost of the improvements directly related to converting I-35/80 and US 6 interchange to a diverging diamond. The estimated safety cost associated with the project is $6,239,340.

There are no crash reduction factors (CRFs) applicable to this project in the Iowa DOT's planning-level CRF list. However, there are several CRFs available in the FHWA's CMF Clearinghouse for the conversion of a standard diamond interchange to a diverging diamond interchange:

- 14.2% reduction in all crashes (CMF ID 10761)
- 44.2% reduction in fatal and injury crashes (CMF ID 10762)
- 8% reduction in property damage only crashes (CMF ID 10763)

In the benefit/cost analysis, the 44.2% reduction was applied to fatal and injury crashes and property damage only crashes were excluded. The focus on reduction of fatal and injury crashes is in alignment with the Iowa DOT's Strategic Highway Safety Plan, which includes the ultimate goal of Zero Fatalities. Exclusion of the property damage only crashes results in a conservative benefit/cost estimate because they are expected to be reduced with this project, but that reduction is not reflected in the analysis.

The *Traffic Forecast Volume Technical Memorandum* from the *SW I-80/I-35/I-235 System Interchange Justification Report* (HR Green, March 31, 2023) includes most recent DOT approved traffic forecasts for the area. That memorandum indicated traffic growth of about 1.4 to 1.5 percent per year at the I-35/80 and US 6 interchange, so a growth rate 1.4 percent per year was used in the benefit/cost analysis.

The resulting benefit/cost ratio is 2.1 to 1.

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County:	Polk	Prepared By:	AJH
Location:	I-35/80 & US 6 Interchange	Date Prepared:	7/17/2024
Proposed Improvements:	Convert existing diamond interchange to diverging diamond with associated roadway improvements on I-35/80 and US 6		
Estimated Improvement Cost:	$ 6,239,340		
Inflation on Crash Costs:	4%	Annual Maintenance: (% of Improvement Cost)	2%
Discount Rate:	4%		
Estimated Service Life:	20	Annual Maintenance Cost:	$ 124,787

Method Choice: CRF Method

The Crash Reduction Factor (CRF) Method applies one to three CRFs to historical crashes to estimate reductions in future crashes. Crash Modification Factors (CMFs) can be converted to CRFs. For additional information, click the "Learn More" button.

Crash Reduction Factor (CRF) Method

Traffic Growth Factor:	1.4%
Number of CRFs:	1
Years of Crash History:	5

Combined CRF (Dominant Common Residuals Method)

Iowa DOT's preferred methodology for combining CRFs is Dominant Common Residuals, since it is more conservative than the other options.

	CRF 1:	Combined CRF
CRF Value (%)	44.2	**44.2**

Crash Severity	Rounded Societal Costs	Crash History (Total):	CRF (from above)	Crash History - Annual Avg	Crashes Saved Annually
Fatal (K)	$ 4,200,000	0	44.2	**0.00**	**0.00**
Serious Injury (A)	$ 4,200,000	1	44.2	**0.20**	**0.09**
Minor Injury (B)	$ 280,000	16	44.2	**3.20**	**1.41**
Possible/Unknown Injury (C)	$ 130,000	28	44.2	**5.60**	**2.48**
Property Damage Only (O)	$ 20,000	0	44.2	**0.00**	**0.00**

Crash Severity	Annual Societal Benefit
Fatal (K)	**$ -**
Serious Injury (A)	**$ 371,280**
Minor Injury (B)	**$ 396,032**
Possible/Unknown Injury (C)	**$ 321,776**
Property Damage Only (O)	**$ -**

Total Benefits and Costs

		Implementation Cost	$ 6,239,340
		Present Value of Maint.	$ 1,695,893
Present Value Benefits (Societal Benefits)	$ 16,642,618	Present Value Costs (Impl. and Maint. Costs)	$ 7,935,233
Present Value Net Return	$ 8,707,385		
Benefit Cost Ratio	**2.10**		

Form continues on next page

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County:	Polk	Prepared By:	AJH
Location:	I-35/80 & US 6 Interchange	Date Prepared:	7/17/2024

User Input Required - Custom Values Used

General Customizations

No change to Crash Costs

No change to Discount Rate

No change to Maintenance Costs

Method-Specific Customizations

Justification for deviation from default Traffic Growth Rate	Based on forecasted traffic from Interchange Justification Reports (IJRs) for the target interchange and the nearby I-80/I-35/I-235 Systems Interchange

No change to Crash History

Rev. 07/23

Application for SITE-SPECIFIC TSIP FUNDS

GENERAL INFORMATION **DATE:** 8/9/24

Location / Title of Project IA 4 in Jefferson 4 to 3 conversion

Applicant Iowa Department of Transportation District 1

Contact Person Gary Kretlow Title D1 Traffic Tech

Complete Mailing Address 1020 S. 4th Street

Ames, IA 50010

Phone 515-239-1199 (Area Code) E-Mail Gary.kretlowjr@iowadot.us

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	$	1,050,000
Total Project Cost	$	1,050,000
Safety Funds Requested	**$**	**500,000**

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
		☐	☐		
		☐	☐		

IA 4 in Jefferson 4 to 3 lane conversion

1. <u>Existing Conditions</u>

I 4 is a 4-lane roadway within the city limits of Jefferson. The posted speed limit is mainly 35mph with 45mph on the north and south edge of town. There is a signal at IA 4 and Russell Street that was originally installed to help with pedestrian traffic cross IA 4 to the swimming pool. The elementary school is now east on Russell Street which helps some kids cross IA 4 to attend the school.

2. <u>Proposed Concept</u>

The proposed concept is to convert the current 4-lane roadway to a 3-lane roadway based on traffic counts and a previous study.

3. <u>Justification</u>

A statewide screening was completed in 2017 to review possible 4-lane roads that would be ideal candidates to convert to 3-lane roadways. The District also believes this would help with any students who need to cross IA 4 to the elementary school, middle school, and the high school.

1	JEFFERSON	RPA 12	S ELM ST/ IOWA 4	250TH ST	E LINCOLN WAY	4,290	1.35	33	YES	153
1	JEFFERSON	RPA 12	N ELM ST/ IOWA 4	E LINCOLN WAY	US 30	7,000	1.25	30	NO	318

4. <u>Cost Estimate and Proposed Funding Sources</u>

The cost of the proposed improvements is estimated at $1,050,000. It is proposed to fund the cost of the project with TSIP funds and HSIP funds. The project will be constructed within current right of way.

5. <u>Proposed Schedule</u>

The project is proposed for letting in fiscal year 2026 with construction to be completed by end of 2026.

<u>Project Quantities</u>

SCL to Lincolnway (PCC Section)
Pavement Marking Removal-$67,750
Markings-$67,600
Total-$135,350

Lincolnway to North of IA 4 (HAM Section)

2” Milling-$81,000
2” Surface-$427,500
Binder-$220,000
Markings-$160,000

Total=$1,050,000

County:	Greene	Prepared By:	Gary Kretlow
Location:	IA 4 within Jefferson	Date Prepared:	8/9/2024
Proposed Improvements:	Convert IA 4 from 4 lanes to 3 lanes		
Estimated Improvement Cost:	$ 1,050,000		
Inflation on Crash Costs:	4%	Annual Maintenance:	2%
Discount Rate:	4%	(% of Improvement Cost)	
Estimated Service Life:	20	Annual Maintenance Cost:	$ 21,000

Method Choice: CRF Method

The Crash Reduction Factor (CRF) Method applies one to three CRFs to historical crashes to estimate reductions in future crashes. Crash Modification Factors (CMFs) can be converted to CRFs. For additional information, click the "Learn More" button.

Crash Reduction Factor (CRF) Method

Traffic Growth Factor:	1%
Number of CRFs:	1
Years of Crash History:	5

Combined CRF (Dominant Common Residuals Method)

Iowa DOT's preferred methodology for combining CRFs is Dominant Common Residuals, since it is more conservative than the other options.

	CRF 1:	Combined CRF
CRF Value (%)	30	**30.0**

Crash Severity	Rounded Societal Costs	Crash History (Total):	CRF (from above)	Crash History - Annual Avg	Crashes Saved Annually
Fatal (K)	$ 4,200,000	0	30.0	**0.00**	**0.00**
Serious Injury (A)	$ 4,200,000	0	30.0	**0.00**	**0.00**
Minor Injury (B)	$ 280,000	6	30.0	**1.20**	**0.36**
Possible/Unknown Injury (C)	$ 130,000	5	30.0	**1.00**	**0.30**
Property Damage Only (O)	$ 20,000	39	30.0	**7.80**	**2.34**

Crash Severity	Annual Societal Benefit
Fatal (K)	**$ -**
Serious Injury (A)	**$ -**
Minor Injury (B)	**$ 100,800**
Possible/Unknown Injury (C)	**$ 39,000**
Property Damage Only (O)	**$ 46,800**

Total Benefits and Costs

		Implementation Cost	$ 1,050,000
		Present Value of Maint.	$ 285,397
Present Value Benefits (Societal Benefits)	$ 2,756,214	Present Value Costs (Impl. and Maint. Costs)	$ 1,335,397
Present Value Net Return	$ 1,420,817		
Benefit Cost Ratio	**2.06**		

Form continues on next page

Iowa Crash Analysis Tool
Quick Report
2019-2023

Crash Severity	50
Fatal Crash	0
Suspected Serious Injury Crash	0
Suspected Minor Injury Crash	6
Possible/Unknown Injury Crash	5
Property Damage Only	39

Injury Status Summary	17
Fatalities	0
Suspected serious/incapacitating	0
Suspected minor/non-incapacitating	6
Possible (complaint of pain/injury)	4
Uninjured	0
Unknown	2
Not Reported	5

Property/Vehicles/Occupants	
Property Damage Total (dollars):	328,100.00
Average (per crash dollars):	6,562.00
Total Vehicles:	85.00
Average (per crash):	1.70
Total Occupants:	100.00
Average (per crash):	2.00

Average Severity	
Fatalities/Fatal Crash:	0.00
Fatalities/Crash:	0.00
Injuries/Crash:	0.20
Major Injuries/Crash:	0.00
Minor Injuries/Crash:	0.12
Possible/Unknown Injuries/Crash:	0.08

Major Cause			50
Animal	7	Ran traffic signal	1
Ran stop sign	4	Failed to yield to emergency vehicle	0
FTYROW: At uncontrolled intersection	0	FTYROW: Making right turn on red signal	0
FTYROW: From stop sign	6	FTYROW: From yield sign	0
FTYROW: Making left turn	2	FTYROW: From driveway	1
FTYROW: From parked position	1	FTYROW: To pedestrian	0
FTYROW: Other	0	Drove around RR grade crossing gates	0
Disregarded RR Signal	0	Crossed centerline (undivided)	1
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	3
Operating vehicle in an reckless/erratic/care...	3	Followed too close	1
Passing: On wrong side	0	Passing: Where prohibited by signs/markings	0
Passing: With insufficient distance/inadequa...	1	Passing: Through/around barrier	0
Passing: Other passing	0	Made improper turn	5
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...	1	Driver Distraction: Other interior distracti...	2
Driver Distraction: Exterior distraction	1	Ran off road - right	1
Ran off road - straight	0	Ran off road - left	0
Lost control	1	Swerving/Evasive Action	0
Over correcting/over steering	0	Failed to keep in proper lane	1
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	1	Improper starting	0
Illegally parked/unattended	0	Driving less than the posted speed limit	0
Operator inexperience	0	Other	2
Unknown	1	Not reported	0
Other: No improper action	2		

Iowa Crash Analysis Tool
Quick Report
2019-2023

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	1	0	0	0	0	1
Monday	0	0	1	1	0	0	1	0	0	2	0	0	0	5
Tuesday	0	0	0	2	0	0	5	2	4	1	0	0	0	14
Wednesday	0	0	0	0	1	1	2	1	0	2	0	0	0	7
Thursday	0	0	1	2	2	3	2	1	0	2	1	1	0	15
Friday	0	0	0	1	0	1	1	1	1	0	0	0	0	5
Saturday	0	0	0	0	0	0	0	1	0	1	1	0	0	3
Total	0	0	2	6	3	5	11	6	6	8	2	1	0	50

Manner of Crash Collision	**50**
Non-collision (single vehicle)	12
Head-on (front to front)	0
Rear-end (front to rear)	5
Angle (oncoming left turn)	7
Broadside (front to side)	11
Sideswipe (same direction)	8
Sideswipe (opposite direction)	0
Rear to rear	0
Rear to side	1
Not reported	4
Other	2
Unknown	0

Surface Conditions	**50**
Dry	36
Wet	6
Ice/frost	3
Snow	1
Slush	0
Mud/dirt	0
Water (standing or moving)	0
Sand	0
Oil	0
Gravel	0
Not reported	4
Other	0
Unknown	0

Fixed Object Struck			**85**
Bridge overhead structure	0	Bridge pier or support	0
Bridge/bridge rail parapet	0	Curb/island/raised median	0
Ditch	0	Embankment	0
Ground	1	Culvert/pipe opening	0
Guardrail - face	0	Guardrail - end	0
Concrete traffic barrier (median or right sid...	1	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	1
Tree	2	Landscape/shrubbery	0
Snow bank	0	Fence	0
Wall	0	Building	0
Other fixed object	0	None (no fixed object struck)	80

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	1	2	0	0	3
= 17	0	4	0	0	4
= 18	1	1	0	0	2
= 19	0	2	0	0	2
= 20	0	1	0	0	1
>= 21 and <= 24	1	3	0	0	4
>= 25 and <= 29	3	6	0	0	9
>= 30 and <= 34	2	3	0	0	5
>= 35 and <= 39	1	3	0	0	4
>= 40 and <= 44	4	2	0	0	6
>= 45 and <= 49	5	0	0	0	5
>= 50 and <= 54	2	1	0	0	3
>= 55 and <= 59	4	6	0	0	10
>= 60 and <= 64	5	3	0	0	8
>= 65 and <= 69	1	4	0	0	5
>= 70 and <= 74	3	3	0	0	6
>= 75 and <= 79	1	1	0	0	2
>= 80 and <= 84	0	3	0	0	3
>= 85 and <= 89	1	0	0	0	1
>= 90 and <= 94	1	0	0	0	1
>= 95	0	0	0	0	0
Not reported	0	0	0	0	0
Unknown	0	0	1	0	1
Total	36	48	1	0	85

Drug/Alcohol Related	50
Drug	0
Alcohol (< Statutory)	0
Alcohol (Statutory)	2
Drug and Alcohol (< Statutory)	0
Drug and Alcohol (Statutory)	0
Refused	0
Under Influence of Alcohol/Drugs/Medications	0
None Indicated	48

Alcohol Test Given	85
None	82
Blood	1
Urine	0
Breath	1
Vitreous	0
Refused	0
Not reported	1

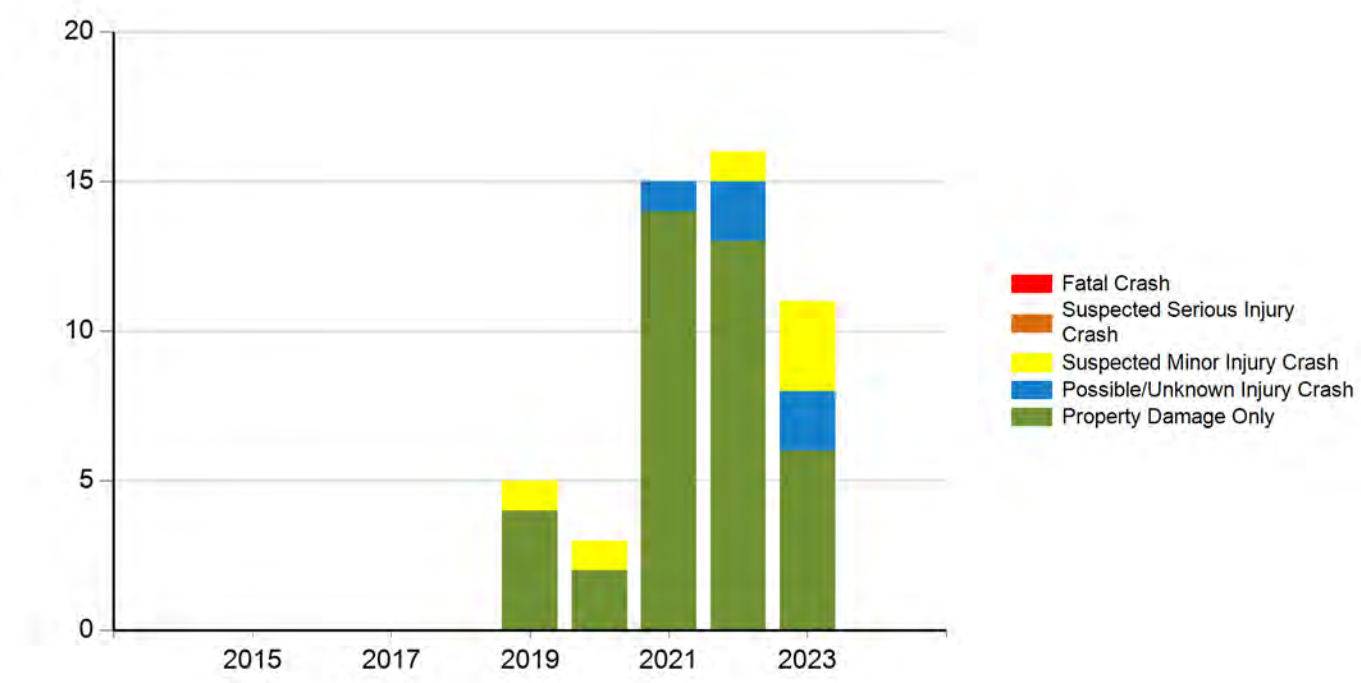
Drug Test Given	85
None	84
Blood	0
Urine	0
Breath	0
Vitreous	0
Refused	0
Not reported	1

Drug Test Result	85
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	85
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**
2014	0	0	0	0	0	0
2015	0	0	0	0	0	0
2016	0	0	0	0	0	0
2017	0	0	0	0	0	0
2018	0	0	0	0	0	0
2019	0	0	1	0	4	5
2020	0	0	1	0	2	3
2021	0	0	0	1	14	15
2022	0	0	1	2	13	16
2023	0	0	3	2	6	11
2024	0	0	0	0	0	0
Total	0	0	6	5	39	50

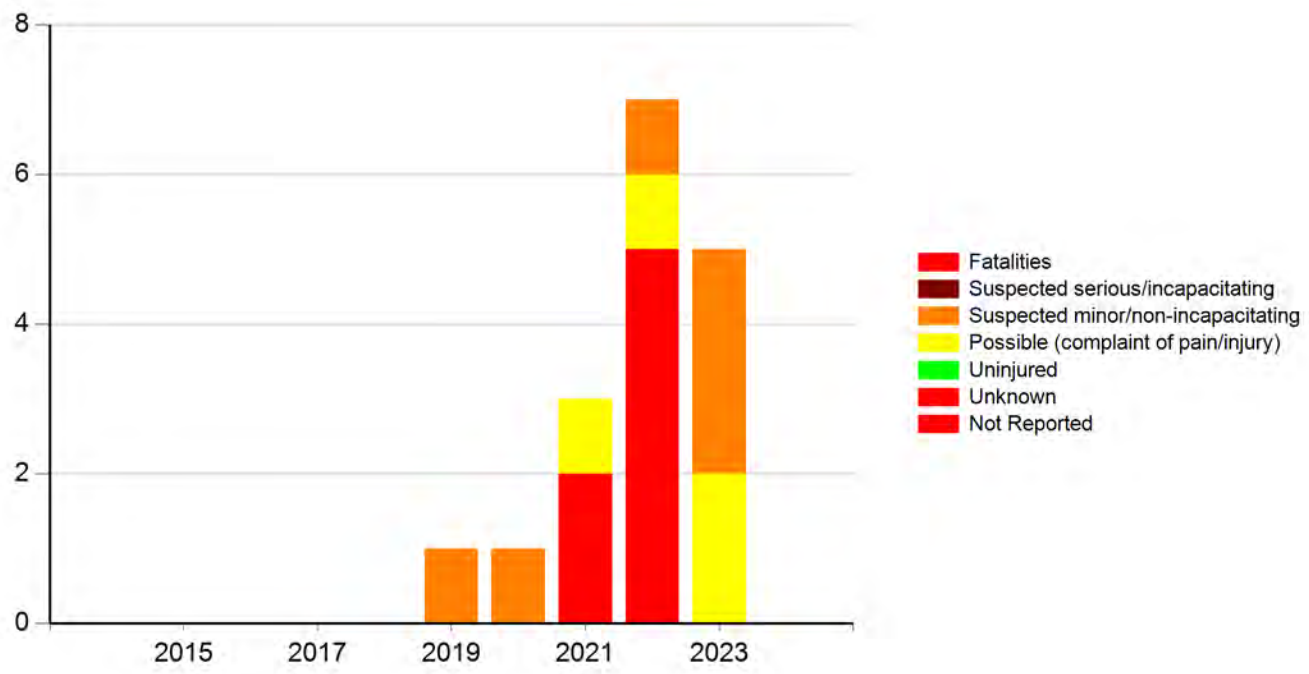
Severity/Year



Injury Status - Annual

Crash Year	Fatalities	Suspected serious/incapacitating	Suspected minor/non-incapacitating	Possible (complaint of pain/injury)	Uninjured	Unknown	Not Reported	**Total**
2014	0	0	0	0	0	0	0	0
2015	0	0	0	0	0	0	0	0
2016	0	0	0	0	0	0	0	0
2017	0	0	0	0	0	0	0	0
2018	0	0	0	0	0	0	0	0
2019	0	0	1	0	0	0	0	1
2020	0	0	1	0	0	0	0	1
2021	0	0	0	1	0	0	2	3
2022	0	0	1	1	0	2	3	7
2023	0	0	3	2	0	0	0	5
2024	0	0	0	0	0	0	0	0
Total	0	0	6	4	0	2	5	17

Injury Status/Year



Meeting the following criteria

Jurisdiction: Cities (Jefferson)
Year: 2019, 2020, 2021, 2022, 2023
Map Selection: No
Filter: Primary Route Number (4)

Analyst Information

Iowa Traffic Data

IOWA | DOT

Average Traffic Volume | Traffic Collection | Turning Movement | References

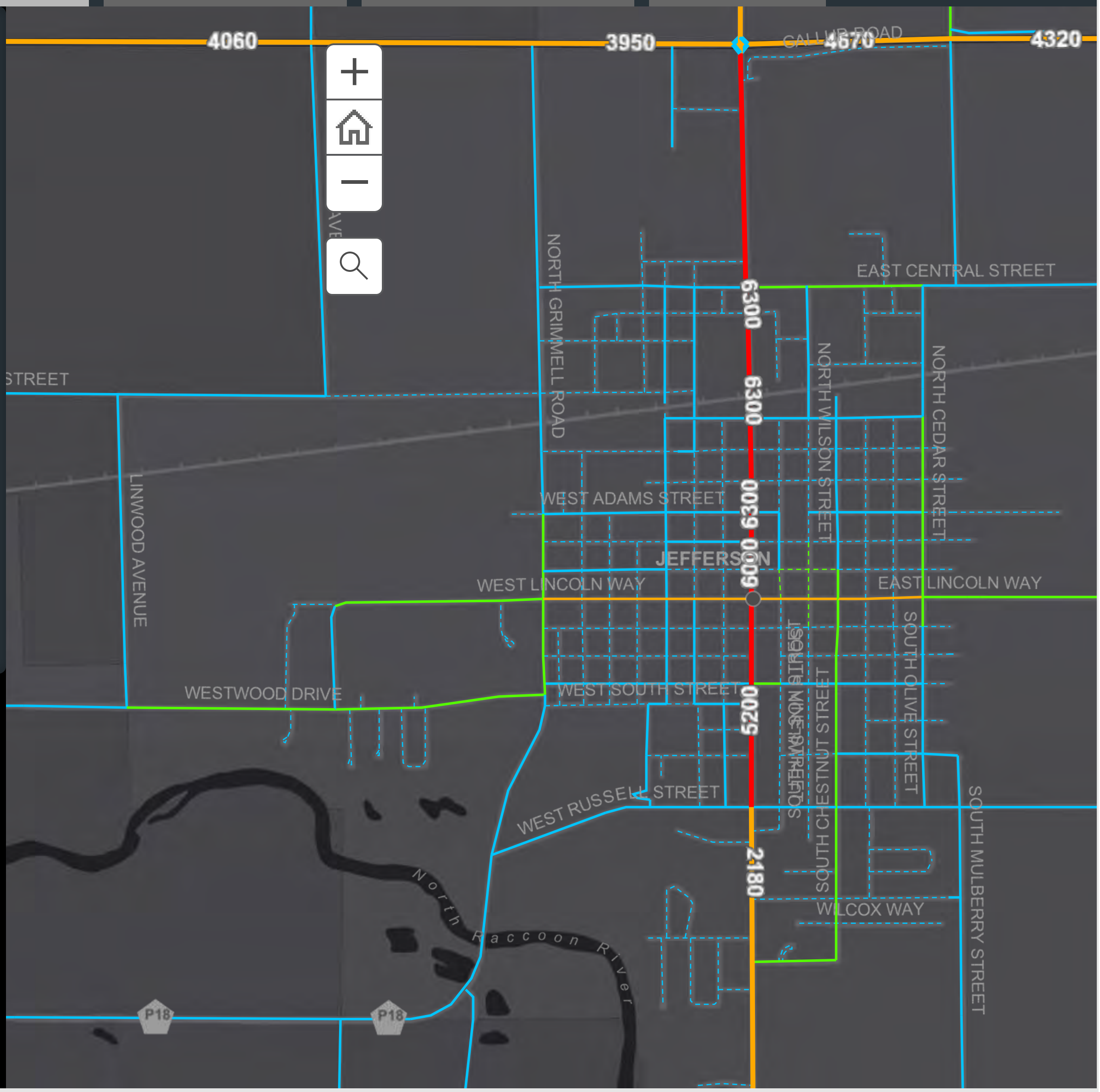
ANNUAL AVERAGE DAILY TRAFFIC (AADT)

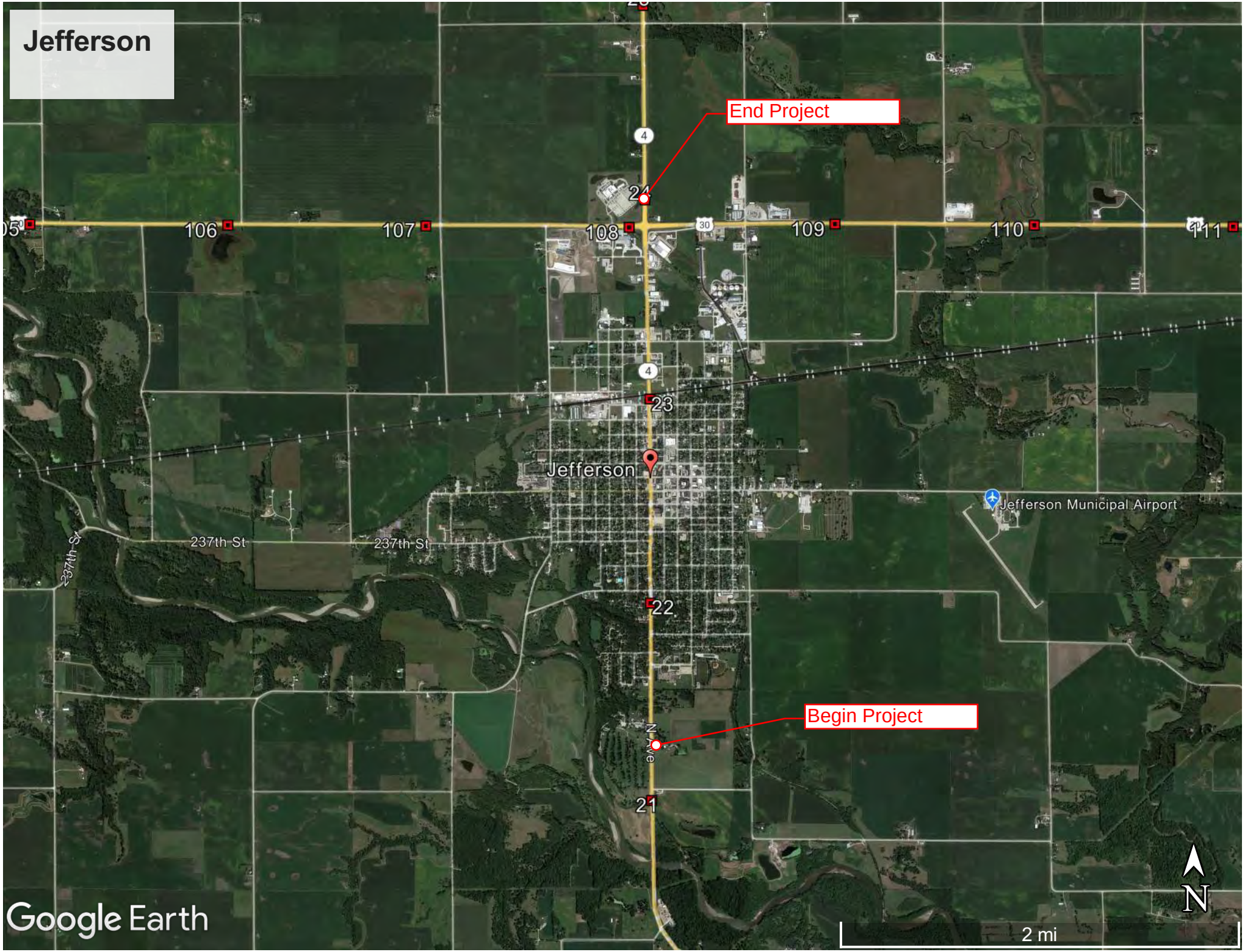
Click on the road for additional information.

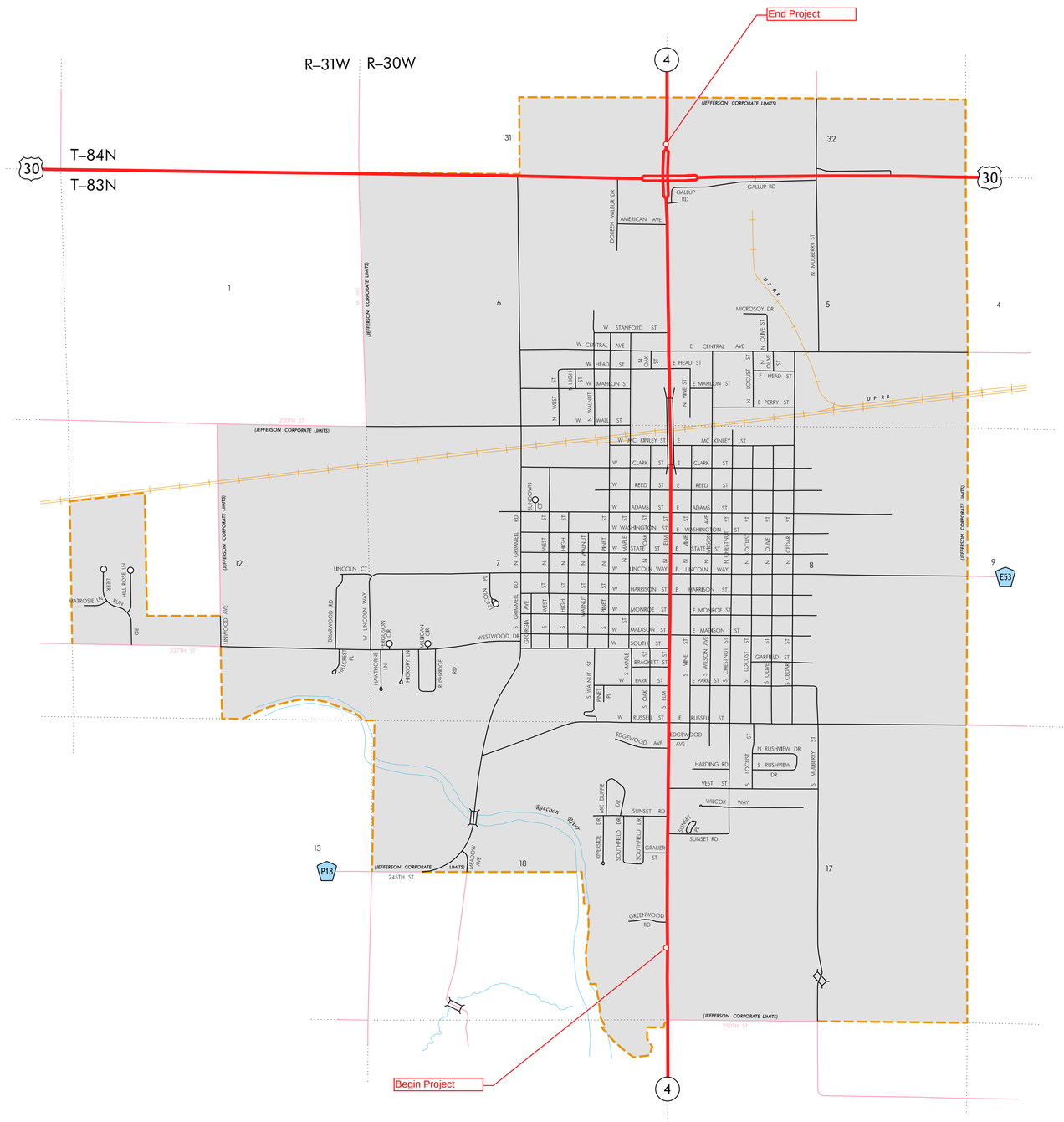
NOTE: Secondary and Municipal Traffic available at inner zoom scales only.

Thematic map displaying Interstate, Primary, Secondary and Municipal Vehicular Annual Average Daily Traffic (AADT) information for the road segments in the state of Iowa.

Additional information about a specific count contact the




Jefferson
End Project
Begin Project
24
23
22
21
106
107
108
109
110
111
4
30
Jefferson
Jefferson Municipal Airport
237th St
237th St
237th St
N Ave
Google Earth
2 mi
N



N
12 – 29 – 15

LEGEND

INTERSTATE ROUTE	35
FREEWAY OR EXPRESSWAY ROUTE	30
U.S. NUMBERED ROUTE	6
BUSINESS ROUTE	61
STATE NUMBERED ROUTE	44
UNSIGNED ROUTE	461
COUNTY NUMBERED ROUTE	R38
SECONDARY ROAD OR ADJOINING CITY STREET	
CITY STREET	
PARK, INSTITUTION, OR FEDERAL ROAD	
RAILROAD	
CORPORATION LINE	
SECTION LINE	
CUL-DE-SAC	
SECTION, TOWNSHIP & RANGE NUMBERS	9, T-81N, R-30W

SCALE IN MILES

0 0.1 0.2 0.3 0.4 0.5 0.75 1.0

0 0.1 0.2 0.3 0.4 0.5 1.0 1.5 2.0

SCALE IN KILOMETERS

HIGHWAY AND STREET MAP OF

JEFFERSON 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

37–3800

Rev. 07/23

Application for SITE-SPECIFIC TSIP FUNDS

GENERAL INFORMATION **DATE:** 7/26/24

Location / Title of Project U.S. 30 and Durham Ave. State Center

Applicant District 1

Contact Person Gary Kretlow Title D1 Traffic Tech

Complete Mailing Address 1020 South 4th Street

Ames, IA 50010

Phone 515-239-119 (Area Code) E-Mail Gary.kretlowjr@iowadot.us

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) State Center

Contact Person Jon Thomas Title Police Chief

Complete Mailing Address 108 4th Street

State Center, IA 50247

Phone 641-483-2107 (Area Code) E-Mail jthomas@statecenterpolice.org

PLEASE COMPLETE THE FOLLOWING PROJECT INFORMATION:

Funding Amount

Total Safety Cost	$	2,000,000
Total Project Cost	$	2,000,000
Safety Funds Requested	**$**	**500,000**

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
2017055259	U.S. 30 and Durham Ave.	☒	☐		
		☐	☐		

U.S. 30 & Durham Ave. in State Center

1. Existing Conditions

U.S. 30 is a 4-lane expressway with a posted speed limit of 65mph. Durham Avenue south of U.S. 30 is a gravel road maintained by Marshall County. North of U.S. 30 is a 2-lane posted at 45mph then down to 25mph.

2. Proposed Concept

Based on the review of existing conditions and accidents, District 1 has worked with State Center, Marshall County, and other locals to propose a Reduced Conflict Intersection.

3. Justification

This intersection has a high PCR based on the 2018-2022 data and is medium for fatal, serious injury, and minor injury crashes.

US 30 & Durham Ave	**PCR-All Crashes**	**PCR-Severe Crashes**
2018-2022 PCR Level	High	Medium
Category Rank	36 of 1,166	38 of 1,166
2016-2020 PCR Level	Negligible	Negligible
Category Rank	84 of 1,088	406 of 1,088

*Category: Divided, High Speed, Partial Stop Control

4. Cost Estimate and Proposed Funding Sources

The cost of the proposed improvements is estimated at $1,000,000. It is proposed to fund the cost of the project with TSIP funds and HSIP funds. The project will be constructed within current right of way.

5. Proposed Schedule

The project is proposed for letting in fiscal year 2026 with construction to be completed by end of 2026.

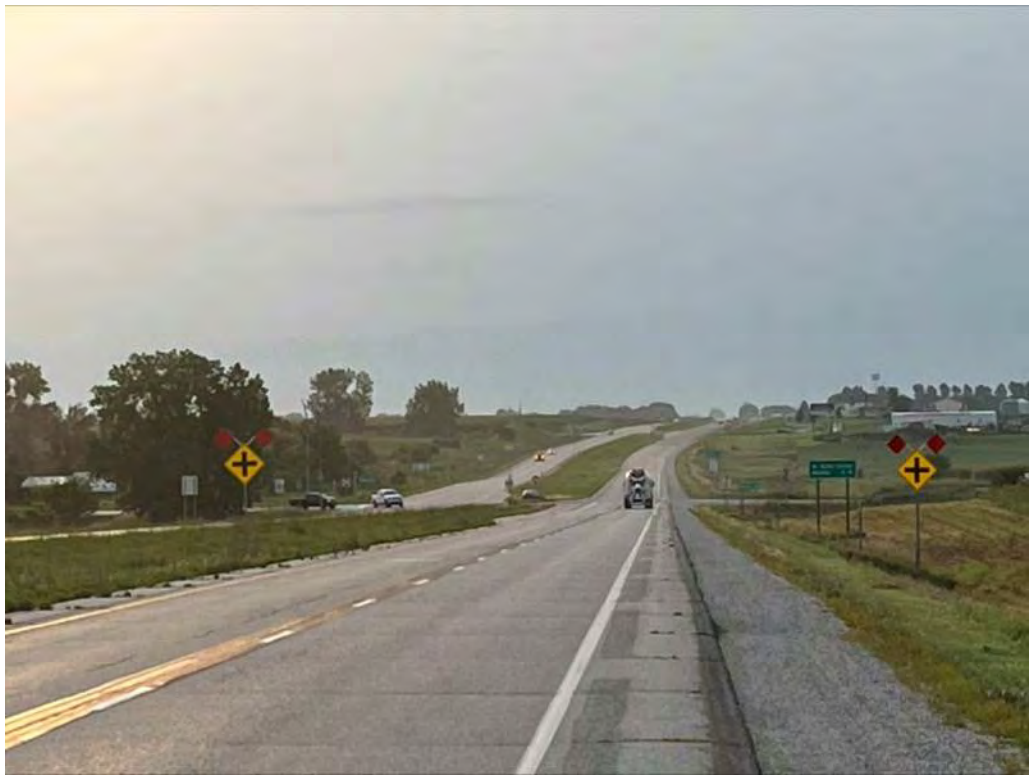
Project Quantities

RCI Preliminary Cost					
Item Number	**Item Description**	**Units**	**Quantity**	**Cost Used**	**Line Total**
					$ 1,652,155.00
2102-0425070	SPECIAL BACKFILL	TONS	1,600.00	$45.00	$ 72,000.00
2102-2625000	Embankment in Place	CY	1,000.00	$36.00	$ 36,000.00
2115-0100000	Modified Subbase	CY	2,500.00	$20.00	$ 50,000.00
2121-7425010	GRANULAR SHLD, TYPE A	TONS	1,500.00	$20.00	$ 30,000.00
2105-8425015	Topsoil, Strip, Salvage, and Spread	SY	1,800.00	$130.00	$ 234,000.00
2125-2225050	Reshaping Ditches	STA	5.00	$105.00	$ 525.00
2301-1034100	STD/S-F PCC PAV'T, CL C CL 3I, 10"	SY	11,000.00	$70.00	$ 770,000.00
2502-8212034	SUBDRAIN, LONGITUDINAL, (SHLD) 4"	LF	1,000.00	$10.00	$ 10,000.00
2502-8221303	SUBDRAIN, OUTLET, DR-303	EA	4.00	$180.00	$ 720.00
2510-6745850	Removal of Pavement	SY	2,700.00	$30.00	$ 81,000.00
2512-1725206	Curb and Gutter, PC Concrete 2"	LF	250.00	$59.00	$ 14,750.00
2523-0000100	Lighting Poles	Each	6.00	$7,000.00	$ 42,000.00
2523-0000200	Electrical Circuits	LF	2,500.00	$30.00	$ 75,000.00
2523-0000310	Handholes and Junction Boxes	Each	10.00	$1,750.00	$ 17,500.00
2523-0000400	Control Cabinet	Each	1.00	$15,000.00	$ 15,000.00
2524-6765210	Removal of Type A Sign Assembly	Each	10.00	$200.00	$ 2,000.00
2524-9081290	Concrete Footing for Breakaway Sign Post	Each	14.00	$2,000.00	$ 28,000.00
2524-9276010	PSST	LF	1,150.00	$25.00	$ 28,750.00
2524-9276027	PSST Slip Base Assembly	Each	64.00	$600.00	$ 38,400.00
2524-9290009	Sign Mounting Brackets, Special	Each	19.00	$270.00	$ 5,130.00
2524-9325001	Type A Signs, Sheet Aluminum	SF	770.00	$40.00	$ 30,800.00
2524-9380001	Type B Signs, Extruded Aluminum Structure Panel	SF	957.00	$40.00	$ 38,280.00
2527-9270111	Grooves Cut for Pavement Markings	STA	170.00	$90.00	$ 15,300.00
2527-9263109	Painted Pavement Markings, Waterborne	STA	170.00	$100.00	$ 17,000.00
2528-8445110	TRAFFIC CONTORL	% of Proje	$ 1,652,155.00	$0.05	$ 82,607.75
2533-4980005	MOBILIZATION	% of Proje	$ 1,652,155.00	$0.05	$ 82,607.75
PCT-999	UNQUANTIFIED	% of Proje	$ 1,652,155.00	10%	$ 165,215.50
					$ 1,982,586.00

U.S. 30 & Durham Ave. in State Center

Looking Westbound Along U.S. 30 towards Durham Avenue

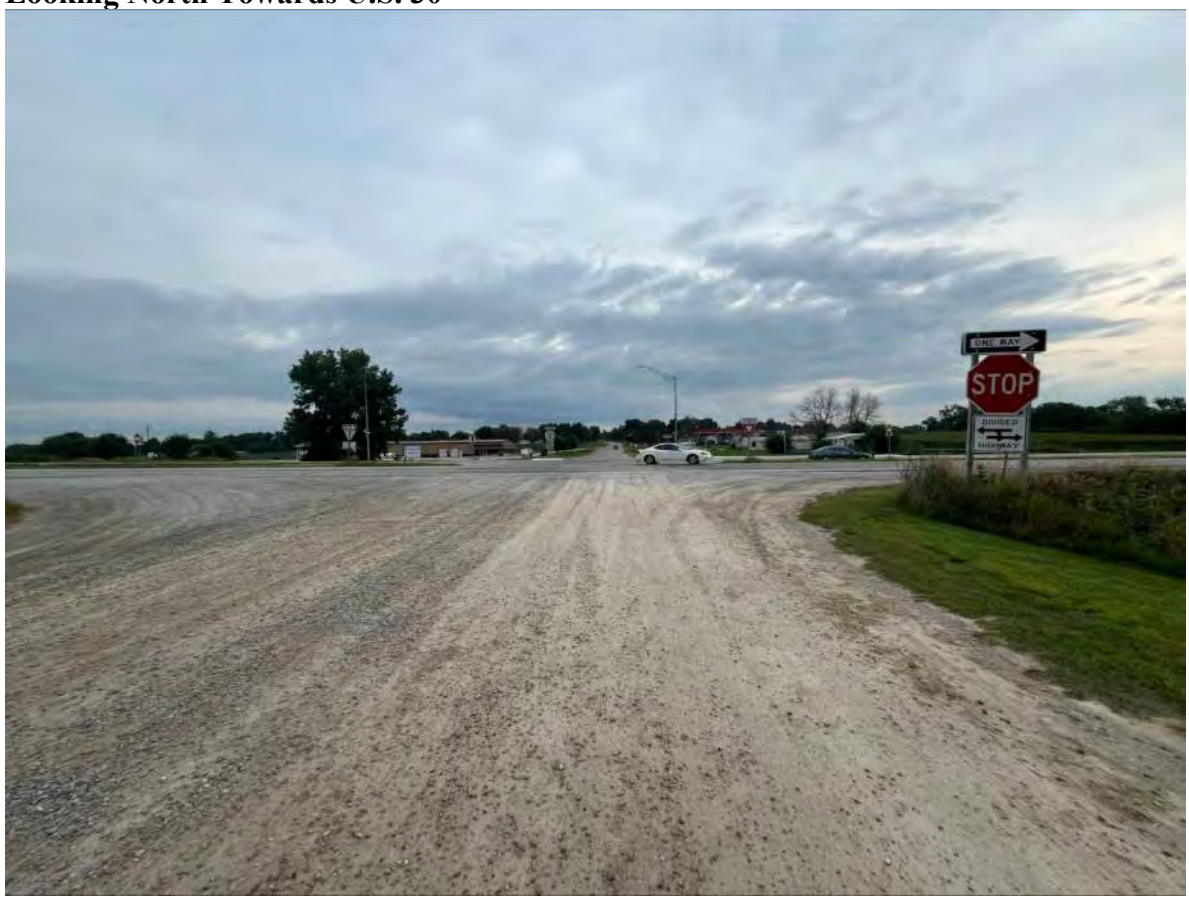
Looking Eastbound along U.S. 30 Towards Durham Ave.



U.S. 30 & Durham Ave. in State Center

Looking South towards U.S. 30

U.S. 30 & Durham Ave. in State Center
Looking North Towards U.S. 30



County:	Marshall	Prepared By:	Gary Kretlow
Location:	U.S. 30 State Center	Date Prepared:	7/26/2024
Proposed Improvements:	Construct a RCI at U.S. 30 and Durham Ave. at State Center		
Estimated Improvement Cost:	$ 1,000,000		
Inflation on Crash Costs:	4%	Annual Maintenance: (% of Improvement Cost)	2%
Discount Rate:	4%		
Estimated Service Life:	20	Annual Maintenance Cost:	$ 20,000

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Number of CRFs:	1
Years of Crash History:	5

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Iowa DOT's preferred methodology for combining CRFs is Dominant Common Residuals, since it is more conservative than the other options.

	CRF 1:	Combined CRF
CRF Value (%)	30	**30.0**

Crash Severity	Rounded Societal Costs	Crash History (Total):	CRF (from above)	Crash History - Annual Avg	Crashes Saved Annually
Fatal (K)	$ 4,200,000	1	30.0	**0.20**	**0.06**
Serious Injury (A)	$ 4,200,000	2	30.0	**0.40**	**0.12**
Minor Injury (B)	$ 280,000	2	30.0	**0.40**	**0.12**
Possible/Unknown Injury (C)	$ 130,000	2	30.0	**0.40**	**0.12**
Property Damage Only (O)	$ 20,000	8	30.0	**1.60**	**0.48**

Crash Severity	Annual Societal Benefit
Fatal (K)	**$ 252,000**
Serious Injury (A)	**$ 504,000**
Minor Injury (B)	**$ 33,600**
Possible/Unknown Injury (C)	**$ 15,600**
Property Damage Only (O)	**$ 9,600**

Total Benefits and Costs

		Implementation Cost	$ 1,000,000
		Present Value of Maint.	$ 271,807
Present Value Benefits (Societal Benefits)	$ 12,035,172	Present Value Costs (Impl. and Maint. Costs)	$ 1,271,807
Present Value Net Return	$ 10,763,365		
Benefit Cost Ratio	**9.46**		

Form continues on next page

FILE NO.	ENGLISH	DESIGN TEAM Smyth/Adey/Ringgenberg	MARSHALL COUNTY	PROJECT NUMBER NHSX-030-5(281)--3H-64	SHEET NUMBER E.1

1:59:56 PM 7/22/2024 rringge pw:\\NTPwint1.dot.int.lan:PWMain\Documents\Projects\6403001020\DistrictDesign\CADDFiles\PLN_640305XXX.dgn

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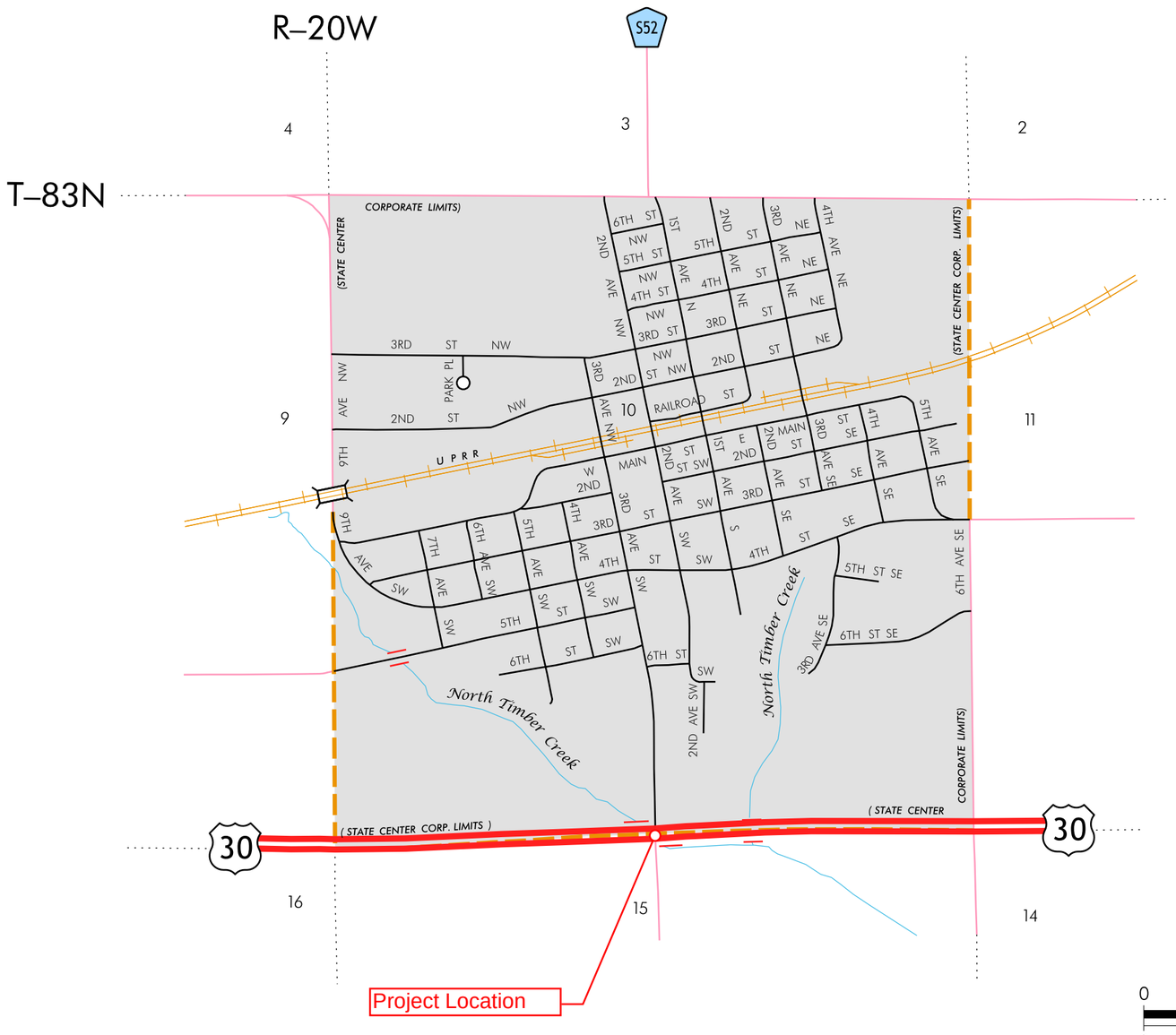
State Center
U.S. 30 & Durham Ave.
Legend
172
6th Street SW
5th Ave SW
7th St SW
30
172
Project Location
Durham Ave
Google Earth
Image © 2024 Airbus
N
1000 ft



LEGEND

INTERSTATE ROUTE	35
FREEWAY OR EXPRESSWAY ROUTE	30
U.S. NUMBERED ROUTE	6
BUSINESS ROUTE	61
STATE NUMBERED ROUTE	44
UNSIGNED ROUTE	461
COUNTY NUMBERED ROUTE	R38
SECONDARY ROAD OR ADJOINING CITY STREET	
CITY STREET	
PARK, INSTITUTION, OR FEDERAL ROAD	
RAILROAD	
CORPORATION LINE	
SECTION LINE	
CUL-DE-SAC	
SECTION, TOWNSHIP & RANGE NUMBERS	9, T-81N, R-30W

SCALE IN MILES

0 0.1 0.2 0.3 0.4 0.5 0.75 1.0

0 0.1 0.2 0.3 0.4 0.5 1.0 1.5 2.0

SCALE IN KILOMETERS

HIGHWAY AND STREET MAP OF

STATE CENTER IOWA

PREPARED BY

IOWA DEPARTMENT OF TRANSPORTATION
PLANNING, PROGRAMMING, AND MODAL DIVISION
OFFICE OF SYSTEMS PLANNING
PHONE (515) 239-1664

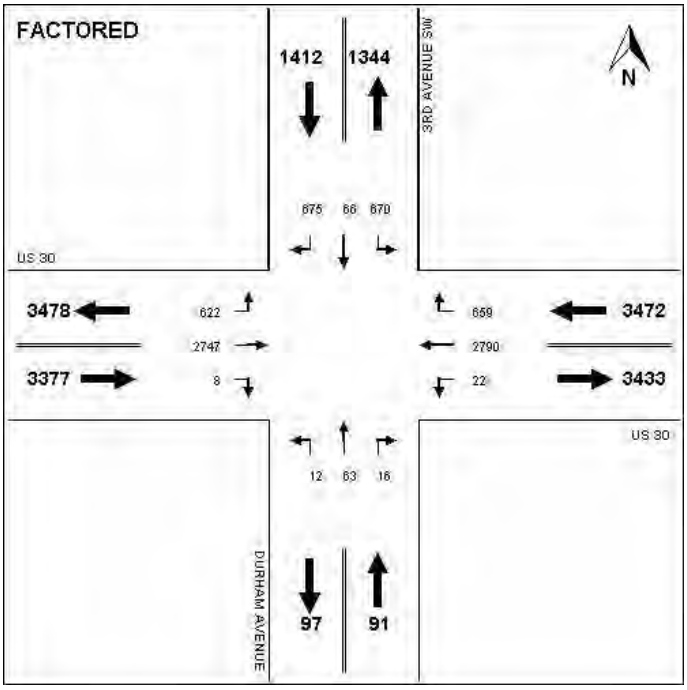
IN COOPERATION WITH

UNITED STATES DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION

64–7272

Iowa Department of Transportation
Turning Movement Traffic Count Summary
Vehicle Type: All Vehicles

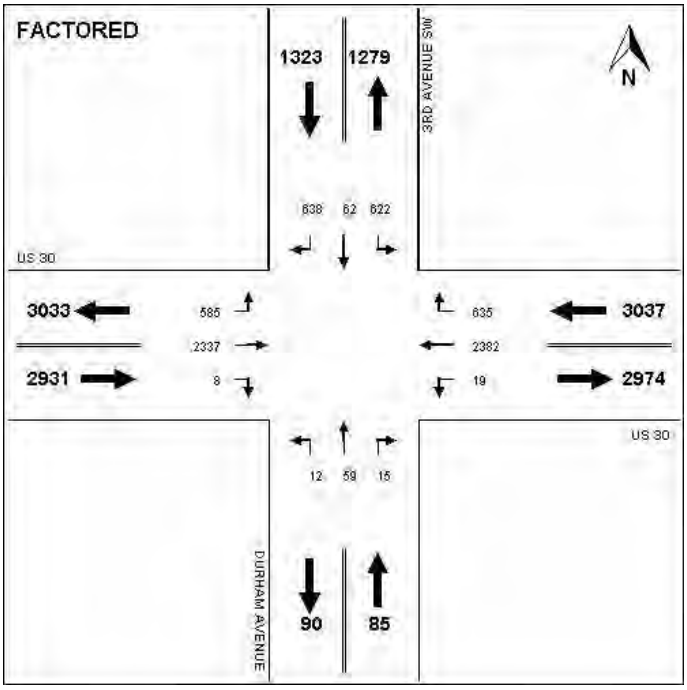
Station Number:	64216556099
Count Date:	Wednesday, May 19, 2021
County:	Marshall
Location Description:	US 30, 3RD AVE SW & DURHAM AVE
Volume Factor:	0.887
Pass Class Factor:	0.917
SU Class Factor:	0.75
Combo Class Factor:	0.755



Raw Data All Vehicles		North			East			South			West		
		L	T	R	L	T	R	L	T	R	L	T	R
2021-05-19	00:00	3	1	1	0	19	3	0	0	0	0	22	0
	01:00	6	0	1	0	5	3	0	1	0	3	11	0
	02:00	3	0	5	0	4	1	0	0	0	1	24	0
	03:00	4	1	2	0	30	1	0	0	0	2	6	0
	04:00	10	1	12	0	40	4	0	1	0	5	19	0
	05:00	21	1	34	0	104	26	1	1	0	9	43	0
	06:00	37	2	75	1	190	28	0	3	0	26	142	0
	07:00	63	7	67	4	216	122	0	9	0	62	250	1
	08:00	59	8	50	1	198	40	0	5	0	31	170	1
	09:00	28	0	42	1	227	29	2	2	2	21	164	0
	10:00	61	3	40	0	175	23	1	3	2	33	151	1
	11:00	42	2	41	2	170	30	0	5	1	34	184	0
	12:00	29	2	45	3	184	27	1	4	1	43	188	1
	13:00	32	3	32	2	178	32	2	4	3	33	186	0
	14:00	35	5	42	2	219	40	1	6	0	47	204	0
	15:00	89	7	53	2	218	57	3	3	2	51	235	0
	16:00	55	7	58	1	285	66	1	5	1	81	284	3
	17:00	64	8	56	1	216	63	1	10	2	74	258	0
	18:00	26	5	32	1	159	29	0	2	2	32	162	0
	19:00	32	5	15	1	98	39	0	2	0	33	137	0
	20:00	25	3	24	2	94	30	0	1	1	26	99	1
	21:00	10	2	11	0	58	17	0	2	1	31	71	1
	22:00	7	0	5	1	33	11	0	1	0	5	50	0
	23:00	1	0	2	0	18	3	0	0	0	4	31	0
	Total	742	73	745	25	3138	724	13	70	18	687	3091	9

Iowa Department of Transportation
Turning Movement Traffic Count Summary
Vehicle Type: Passenger

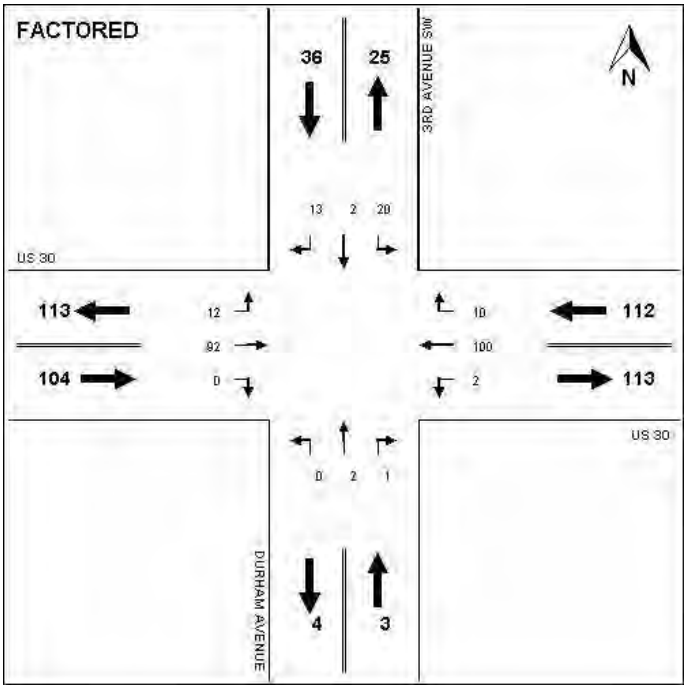
Station Number:	64216556099
Count Date:	Wednesday, May 19, 2021
County:	Marshall
Location Description:	US 30, 3RD AVE SW & DURHAM AVE
Volume Factor:	0.887
Pass Class Factor:	0.917
SU Class Factor:	0.75
Combo Class Factor:	0.755



Raw Data Passenger		North			East			South			West		
		L	T	R	L	T	R	L	T	R	L	T	R
2021-05-19	00:00	3	1	1	0	14	3	0	0	0	0	14	0
	01:00	6	0	1	0	3	3	0	1	0	2	7	0
	02:00	3	0	4	0	2	1	0	0	0	1	16	0
	03:00	3	1	2	0	28	1	0	0	0	2	3	0
	04:00	10	1	10	0	35	4	0	1	0	4	18	0
	05:00	19	1	31	0	94	25	1	1	0	9	27	0
	06:00	35	2	73	1	169	28	0	3	0	23	126	0
	07:00	55	6	64	2	184	121	0	8	0	59	224	1
	08:00	55	8	49	0	144	38	0	4	0	30	123	1
	09:00	25	0	35	1	171	26	2	2	1	17	126	0
	10:00	53	2	36	0	141	19	1	2	2	30	105	1
	11:00	35	2	38	2	116	26	0	5	1	28	145	0
	12:00	24	2	39	3	142	23	1	4	1	35	142	1
	13:00	25	3	30	2	127	27	2	4	3	29	129	0
	14:00	31	4	39	2	179	40	1	6	0	42	170	0
	15:00	81	6	49	2	187	54	3	3	1	49	204	0
	16:00	55	7	56	1	258	65	1	3	1	77	249	3
	17:00	61	7	55	0	204	62	1	9	2	72	233	0
	18:00	25	5	31	1	135	28	0	2	2	31	137	0
	19:00	32	5	14	1	87	38	0	2	0	33	127	0
	20:00	25	3	23	2	80	29	0	1	1	26	92	1
	21:00	9	2	10	0	55	17	0	2	1	30	69	1
	22:00	7	0	4	1	26	11	0	1	0	5	40	0
	23:00	1	0	2	0	16	3	0	0	0	4	22	0
	Total	678	68	696	21	2597	692	13	64	16	638	2548	9

Iowa Department of Transportation
Turning Movement Traffic Count Summary
Vehicle Type: Single-Unit

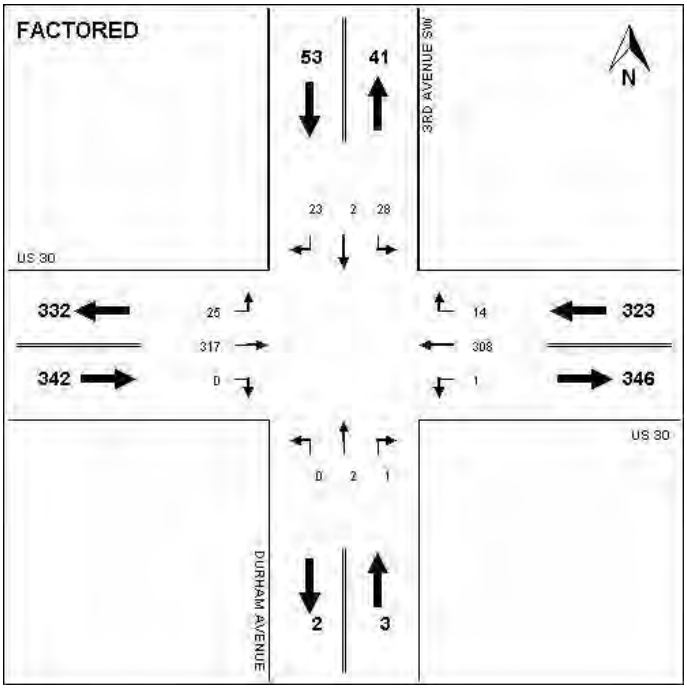
Station Number:	64216556099
Count Date:	Wednesday, May 19, 2021
County:	Marshall
Location Description:	US 30, 3RD AVE SW & DURHAM AVE
Volume Factor:	0.887
Pass Class Factor:	0.917
SU Class Factor:	0.75
Combo Class Factor:	0.755



Raw Data Single-Unit		North			East			South			West		
		L	T	R	L	T	R	L	T	R	L	T	R
2021-05-19	00:00	0	0	0	0	0	0	0	0	0	0	2	0
	01:00	0	0	0	0	0	0	0	0	0	0	0	0
	02:00	0	0	0	0	1	0	0	0	0	0	0	0
	03:00	0	0	0	0	0	0	0	0	0	0	1	0
	04:00	0	0	1	0	1	0	0	0	0	0	0	0
	05:00	0	0	1	0	4	1	0	0	0	0	4	0
	06:00	1	0	2	0	6	0	0	0	0	1	6	0
	07:00	4	1	1	1	7	1	0	1	0	0	6	0
	08:00	2	0	0	1	14	1	0	1	0	0	8	0
	09:00	1	0	2	0	11	2	0	0	1	1	10	0
	10:00	1	0	0	0	8	1	0	1	0	1	13	0
	11:00	2	0	2	0	13	0	0	0	0	1	8	0
	12:00	2	0	1	0	11	1	0	0	0	5	11	0
	13:00	5	0	2	0	15	0	0	0	0	2	12	0
	14:00	1	1	2	0	14	0	0	0	0	1	5	0
	15:00	6	1	2	0	9	2	0	0	0	1	10	0
	16:00	0	0	0	0	4	1	0	0	0	2	11	0
	17:00	1	0	1	1	7	1	0	0	0	1	3	0
	18:00	1	0	0	0	3	1	0	0	0	0	8	0
	19:00	0	0	0	0	0	1	0	0	0	0	2	0
	20:00	0	0	1	0	3	1	0	0	0	0	2	0
	21:00	0	0	0	0	0	0	0	0	0	0	1	0
	22:00	0	0	0	0	2	0	0	0	0	0	0	0
	23:00	0	0	0	0	0	0	0	0	0	0	0	0
	Total	27	3	18	3	133	14	0	3	1	16	123	0

Iowa Department of Transportation
Turning Movement Traffic Count Summary
Vehicle Type: Combo-Unit

Station Number:	64216556099
Count Date:	Wednesday, May 19, 2021
County:	Marshall
Location Description:	US 30, 3RD AVE SW & DURHAM AVE
Volume Factor:	0.887
Pass Class Factor:	0.917
SU Class Factor:	0.75
Combo Class Factor:	0.755



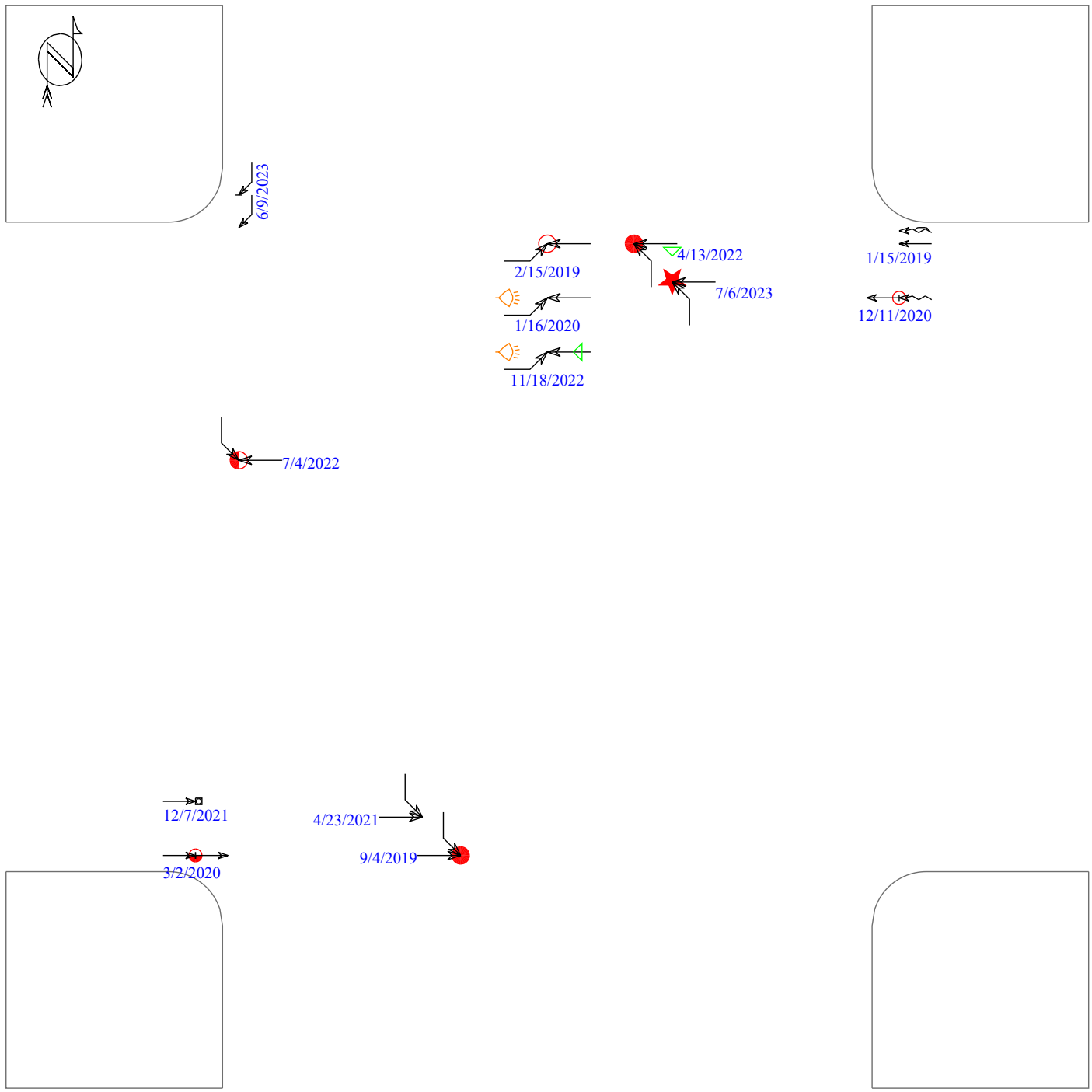
Raw Data		North			East			South			West		
Combo-Unit		L	T	R	L	T	R	L	T	R	L	T	R
2021-05-19	00:00	0	0	0	0	5	0	0	0	0	0	6	0
	01:00	0	0	0	0	2	0	0	0	0	1	4	0
	02:00	0	0	1	0	1	0	0	0	0	0	8	0
	03:00	1	0	0	0	2	0	0	0	0	0	2	0
	04:00	0	0	1	0	4	0	0	0	0	1	1	0
	05:00	2	0	2	0	6	0	0	0	0	0	12	0
	06:00	1	0	0	0	15	0	0	0	0	2	10	0
	07:00	4	0	2	1	25	0	0	0	0	3	20	0
	08:00	2	0	1	0	40	1	0	0	0	1	39	0
	09:00	2	0	5	0	45	1	0	0	0	3	28	0
	10:00	7	1	4	0	26	3	0	0	0	2	33	0
	11:00	5	0	1	0	41	4	0	0	0	5	31	0
	12:00	3	0	5	0	31	3	0	0	0	3	35	0
	13:00	2	0	0	0	36	5	0	0	0	2	45	0
	14:00	3	0	1	0	26	0	0	0	0	4	29	0
	15:00	2	0	2	0	22	1	0	0	1	1	21	0
	16:00	0	0	2	0	23	0	0	2	0	2	24	0
	17:00	2	1	0	0	5	0	0	1	0	1	22	0
	18:00	0	0	1	0	21	0	0	0	0	1	17	0
	19:00	0	0	1	0	11	0	0	0	0	0	8	0
	20:00	0	0	0	0	11	0	0	0	0	0	5	0
	21:00	1	0	1	0	3	0	0	0	0	1	1	0
	22:00	0	0	1	0	5	0	0	0	0	0	10	0
	23:00	0	0	0	0	2	0	0	0	0	0	9	0
	Total	37	2	31	1	408	18	0	3	1	33	420	0

Collision Diagram

14 Crashes

Clear

2019-2023



(1) crashes could not be placed in this schematic

Straight
Stopped
Unknown
Backing
Overtaking
Sideswipe

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

Fatal
Major
Minor
Injury
Pedestrian
Bicycle

Fixed objects:
General
Signal
Tree
Pole
Curb
Animal

DUI
3rd vehicle
Nighttime

Crash Magic Online 7/26/2024

Iowa Crash Analysis Tool
Quick Report
2019-2023

Crash Severity	15
Fatal Crash	1
Suspected Serious Injury Crash	2
Suspected Minor Injury Crash	2
Possible/Unknown Injury Crash	2
Property Damage Only	8

Injury Status Summary	17
Fatalities	1
Suspected serious/incapacitating	2
Suspected minor/non-incapacitating	6
Possible (complaint of pain/injury)	7
Uninjured	0
Unknown	0
Not Reported	1

Property/Vehicles/Occupants	
Property Damage Total (dollars):	222,900.00
Average (per crash dollars):	14,860.00
Total Vehicles:	30.00
Average (per crash):	2.00
Total Occupants:	48.00
Average (per crash):	3.20

Average Severity	
Fatalities/Fatal Crash:	1.00
Fatalities/Crash:	0.07
Injuries/Crash:	1.00
Major Injuries/Crash:	0.13
Minor Injuries/Crash:	0.40
Possible/Unknown Injuries/Crash:	0.47

Major Cause			15
Animal	1	Ran traffic signal	0
Ran stop sign	0	Failed to yield to emergency vehicle	0
FTYROW: At uncontrolled intersection	0	FTYROW: Making right turn on red signal	0
FTYROW: From stop sign	3	FTYROW: From yield sign	4
FTYROW: Making left turn	2	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	0
Exceeded authorized speed	0	Improper or erratic lane changing	0
Operating vehicle in an reckless/erratic/care...	0	Followed too close	1
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	1
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...	3	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		

Iowa Crash Analysis Tool
Quick Report
2019-2023

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	0	0	0	0	0	2	0	0	0	0	2
Tuesday	0	0	0	0	1	0	0	1	0	0	0	0	0	2
Wednesday	0	0	0	0	0	0	0	2	0	1	0	0	0	3
Thursday	0	0	0	0	1	0	0	0	1	0	0	0	0	2
Friday	0	0	0	1	2	0	0	0	0	1	0	1	0	5
Saturday	0	0	0	0	0	0	0	0	0	0	0	1	0	1
Total	0	0	0	1	4	0	0	3	3	2	0	2	0	15

Manner of Crash Collision	**15**
Non-collision (single vehicle)	1
Head-on (front to front)	0
Rear-end (front to rear)	3
Angle (oncoming left turn)	3
Broadside (front to side)	5
Sideswipe (same direction)	1
Sideswipe (opposite direction)	0
Rear to rear	0
Rear to side	0
Not reported	1
Other	1
Unknown	0

Surface Conditions	**15**
Dry	12
Wet	2
Ice/frost	0
Snow	0
Slush	0
Mud/dirt	0
Water (standing or moving)	0
Sand	0
Oil	0
Gravel	0
Not reported	1
Other	0
Unknown	0

Fixed Object Struck			**30**
Bridge overhead structure	0	Bridge pier or support	0
Bridge/bridge rail parapet	0	Curb/island/raised median	0
Ditch	0	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	3
Traffic signal support	0	Other post/pole/support	1
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)	26

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	1	0	0	1
= 17	1	0	0	0	1
= 18	0	1	0	0	1
= 19	0	0	0	0	0
= 20	0	0	0	0	0
>= 21 and <= 24	3	1	0	0	4
>= 25 and <= 29	0	2	0	0	2
>= 30 and <= 34	0	1	0	0	1
>= 35 and <= 39	2	0	0	0	2
>= 40 and <= 44	3	1	0	0	4
>= 45 and <= 49	1	1	0	0	2
>= 50 and <= 54	0	1	0	0	1
>= 55 and <= 59	1	1	0	0	2
>= 60 and <= 64	2	1	0	0	3
>= 65 and <= 69	1	0	0	0	1
>= 70 and <= 74	1	1	0	0	2
>= 75 and <= 79	1	1	0	0	2
>= 80 and <= 84	0	1	0	0	1
>= 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	0	0	0
Total	16	14	0	0	30

Drug/Alcohol Related	15
Drug	0
Alcohol (< Statutory)	0
Alcohol (Statutory)	1
Drug and Alcohol (< Statutory)	0
Drug and Alcohol (Statutory)	0
Refused	0
Under Influence of Alcohol/Drugs/Medications	0
None Indicated	14

Alcohol Test Given	30
None	28
Blood	1
Urine	0
Breath	1
Vitreous	0
Refused	0
Not reported	0

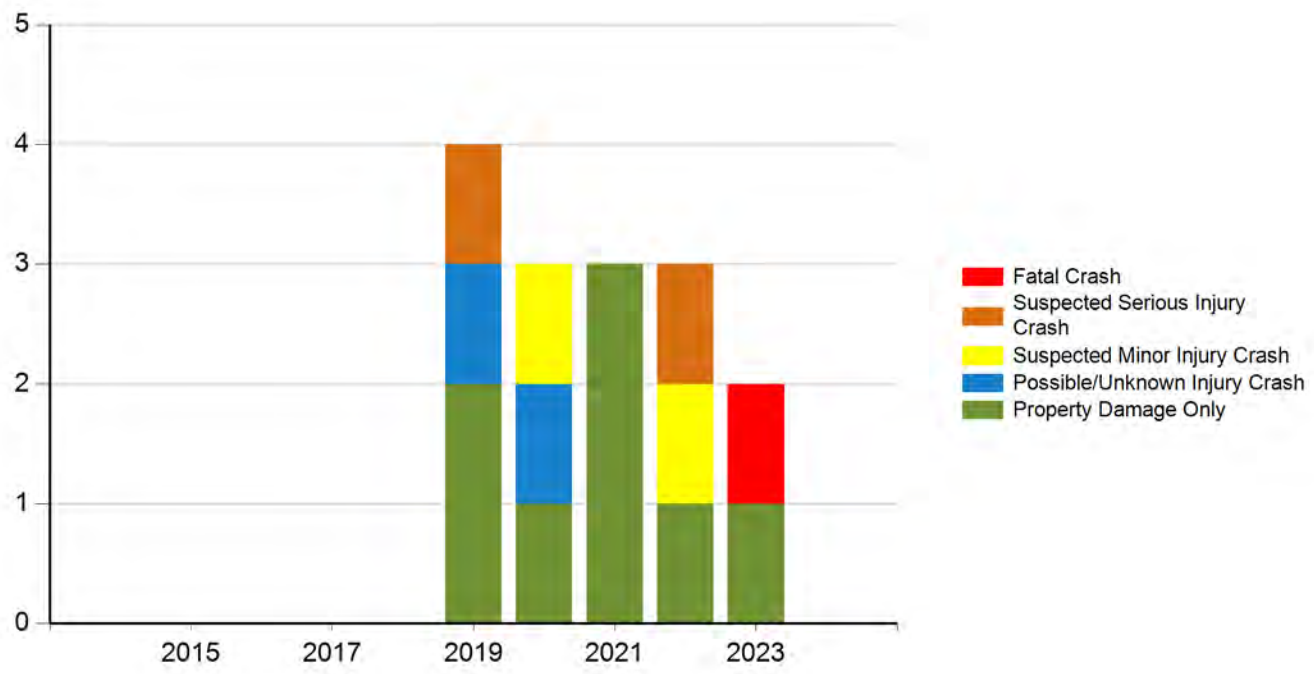
Drug Test Given	30
None	29
Blood	1
Urine	0
Breath	0
Vitreous	0
Refused	0
Not reported	0

Drug Test Result	30
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	30
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**
2014	0	0	0	0	0	0
2015	0	0	0	0	0	0
2016	0	0	0	0	0	0
2017	0	0	0	0	0	0
2018	0	0	0	0	0	0
2019	0	1	0	1	2	4
2020	0	0	1	1	1	3
2021	0	0	0	0	3	3
2022	0	1	1	0	1	3
2023	1	0	0	0	1	2
2024	0	0	0	0	0	0
Total	1	2	2	2	8	15

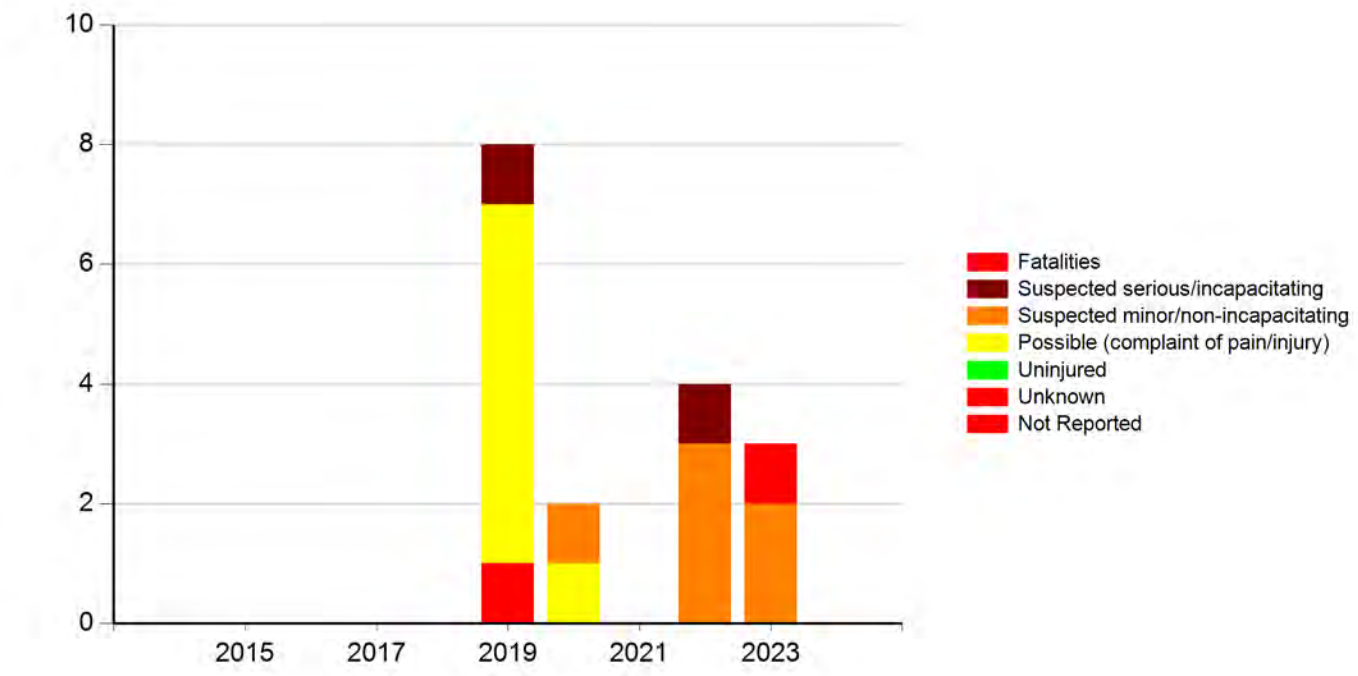
Severity/Year



Injury Status - Annual

Crash Year	Fatalities	Suspected serious/incapacitating	Suspected minor/non-incapacitating	Possible (complaint of pain/injury)	Uninjured	Unknown	Not Reported	**Total**
2014	0	0	0	0	0	0	0	0
2015	0	0	0	0	0	0	0	0
2016	0	0	0	0	0	0	0	0
2017	0	0	0	0	0	0	0	0
2018	0	0	0	0	0	0	0	0
2019	0	1	0	6	0	0	1	8
2020	0	0	1	1	0	0	0	2
2021	0	0	0	0	0	0	0	0
2022	0	1	3	0	0	0	0	4
2023	1	0	2	0	0	0	0	3
2024	0	0	0	0	0	0	0	0
Total	1	2	6	7	0	0	1	17

Injury Status/Year



Meeting the following criteria

Jurisdiction: Counties (Marshall)
Year: 2019, 2020, 2021, 2022, 2023
Map Selection: Yes
Filter: None

Analyst Information

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Paul C

OFFICE OF THE SHERIFF
MARSHALL COUNTY

JOEL R. PHILLIPS, SHERIFF

BEN W. VEREN, CHIEF DEPUTY • PATRICK W. WHITE, Chief Jailer

2369 JESSUP AVENUE, MARSHALLTOWN, IOWA 50158

TELEPHONE: 641-754-6380-FAX: 641-754-6369-EMAIL: sheriff@co.marshall.ia.us

A "CALEA" Accredited Agency

August 12, 2024

To: Iowa Department of Transportation

RE: Letter of Support

The Marshall County Sheriff's Office has been involved with the community meetings regarding the increased number of motor vehicle crashes at the intersection of the US Highway 30 and Durham Ave (3rd St SW) in State Center.

The Sheriff's Office has responded to numerous motor vehicle crashes at this location over the past several years, many of which involve serious injuries or fatalities. Alarmingly, these crashes seem to be increasing in frequency despite law enforcement efforts on education and enforcement in the area. From review of crash data, it appears the most common cause of crashes is some form of failure to yield, whether it be vehicles crossing the highway or making left turns across one half of the highway.

The recent public meetings with community members, first responders, DOT personnel, and other stakeholders have brought about healthy discussions and several different possible solutions that would improve safety at this problem intersection. From the possibilities presented in these meetings, I firmly believe that the installation of a reduced conflict intersection is the best option for reducing, if not nearly eliminating, crashes at this intersection.

I have personally been involved in these meetings as a representative of the Sheriff's Office and pledge my professional support of this project, however my support of this is also personal as a lifelong resident of this community and a parent of young drivers who will utilize this intersection on a regular basis. The proposed reduced conflict intersection would be the best available option and will undoubtedly save lives.

The Marshall County Sheriff's Office appreciates the work of the Iowa DOT to keep our roadways safe.

Sincerely,

Ben W. Veren

Ben W. Veren, Chief Deputy
Marshall County Sheriff's Office

State Center Police Department

Chief Jon Thomas
108 4th Street Southeast
State Center, IA 50247
(641) 483-2107 Office
(641) 754-5725 Dispatch

August 2, 2024

To: Iowa Department of Transportation – Project Selection Request

From: Chief Jon Thomas

RE: Letter of Support

To Whom It May Concern:

The State Center Police Department has been working with our District office over the past several months to address concerns over the sustained increase in motor vehicle crashes at the intersection of Highway 30 and Durham Avenue, approximately the 172-mile marker.

As the Chief of Police for the past 5 years, the frequency and severity of the crashes at this intersection have increased substantially, despite our best efforts of education and enforcement.

Consistently, the root cause of the traffic crashes relates to vehicles traveling North and South attempting to either cross Highway 30 or enter the far side of East or West traffic from the position the vehicle was stopped from.

After evaluating several solutions, the Department of Transportation has provided an option which would redesign the intersection, eliminating the ability for vehicles to cross directly by implementing a *reduced conflict intersection*

After seeking public input and all available options with respect for budgetary and geographic considerations, the creation of a *reduced conflict intersection* is supported by both the community and local law enforcement.

We appreciate the excellent communication and problem-solving approach the Iowa Department of Transportation has brought to this issue.

We look forward to continuing to work together to improve the safety features of Iowa's roadways and hope our letter of support will help to bring the necessary improvements to this intersection to prevent further loss of life and personal injuries accidents in our community.

Respectfully,

Chief Jon Thomas

State Center Police Department

Rev. 07/23

Application for SITE-SPECIFIC TSIP FUNDS

GENERAL INFORMATION **DATE:** July 16, 2024

Location / Title of Project Cedar Rd Pavement Rehab, City of Wadena to Hwy 56

Applicant Fayette County

Contact Person Luke Bowdish Title Assistant Engineer

Complete Mailing Address 114 N. Vine Street
West Union, IA

Phone (563) 422-3552 E-Mail lbowdish@co.fayette.ia.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	$	$1,057,578.60
Total Project Cost	$	$4,323,090.03
Safety Funds Requested	**$**	**$500,000**

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(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 Fayette County Board of Supervisors

Signed: Bruce T. Lehman 7-15-24

Signature Date Signed

BRUCE T. LEHMANN

Printed Name

Attest: 7/15/24

Signature Date Signed

Lori Mottern

Printed Name

Narrative:

Fayette County is applying for Traffic Safety Improvement Program funding to improve the safety of Cedar Road (W51) from the intersection of Kornhill Road and the intersection of Highway 56.

Cedar Road has an existing 22' wide HMA pavement with granular shoulders approximately 3'-5' wide throughout and is in the advanced stages of deterioration making it difficult to maintain. White edge line cannot be maintained on the existing pavement due to the deterioration of the pavement edges. The topography is rolling. The large hills and frequent "gully washers" make repairing edge of pavement drop-offs a continuous task. The narrow shoulders and 3:1 or steeper foreslopes leave little to no room for recovery for vehicles that leave the travelled roadway. The road is posted 55 mph and has a traffic count of 840 vpd. The proposed safety improvements will be constructed in conjuction with an HMA overlay project on Cedar Road.

We are seeking safety funds to add 2' HMA paved shoulders, shoulder rumble strips, safety edge and 6" painted pavement markings to Cedar Road. Work would be completed in conjunction with an HMA overlay project on Cedar Rd. The HMA shoulders, paint striping, and shoulder rumble strips are expected to substantially decrease the number of run-off-the-road crashes. The safety edge will help drivers recover more readily when they do run onto the shoulder.

Additional safety countermeasures including an additional 2' of paved shoulder (4' total) funded through SS4A will enhance the benefit beyond what is directly funded by TSIP.

This project has substantial benefit for the cost with a benefit/cost ratio of 4.19:1.

These improvements are recommended in the county's Local Road Safety Plan.

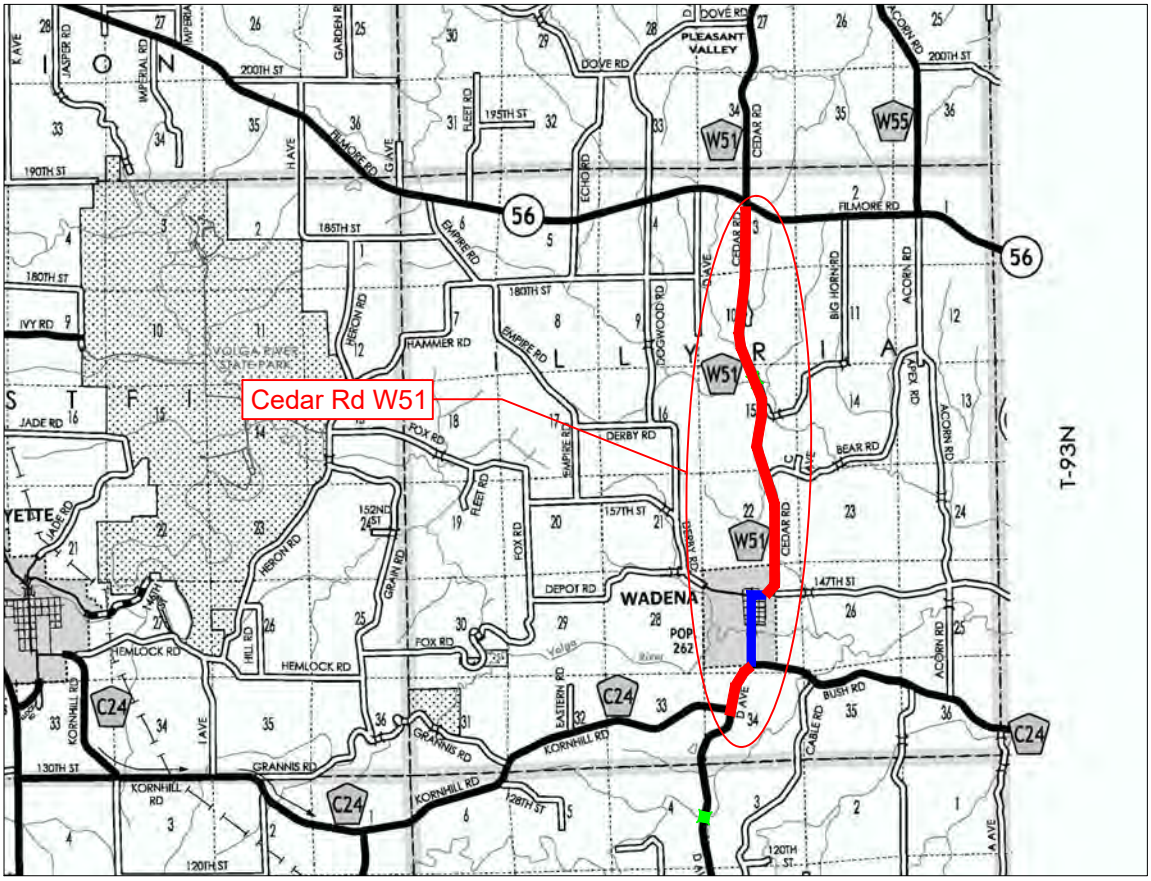
TSIP Cost Estimate - W51 Cedar Rd 2024					
Item Code	Item	Unit	Total Qty	Unit Price	Total Safety Cost
2213-2713300	Excavation, Class 13 For Widening	CY	3,144.90	$10.50	$33,021.46
2213-8200000	Base Widening, HMA Mixture	TON	3,517.80	$42.00	$147,747.46
2303-1032500	HMA Standard Traffic, Intermediate Course, 1/2 In Mix	TON	5,096.88	$45.00	$229,359.69
2303-1033500	HMA Standard Traffic, Surface Course, 1/2 In Mix	TON	2,907.12	$45.00	$130,820.45
2303-1258343	Asphalt Binder, PG 58-34S, Standard Traffic	TON	691.31	$700.00	$483,915.59
2527-9263112	Painted Pavement Marking, High Build Waterbourne	STA	427.88	$14.00	$5,990.32
2548-0000100	Milled Shoulder Rumble Strips, HMA Surface	STA	548.64	$20.00	$10,972.80
2548-0000110	Asphalt Emulsion for Fog Seal (Shoulder Rumble Strips)	STA	792.48	$8.00	$6,339.84
2548-0000310	Milled Centerline Rumble Strips, HMA Surface	STA	470.55	$20.00	$9,411.00
				Total:	$1,057,578.60

Time Shedule

Cedar Road Corridor Improvements

Submittal of Application:	**August, 2024**
TSIP Grant Approval:	**November, 2024**
Project Approval:	**January, 2025**
Project Letting Date:	**Fall/Winter 2025/2026**
Construction Completed:	**Fall 2026**
Project Closeout:	**Spring 2027**

E



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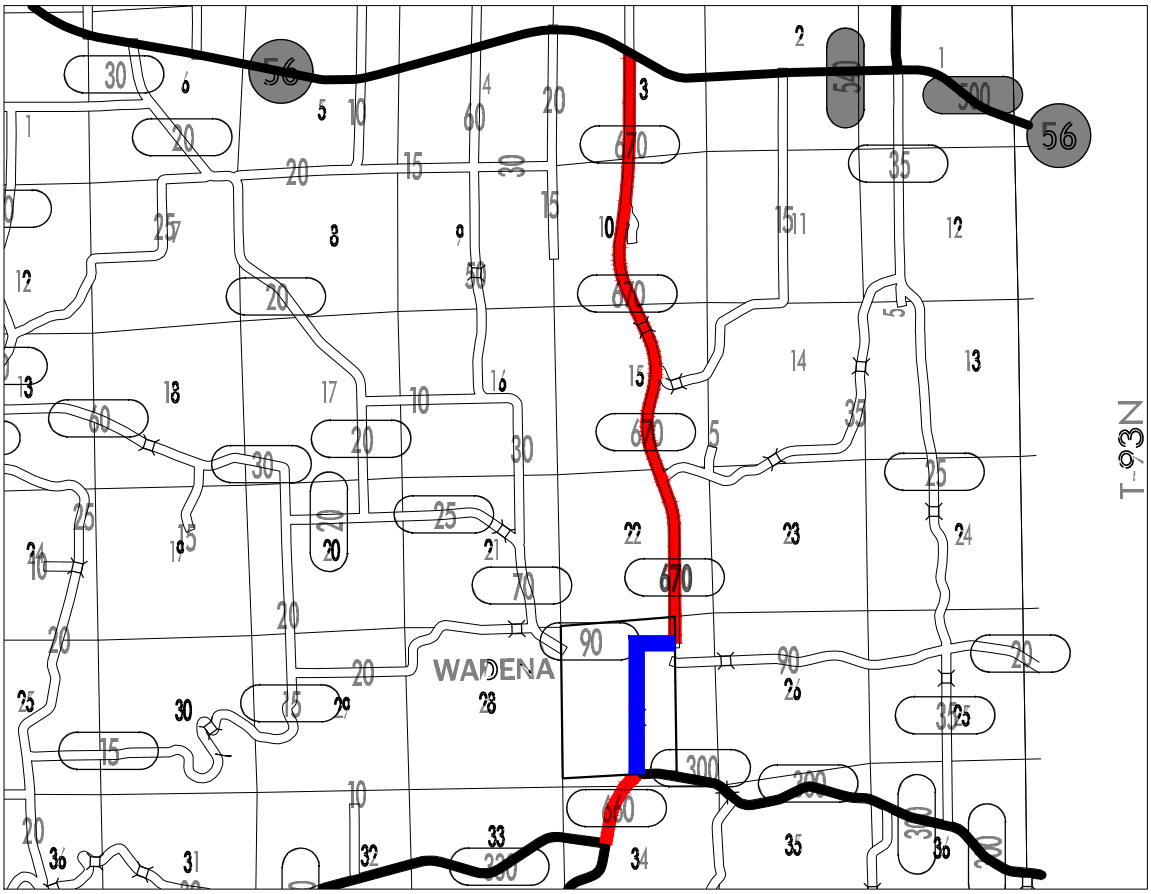


2013 Annual Average Daily Traffic

N

NOT TO SCALE

FAYETTE COUNTY	Proposed TSIP Paved Shoulder/Traffic Count Map

WADENA

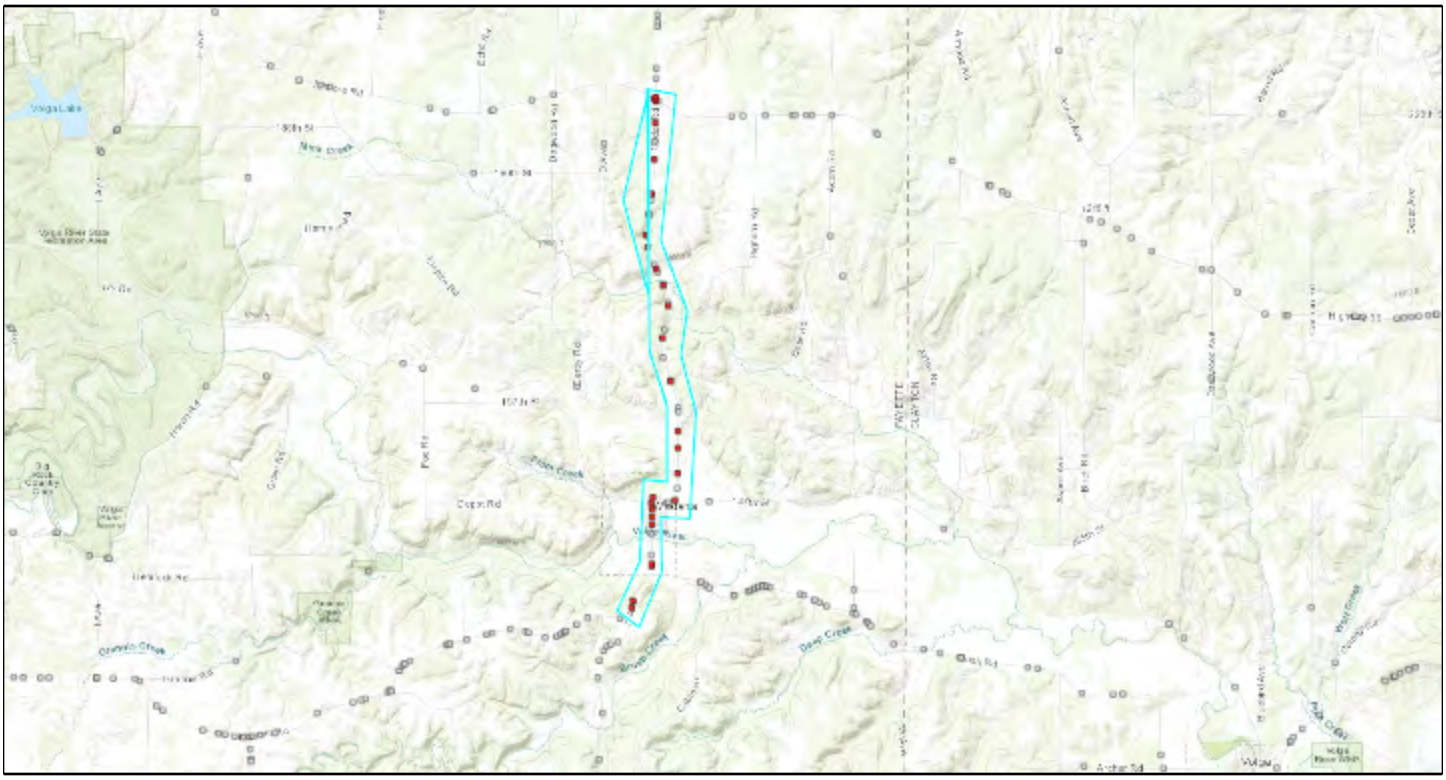
Iowa Crash Analysis Tool
Quick Report
2018-2024

Crash Severity	33
Fatal Crash	1
Suspected Serious Injury Crash	1
Suspected Minor Injury Crash	2
Possible/Unknown Injury Crash	3
Property Damage Only	26

Injury Status Summary	20
Fatalities	1
Suspected serious/incapacitating	1
Suspected minor/non-incapacitating	2
Possible (complaint of pain/injury)	4
Uninjured	0
Unknown	0
Not Reported	12

Property/Vehicles/Occupants	
Property Damage Total (dollars):	286,900.00
Average (per crash dollars):	8,693.94
Total Vehicles:	43.00
Average (per crash):	1.30
Total Occupants:	64.00
Average (per crash):	1.94

Average Severity	
Fatalities/Fatal Crash:	1.00
Fatalities/Crash:	0.03
Injuries/Crash:	0.21
Major Injuries/Crash:	0.03
Minor Injuries/Crash:	0.06
Possible/Unknown Injuries/Crash:	0.12



Major Cause			33
Animal	14	Ran traffic signal	0
Ran stop sign	1	Failed to yield to emergency vehicle	1
FTYROW: At uncontrolled intersection	0	FTYROW: Making right turn on red signal	0
FTYROW: From stop sign	5	FTYROW: From yield sign	0
FTYROW: Making left turn	1	FTYROW: From driveway	0
FTYROW: From parked position	0	FTYROW: To pedestrian	0
FTYROW: Other	1	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	0
Exceeded authorized speed	0	Improper or erratic lane changing	0
Operating vehicle in an reckless/erratic/care...	1	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...	1
Driver Distraction: Exterior distraction	0	Ran off road - right	6
Ran off road - straight	0	Ran off road - left	1
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	1
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	2	0	0	0	1	1	0	2	0	1	0	0	7
Monday	0	0	1	0	0	0	0	0	0	0	0	1	0	2
Tuesday	0	1	1	1	0	0	1	1	0	0	0	0	0	5
Wednesday	0	0	0	0	0	1	0	0	1	0	0	0	0	2
Thursday	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Friday	0	0	0	1	0	0	0	2	5	0	0	1	0	9
Saturday	1	0	2	0	2	0	1	0	1	0	1	0	0	8
Total	1	3	4	2	2	2	3	3	9	0	2	2	0	33

Manner of Crash Collision	**33**
Non-collision (single vehicle)	16
Head-on (front to front)	1
Rear-end (front to rear)	1
Angle (oncoming left turn)	0
Broadside (front to side)	6
Sideswipe (same direction)	2
Sideswipe (opposite direction)	0
Rear to rear	0
Rear to side	0
Not reported	7
Other	0
Unknown	0

Surface Conditions	**33**
Dry	19
Wet	2
Ice/frost	1
Snow	1
Slush	0
Mud/dirt	0
Water (standing or moving)	0
Sand	0
Oil	0
Gravel	0
Not reported	10
Other	0
Unknown	0

Fixed Object Struck			**43**
Bridge overhead structure	0	Bridge pier or support	0
Bridge/bridge rail parapet	2	Curb/island/raised median	0
Ditch	8	Embankment	2
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)	31

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	1	1	0	0	2
= 17	0	2	0	0	2
= 18	0	0	0	0	0
= 19	0	0	0	0	0
= 20	0	1	0	0	1
>= 21 and <= 24	1	4	0	0	5
>= 25 and <= 29	2	2	0	0	4
>= 30 and <= 34	1	2	0	0	3
>= 35 and <= 39	1	1	0	0	2
>= 40 and <= 44	2	3	0	0	5
>= 45 and <= 49	0	1	0	0	1
>= 50 and <= 54	0	1	0	0	1
>= 55 and <= 59	0	2	0	0	2
>= 60 and <= 64	1	2	0	0	3
>= 65 and <= 69	0	5	0	0	5
>= 70 and <= 74	2	2	0	0	4
>= 75 and <= 79	1	0	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	2	0	2
Total	12	29	2	0	43

Drug/Alcohol Related	33
Drug	1
Alcohol (< Statutory)	0
Alcohol (Statutory)	1
Drug and Alcohol (< Statutory)	0
Drug and Alcohol (Statutory)	0
Refused	1
Under Influence of Alcohol/Drugs/Medications	0
None Indicated	30

Alcohol Test Given	43
None	37
Blood	0
Urine	1
Breath	1
Vitreous	0
Refused	1
Not reported	3

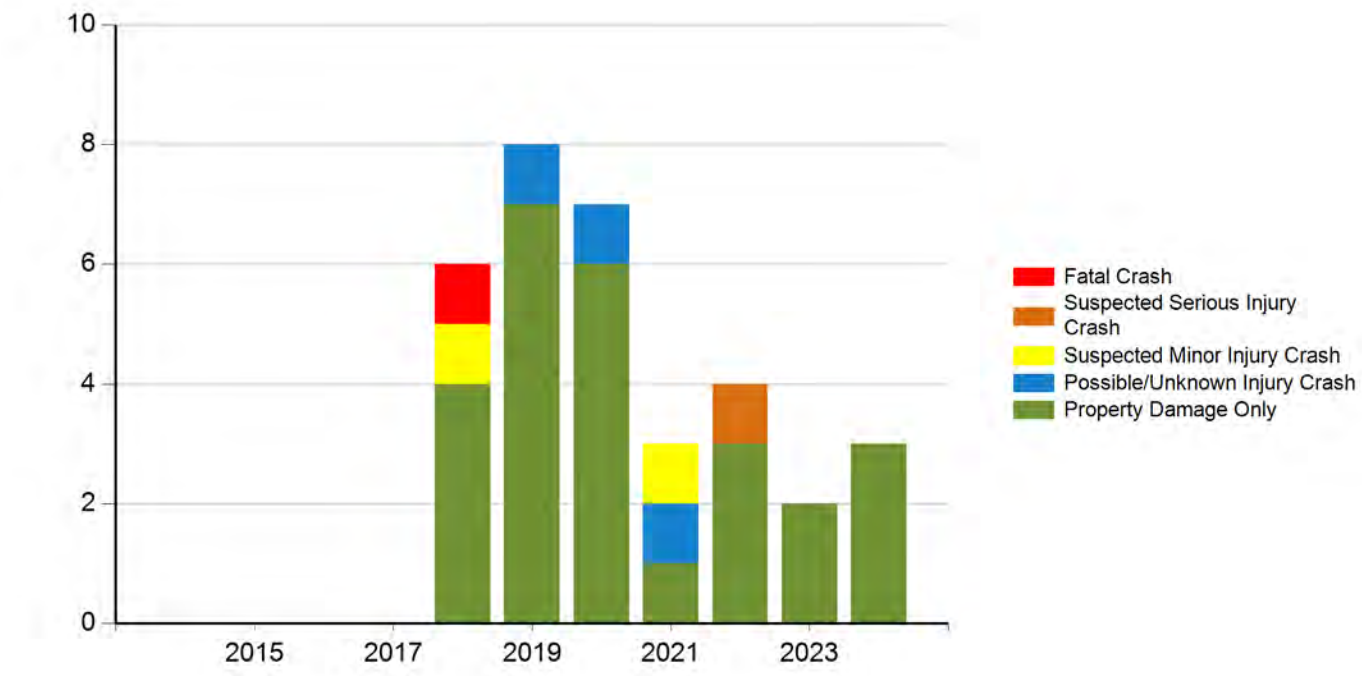
Drug Test Given	43
None	39
Blood	1
Urine	0
Breath	0
Vitreous	0
Refused	0
Not reported	3

Drug Test Result	43
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	43
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**
2014	0	0	0	0	0	0
2015	0	0	0	0	0	0
2016	0	0	0	0	0	0
2017	0	0	0	0	0	0
2018	1	0	1	0	4	6
2019	0	0	0	1	7	8
2020	0	0	0	1	6	7
2021	0	0	1	1	1	3
2022	0	1	0	0	3	4
2023	0	0	0	0	2	2
2024	0	0	0	0	3	3
Total	1	1	2	3	26	33

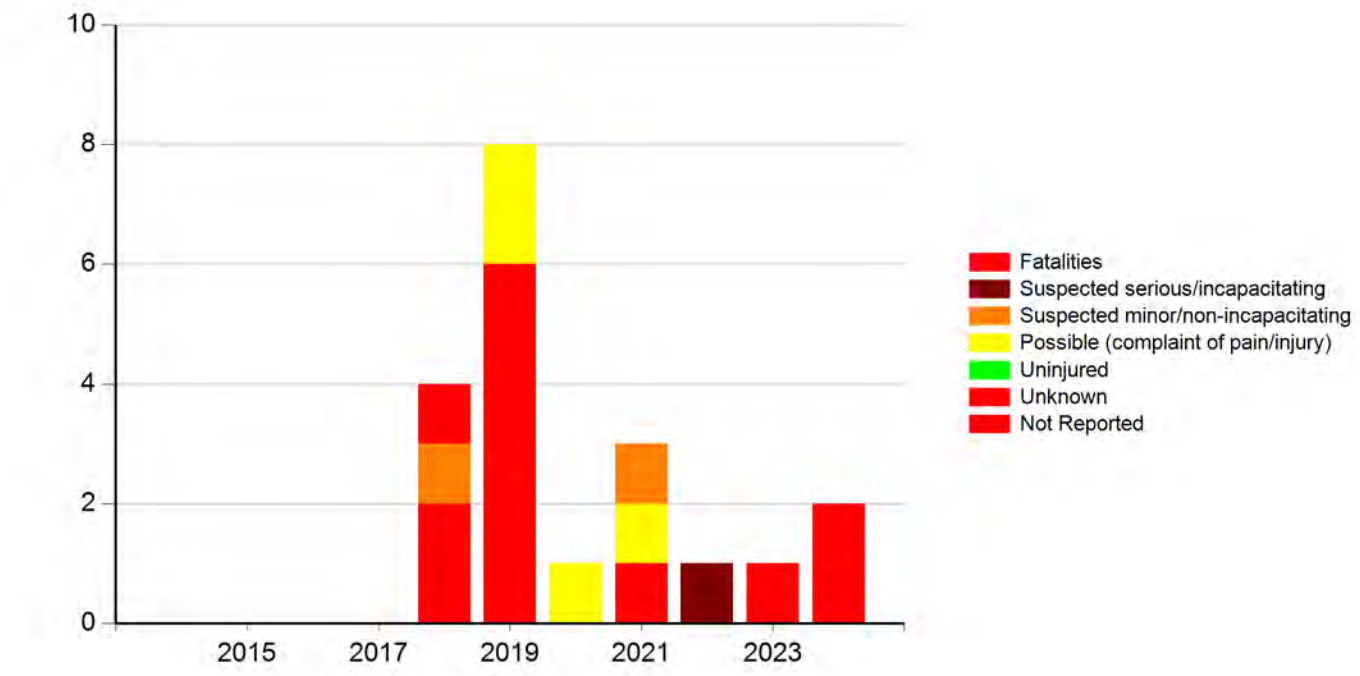
Severity/Year



Injury Status - Annual

Crash Year	Fatalities	Suspected serious/incapacitating	Suspected minor/non-incapacitating	Possible (complaint of pain/injury)	Uninjured	Unknown	Not Reported	**Total**
2014	0	0	0	0	0	0	0	0
2015	0	0	0	0	0	0	0	0
2016	0	0	0	0	0	0	0	0
2017	0	0	0	0	0	0	0	0
2018	1	0	1	0	0	0	2	4
2019	0	0	0	2	0	0	6	8
2020	0	0	0	1	0	0	0	1
2021	0	0	1	1	0	0	1	3
2022	0	1	0	0	0	0	0	1
2023	0	0	0	0	0	0	1	1
2024	0	0	0	0	0	0	2	2
Total	1	1	2	4	0	0	12	20

Injury Status/Year



Meeting the following criteria

Jurisdiction: Counties (Fayette)
Year: 2018, 2019, 2020, 2021, 2022, 2023, 2024
Map Selection: Yes
Filter: None

Analyst Information

County:	Fayette	Prepared By:	Luke Bowdish
Location:	Cedar Rd W51	Date Prepared:	6/24/2024
Proposed Improvements:	Paved shoulder widening with edgeline and centerline rumble stripes.		
Estimated Improvement Cost:	$ 1,057,579		
Inflation on Crash Costs:	4%	Annual Maintenance: (% of Improvement Cost)	2%
Discount Rate:	4%		
Estimated Service Life:	20	Annual Maintenance Cost:	$ 21,152
Method Choice:	CRF Method		

The Crash Reduction Factor (CRF) Method applies one to three CRFs to historical crashes to estimate reductions in future crashes. Crash Modification Factors (CMFs) can be converted to CRFs. For additional information, click the "Learn More" button.

Crash Reduction Factor (CRF) Method

Traffic Growth Factor:	1%
Number of CRFs:	3
Years of Crash History:	6

Combined CRF (Dominant Common Residuals Method)

Iowa DOT's preferred methodology for combining CRFs is Dominant Common Residuals, since it is more conservative than the other options.

	CRF 1:	CRF 2:	CRF 3:	**Combined CRF**
CRF Value (%)	20	4	6	**22.9**

Crash Severity	Rounded Societal Costs	Crash History (Total):	CRF (from above)	Crash History - Annual Avg	Crashes Saved Annually
Fatal (K)	$ 4,200,000	1	22.9	**0.17**	**0.04**
Serious Injury (A)	$ 4,200,000	1	22.9	**0.17**	**0.04**
Minor Injury (B)	$ 280,000	2	22.9	**0.33**	**0.08**
Possible/Unknown Injury (C)	$ 130,000	3	22.9	**0.50**	**0.11**
Property Damage Only (O)	$ 20,000	26	22.9	**4.33**	**0.99**

Crash Severity	Annual Societal Benefit
Fatal (K)	**$ 160,627**
Serious Injury (A)	**$ 160,627**
Minor Injury (B)	**$ 21,417**
Possible/Unknown Injury (C)	**$ 14,915**
Property Damage Only (O)	**$ 19,887**

Total Benefits and Costs

		Implementation Cost	$ 1,057,579
		Present Value of Maint.	$ 287,457
Present Value Benefits (Societal Benefits)	$ 5,575,545	Present Value Costs (Impl. and Maint. Costs)	$ 1,345,035
Present Value Net Return	$ 4,230,510		
Benefit Cost Ratio	**4.15**		

Form continues on next page

County:	Fayette	Prepared By:	Luke Bowdish
Location:	Cedar Rd W51	Date Prepared:	6/24/2024

User Input Required - Custom Values Used

General Customizations

No change to Crash Costs

No change to Discount Rate

No change to Maintenance Costs

Method-Specific Customizations

No change to Traffic Growth Rate

Justification for deviation from default Crash History	As with many rural roads, a 5 year time frame fails to accurately tell the story due to lower traffic volumes. The 5 year B/C is 2.23. The 6 year B/C is 4.15 and we believe more accurately captures the user cost and systematic risk the road, in its present configuration, represents.

Rev. 07/23

Application for SITE-SPECIFIC TSIP FUNDS

GENERAL INFORMATION **DATE:** August 8, 2024

Location / Title of Project: W55-Franklin Avenue (Skunk River Bridge North to Old HWY34 Intersection)

Applicant: Henry County

Contact Person: Jake Hotchkiss Title: County Engineer

Complete Mailing Address: PO Box 655
Mt. Pleasant, IA 52641

Phone: 319 385-0762 (Area Code) E-Mail: jhotchkiss@henrycountyiowa.us

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	$	531,416 (See Estimate)
Total Project Cost	$	3,129,179 (See Estimate)
Safety Funds Requested	**$**	**500,000**

Additional Project Safety Documentation (when available):

- [x] Project information sheet(s) or "Risk Score">50% from County/City's Local Road Safety Plan
- [x] FHWA SS4A Safety Action Plan or similar comprehensive transportation safety plan
  is in draft phase – plan recommends paved shoulders.
- [ ] 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
		☐	☐		
		☐	☐		

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 Henry County

Signed: _____ 8-8-2024
Signature — Date Signed

Jake Hotchkiss
Printed Name

Attest: Jelen G McCall 8-8-2024
Signature — Date Signed

Jelen G McCall
Printed Name

A

RESOLUTION
25-2024-20
APPROVAL OF
TRANSPORTATION SAFETY IMPROVEMENT PROGRAM APPLICATION
FOR W55 (FRANKLIN AVENUE)

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, past traffic data shows the existing W55 (Franklin Avenue) corridor has an accident history and safety for the traveling public could be improved by incorporating safety improvements; and

WHEREAS, safety improvements have been identified and need to be completed:
2 ft paved shoulders including safety edge with rumble strips for centerline and edge line, and 6" pavement markings.

WHEREAS, the overlay of W55 (Franklin Avenue) is included in the Henry County Five (5) Year Construction Program; and

WHEREAS, the Henry County Engineer recommends the TSIP application be submitted to the Iowa Department of Transportation for possible safety funding of the above-mentioned projects.

IT IS THEREFORE RESOLVED, by the Henry County Board of Supervisors to endorse the above-mentioned project and authorize the maintenance of the improvement after construction is complete.

NOW THEREFORE BE IT RESOLVED, by the Henry County Board of Supervisors in session this **8th day of August, 2024,** that the Henry County Board of Supervisors hereby authorizes the County Engineer to execute and submit the application to the Iowa Department of Transportation for Traffic Safety Improvement Program funding.

ATTEST:

Shelly Barber
Henry County Auditor

HENRY COUNTY BOARD OF SUPERVISORS

Greg Moeller, Chairman

Marc B. Lindeen, Member

Chad White, Member

HENRY COUNTY, IOWA
Engineering & Road Department

1510 E. Washington Street
P O Box 655
Mt. Pleasant, Iowa 52641

Phone: 319 385-0762
Fax: 319 385-0777
e-mail: engineer@henrycountyiowa.us

Date: August 8, 2024

B

Office of Traffic & Safety
Iowa DOT
800 Lincoln Way
Ames, IA 50010

RE: Henry County Application for TSIP funds – W55 Franklin Avenue Safety Improvements

Narrative:

Proposed Project
Henry County is applying for Traffic Safety Improvement Program funding to improve the safety on a section of Henry County Road W55 (Franklin Avenue) from the North Bridge Approach of the Skunk River Bridge to 150' North of Old HWY 34 Intersection, approximately 3.1 miles. **We are seeking safety funds for 2 ft paved shoulders including safety edge with rumble strips for centerline and edge line, and 6" Pavement Markings.** Henry County is requesting $500,000 for this safety improvement.

Existing Conditions
This is a Farm to Market road connecting Salem to Mount Pleasant; running North and South thru Henry County. In 1960, the road was originally paved with a 3" HMA surface. In 1974 an additional 3" of HMA was added and again in 1996 a 3" lift was added. Currently, the road is paved 22 feet wide with varying shoulder widths of 3-6 foot granular shoulders and varying fore slopes of 3:1 to 2:1 or steeper, making the road unforgiving for vehicles that leave the traveled roadway. The road is posted 55 mph and has a moderate traffic count of (980 vpd).

Previous Safety Improvements
Henry County has worked over the years to keep signage up to date and current with MUTCD standards. As a standard practice current signage for curves & intersections will be reviewed during our development of plans. Henry County works routinely on keeping brush cut back within the right-of-way and sprays brush after it has been removed; along with mowing shoulders 2-3 times a year. We currently reapply our pavement markings every other year, including edge line and centerline, with a county-owned paint truck. A segment of W55 from City of Salem to Fremont Avenue is currently under construction to include the following: 2ft paved shoulders, rumble strips, and widening and flattening existing shoulders.

LRSP Safety Plan
This road segment was identified as a candidate for 2ft paved shoulders and shoulder rumble strips. Henry County is seeking assistance in funding the paved shoulders and rumble strips in conjunction with our planned resurfacing and reconstruction project.

Crash Reduction Factor
Planning-Level Crash Reduction Factor (CRF) List was utilized. Per recommended list:

RS-12 "Road Segment" Install Edge line & Centerline Rumble Strips CRF=20
RS-02 "Signs & Markings" Install 6-inch Edge line Pavement Markings CRF=7
RS-31 "Road Segment" Add Safety Edge CRF=6
RS-30 "Road Segment" Add Paved Shoulder CRF=2 (To accommodate shoulder rumble strips)

As County Engineer, it is my sincere hope that we can reduce both the number and severity of accidents on this route with our combined safety efforts. Our request for Traffic Safety Improvement Program funding aligns with the recommendation of the LRSP developed for Henry County and we fully expect that funding this project will make significant impact on the safety of this roadway.

Sincerely,

Jake Hotchkiss, PE
Henry County Engineer

C

W55 FRANKLIN AVENUE HMA RESURFACING & PCC NEW

ENGINEER'S ESTIMATE

ESTIMATED PROJECT QUANTITIES

ITEM NO.	ITEM CODE	ITEM	UNIT	Quantities		UNIT PRICES	DIVISION I (HMA&PCC)	DIVISION II (TSIP SAFETY)
				DIV I	DIV II(TSIP)			
1	2102-2625001	EMBANKMENT-IN-PLACE, CONTRACTOR FURNISHED	CY	6000		$11.00	$66,000.00	$0.00
2	2102-2710070	EXCAVATION, CLASS 10, ROADWAY AND BORROW	CY	1000		$5.00	$5,000.00	$0.00
3	2105-8425015	TOPSOIL, STRIP, SALVAGE AND SPREAD	CY	1300		$6.00	$7,800.00	$0.00
4	2115-0100000	MODIFIED SUBBASE	CY	1543	435	$65.00	$100,295.00	$28,275.00
5	2121-7425020	GRANULAR SHOULDERS, TYPE B	TON	3264		$32.00	$104,448.00	$0.00
6	2122-5190008	PAVED SHOULDER, P.C. CONCRETE 8 IN.	SY		673	$150.00	$0.00	$100,950.00
7	2123-7450020	SHOULDER FINISHING, EARTH	STA	296.4		$200.00	$59,280.00	$0.00
8	2212-0475095	CLEAN AND PREPARATION OF BASE	MI	2.16		$2,000.00	$4,320.00	$0.00
9	2213-2713300	EXCAVATION, CLASS 13, WIDEN	CY		1201	$15.00	$0.00	$18,015.00
10	2213-7100400	RELOCATION OF MAILBOX	EACH	10		$300.00	$3,000.00	$0.00
11	2213-8200000	BASE WIDENING, HMA	TON		399	$120.00	$0.00	$47,880.00
12	2214-5145150	PAVEMENT SCARIFICATION	SY	28142.8		$3.50	$98,499.80	$0.00
13	2301-1033080	STANDARD/SLIPFORM PCC, CLASS C, CLASS 3	SY	8376.2	1880	$83.00	$695,224.60	$156,040.00
14	2303-0002380	HMA MIXTURE INTERLAYER BASE COURSE, 3/8 IN. MAX	TON	1612	184	$105.00	$169,260.00	$19,320.00
15	2303-1032500	HMA STANDARD TRAFFIC, INTERMEDIATE COURSE, 1/2 IN. MIX	TON	2418	272	$85.00	$205,530.00	$23,120.00
16	2303-1033500	HMA STANDARD TRAFFIC, SURFACE COURSE, 1/2 IN. MIX, NO SPECIAL FRICTION REQUIREMENT	TON	2418	248	$85.00	$205,530.00	$21,080.00
17	2303-1258283	ASPHALT BINDER, PG 58-28S, STANDARD TRAFFIC	TON	129	55.2	$675.00	$87,075.00	$37,260.00
18	2303-1258346	ASPHALT BINDER, PG 58-34E, EXTREMELY HIGH TRAFFIC	TON	290	14.7	$850.00	$246,500.00	$12,495.00
19	2303-6911000	HMA PAVEMENT SAMPLES	LS	1		$3,000.00	$3,000.00	$0.00
20	2315-8275025	SURFACING, DRIVEWAY, CLASS A CRUSHED STONE	TON	440		$35.00	$15,400.00	$0.00
21	2402-0425031	GRANULAR BACKFILL	TON	300		$52.00	$15,600.00	$0.00
22	2402-0425040	FLOODED BACKFILL	CY	200		$45.00	$9,000.00	$0.00
23	2402-2720100	EXCAVATION, CL 20, RDWY PIPE CULV	CY	1000		$20.00	$20,000.00	$0.00
24	2402-2724100	EXCAVATION, CL 24, RDWY PIPE CULV	CY	145		$20.00	$2,900.00	$0.00
25	2416-0100036	APRON, CONC, 36 IN. DIA.	EACH	4		$2,000.00	$8,000.00	$0.00
26	2416-1240036	CULV,3000D CONC RDWY PIPE, 36 IN.	LF	200		$125.00	$25,000.00	$0.00
27	2507-3250005	ENGINEER FABRIC	SY	200		$3.50	$700.00	$0.00
28	2507-6800061	REVETMENT, CLASS 'E'	TON	75		$60.00	$4,500.00	$0.00
29	2510-6745850	REMOVAL OF PAVEMENT	SY	8416.7		$10.00	$84,167.00	$0.00
30	2527-9263109	PAINTED PAVEMENT MARKINGS, WATERBORNE OR SOLVENT	STA		440	$30.00	$0.00	$13,200.00
31	2528-2518000	SAFETY CLOSURE	EACH	4		$250.00	$1,000.00	$0.00

C

W55 FRANKLIN AVENUE HMA RESURFACING & PCC NEW

ENGINEER'S ESTIMATE

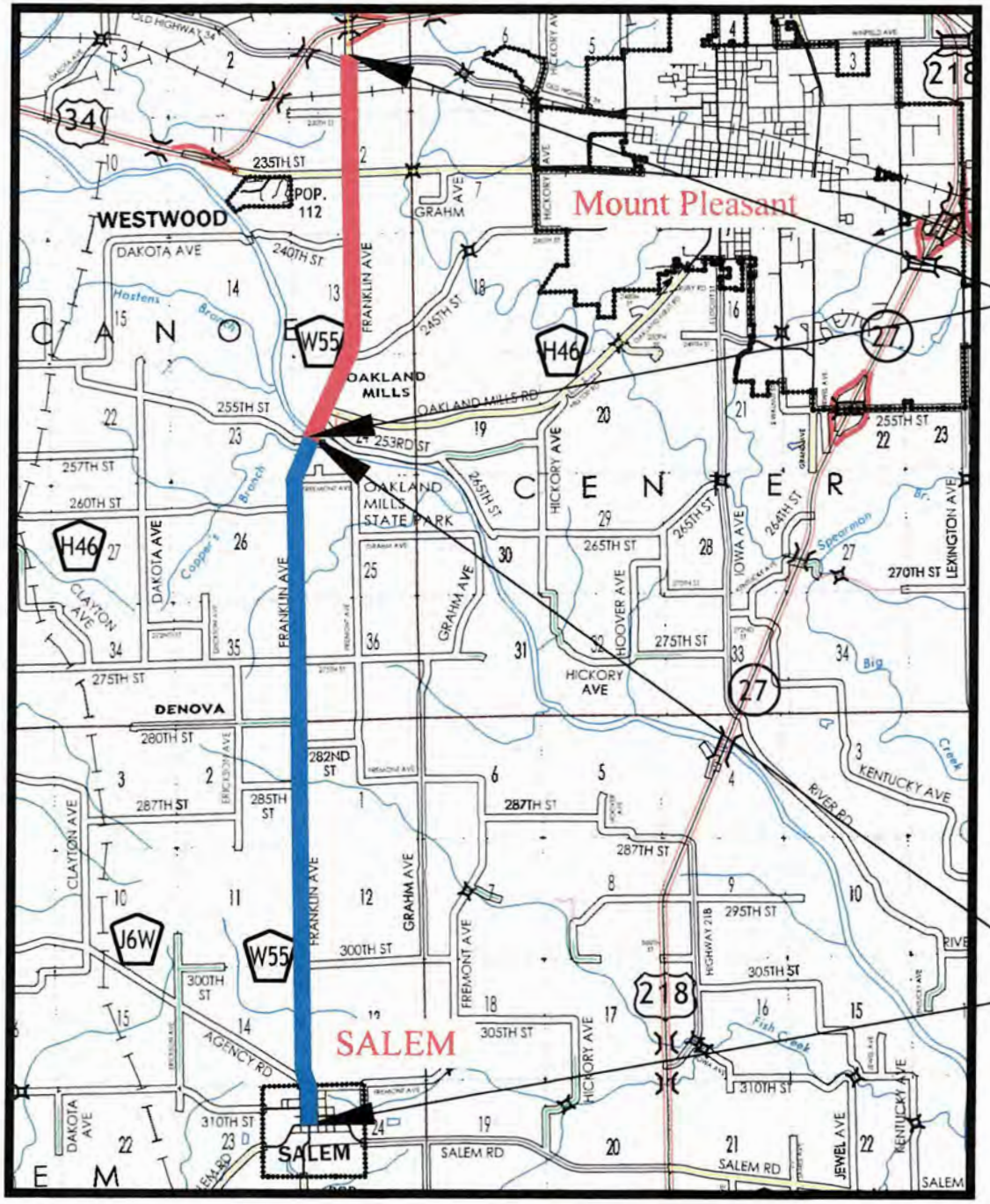
ESTIMATED PROJECT QUANTITIES

ITEM NO.	ITEM CODE	ITEM	UNIT	Quantities		UNIT PRICES	DIVISION I (HMA&PCC)	DIVISION II (TSIP SAFETY)
				DIV I	DIV II(TSIP)			
32	2528-8445110	TRAFFIC CONTROL	LS	0.85	0.15	$15,000.00	$12,750.00	$2,250.00
33	2528-8445113	FLAGGERS	EACH	30		$575.00	$17,250.00	$0.00
34	2528-8445115	PILOT CAR	EACH	15		$865.00	$12,975.00	$0.00
35	2533-4980005	MOBILIZATION	LS	0.85	0.15	$150,000.00	$127,500.00	$22,500.00
36	2548-0000200	MILLED SHLD RUMBLE STRIP, PCC SURF	STA		90	$80.00	$0.00	$7,200.00
37	2548-0000100	MILLED SHOULDER RUMBLE STRIPS, HMA SURFACE	STA		227	$25.00	$0.00	$5,675.00
38	2548-0000110	ASPHALT EMULSION FOR FOG SEAL (SHOULDER RUMBLE STRIP)	GAL		575.1	$10.00	$0.00	$5,751.00
39	2548-0000320	MILLED CENTERLINE RUMBLE STRIP, PCC SURF	STA		46	$80.00	$0.00	$3,680.00
40	2548-0000310	MILLED CENTERLINE RUMBLE STRIPS, HMA SURFACE	STA		269	$25.00	$0.00	$6,725.00
41	2601-2634100	MULCH	ACRE	5		$600.00	$3,000.00	$0.00
42	2601-2636043	SEED & FERTILIZING (RURAL)	ACRE	5		$1,200.00	$6,000.00	$0.00
43	2601-2638352	SLOPE PROTECTION, WOOD EXCELSIOR	SQ	100		$15.00	$1,500.00	$0.00
44	2602-0000020	SILT FENCE	LF	3000		$2.50	$7,500.00	$0.00
45	2602-0000030	SILT FENCE FOR DITCH CHECKS	LF	3000		$2.50	$7,500.00	$0.00
46	2602-0000101	MAINTENANCE OF SILT FENCE OR SILT FENCE FOR DITCH CHECK	LF	1500		0.5	$750.00	$0.00
47	2602-0000312	PERIMETER+SLOPE SEDIMENT CNTL DEVICE, 12 IN.	LF	500		5	$2,500.00	$0.00
48	2602-0010010	MOBILIZATION, EROSION CONTROL	EACH	5		500	$2,500.00	$0.00
							$2,448,754.40	$531,416.00

FUNDING SOURCE BREAKDOWN	
Funding Sources	Amount
DIV II Safety	$500,000
DIV I FM FUNDS	$2,629,179
TOTAL PROJECT COST	$3,129,179

Total + 5% Contigency **$3,129,178.92**

D & E



PROPOSED PROJECT $500,000 TSIP FUNDS.
(APPROXIMATELY 3.10 MILES)
2.2 miles HMA overlay and 2' Paved HMA shoulders.
0.9 miles PCC New with 2' PCC paved shoulders.
Included Shoulder & Center Line Rumble strips, 6 Inch Pavement Markings, and Safety Edge Both Pavements.

Anticipated Schedule:

- Plan Development July 2025
- IDOT Letting : Dec 2025
- Spring/Summer 2026 Construction
- Anticipated completion September 2026

N NOT TO SCALE

FY 22 TSIP FUNDED($500,000)
Currently Under Construction to be completed Fall of 2024
Length of Project =5.8 Miles

HENRY COUNTY	PROJECT NUMBER ILL-C044(W55)--92-44

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F

Pictures:
W55 from 235th Street North to Old HWY 34 (0.9) miles

Looking North @ intersection of W55 & 235th Street

Looking South @ intersection of W55 & 230th Street

Typical foreslope & shoulder along W55 from 235th to Old HWY 34.

Looking South @ intersection of W55 & Old HWY 34 to BNSF Railroad Bridge constructed 2019.

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F

Pictures:
W55 from Oakland Mills North to 235th Street (2.2) miles

Looking South @ intersection of W55 & 235th Street

Typical Shoulder Edge along W55 from Oakland Mills to 235th St.

Typical Shoulder Edge along W55 from Oakland Mills to 235th St.

Typical Road Cross section along W55 from Oakland Mills & 235th St.

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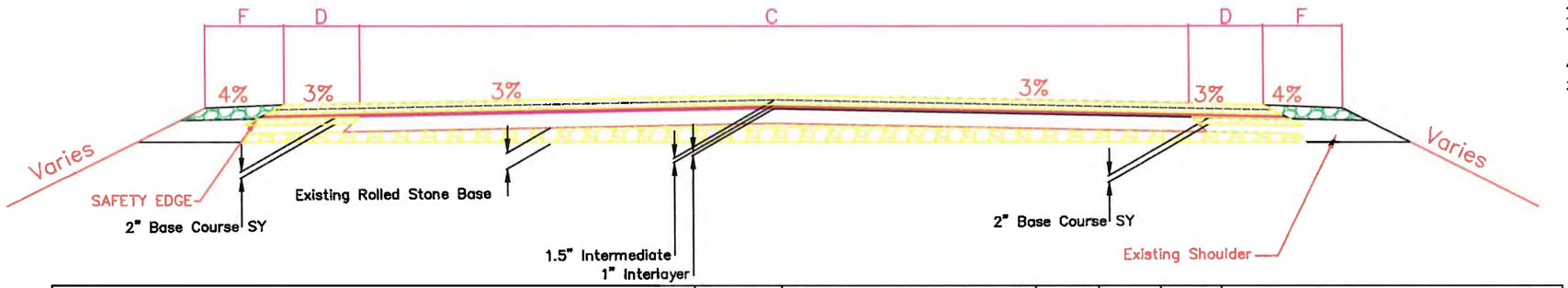
HMA RESURFACING TYPICAL

NOTES:

HENRY– 17
11–06–14

1. Mill 2" of existing surface see Existing Road Typical Henry-18.
2. Quantities based off of 147 lb/cf
3. Quantities are based on 6% of Surface and Intermediate mix.
4. Quantities are based on 8% of Interlayer Mix.
5. Henry County will be responsible for staking superelevation transitions for surfacing and Milling operation.

G



LOCATION			FEET	22' PAVEMENT			Ⓒ	Ⓓ	Ⓕ	2' PAVED SHOULDER+SAFETY EDGE			
ROAD IDENTIFICATION	STATION TO STATION			1.5" SURFACE TON ***	1.5" INTERMEDIATE TON ***	1" INTERLAYER TON				1.5" SURFACE TON ***	1.5" INTERMEDIATE TON ***	1" INTERLAYER TON	2" BASE TON
W55	451+45	565+33	11,388	2,418	2,418	1,612	22.0'	2.0'	3.0'	232	256	184	399
W55	565+32 **BOTH RADIUS		--	--	--	--	--	--	--	**16.0	**16.0	--	--
		TOTALS	11,388	2,418	2,418	1,612				248.0	272.0	184.0	399

**SEE DETAILS AND QUANTITIES ON SHEET L.01
***Quantities include 5% for Irregularities & Fillets

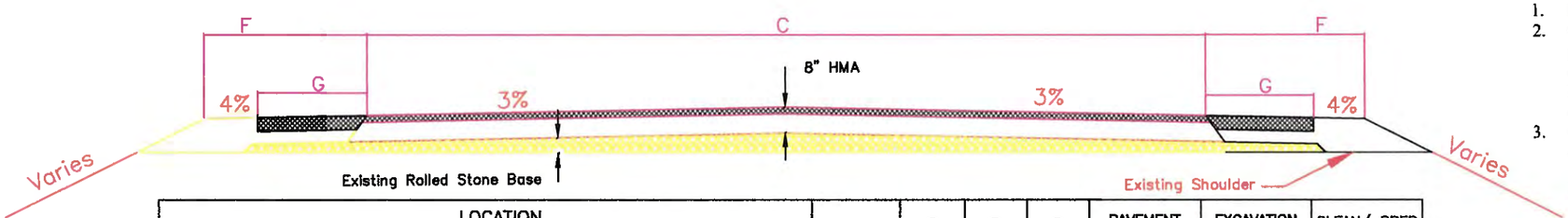
EXISTING PAVEMENT/MILLING TYPICAL

NOTES:

HENRY– 18
11–06–14

1. Existing HMA is a minimum of 8 inches.
2. Contractor will be required to surface mill existing pavement for a minimum of 2 inches and milling operation shall correct cross section to desired 3%. Milled material will become the property of the contractor.
3. Contractor will be required to remove 4 inches of existing shoulder by 3' for base widening and will be paid for by excavation class 13. Excavated material shall be the property of the contractor. Material may be incorporated with grading operation. Material consist of existing HMA shoulder, HMA Fillets, Granular shoulder.
4. Henry County will mark transistion points for milling operation to optimize depth of overlay through curves.

** See L.01 For Details



LOCATION			FEET	Ⓒ	Ⓕ	Ⓖ	PAVEMENT SCARIFICATION SY	EXCAVATION CLASS 13 CY	CLEAN/ PREP MILE
ROAD IDENTIFICATION	STATION TO STATION								
W55	451+45	565+33	11,388	22.0'	5.0'	3.0'	27,847.1	843	2.16
W55	379+07	Radius	--	--	--	--	**295.7	--	--
		TOTALS	11,388				28,142.8	843	2.16

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PCC PAVEMENT TYPICAL

NOTES:

HENRY– 19
07–06–24

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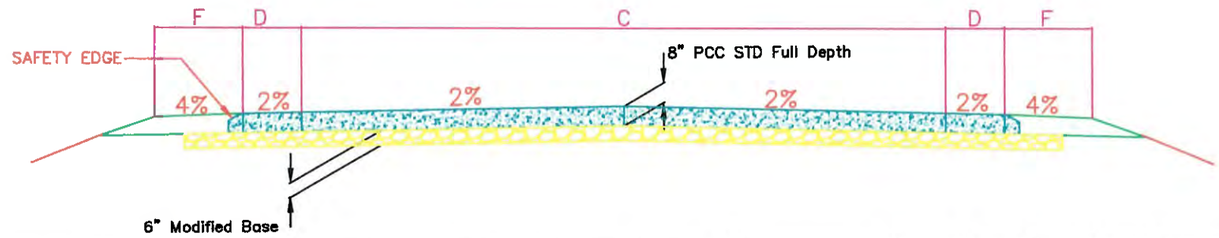

LOCATION			FEET	22' PAVEMENT 8" PCC STD		Ⓒ	Ⓓ	Ⓕ	2' PAVED 8" SHDLR+SAFETY EDGE		4' PAVED 8" SHDLR+SAFETY EDGE		
ROAD IDENTIFICATION	STATION TO STATION			*Furnish CY	Place SY				*Furnish CY +Safety Edge	Place SY +Safety Edge	*Furnish CY +Safety Edge	Place SY +Safety Edge	Excavation, Class 13 (CY)
W55	565+95	East&West Radius	**	23.2	104.2								
W55	566+32	592+96	2,644	1,448	6,512	22.0'	2.0'	3.0'	329.1	1,480			
W55	592+96	599+00	604				4.0'	4.0'			75	336	90
W55	601+23	607+30	607				4.0'	4.0'			75	337	90
W55	607+30	614+50	720	391	1,760	22.0'	2.0'	3.0'	88.9	400			
		TOTALS	3,814		8376.2				418	1880			

* Quantities for reference only measurement & payment per SY
Placement will monolithic with mainline.
** See L.02–L.03 for details and limits of Radius work
** See L.02–L.03 for details and limits of Radius work

** See L.01 For Details

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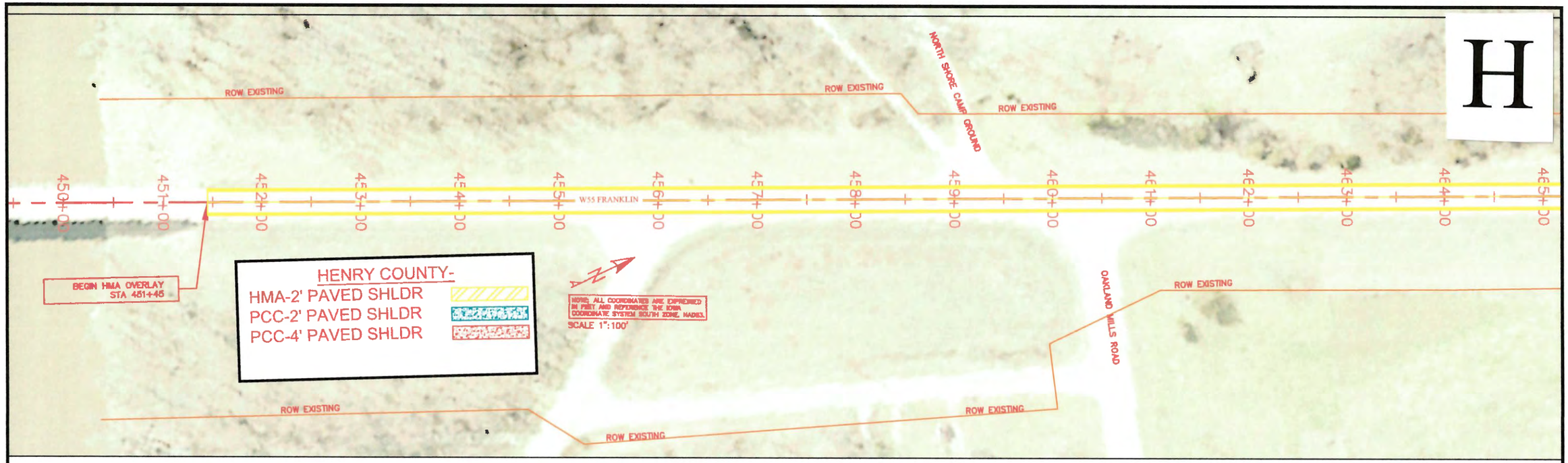

FILE: O:\CONSTRUCTION PROJECTS\CPF 2024\CPF W55.dwg	HENRY COUNTY	PROJECT NUMBER: ILL-CO44(W55)--92-44 -TSIP	FISCAL YEAR 2026	SHEET NUMBER D.01

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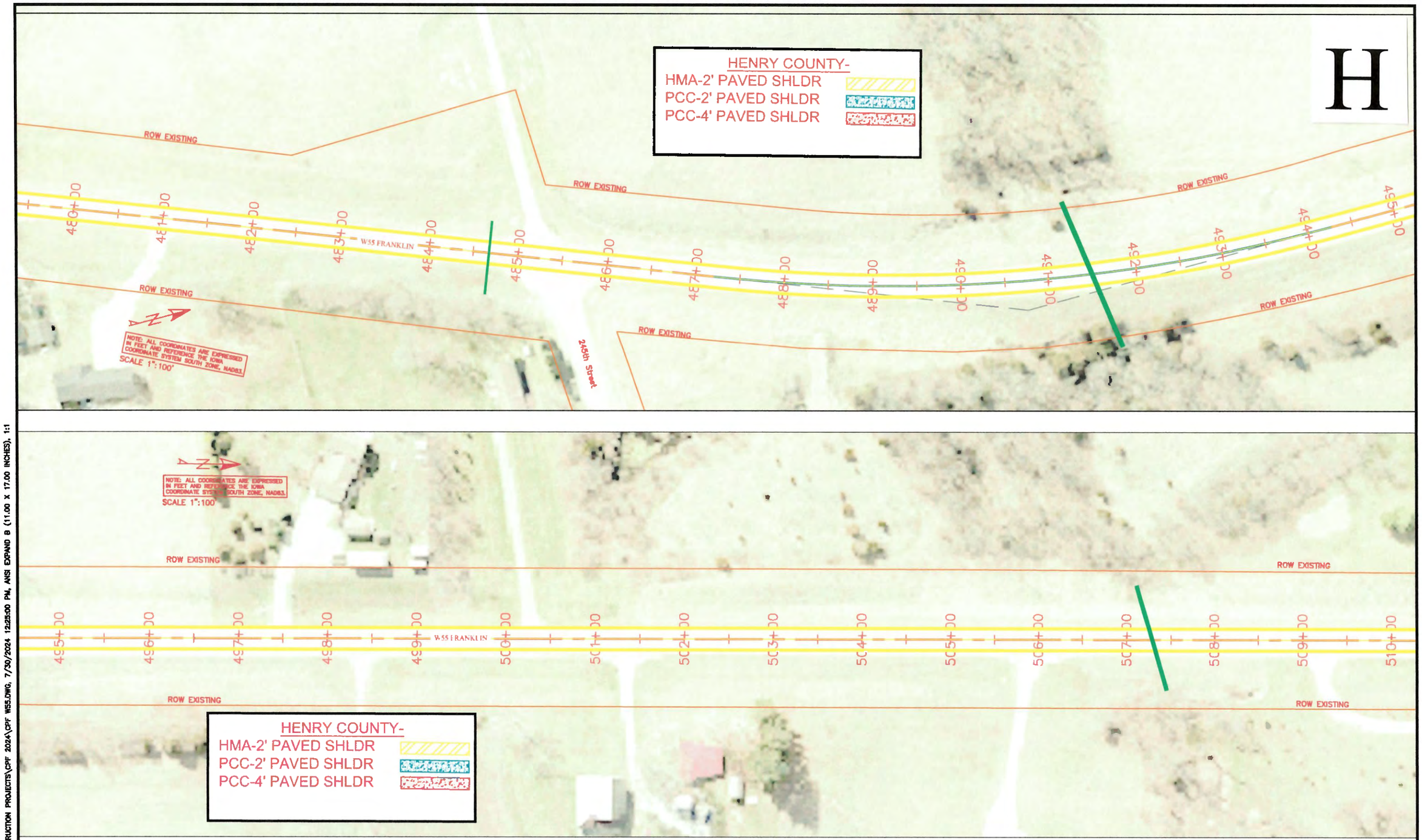

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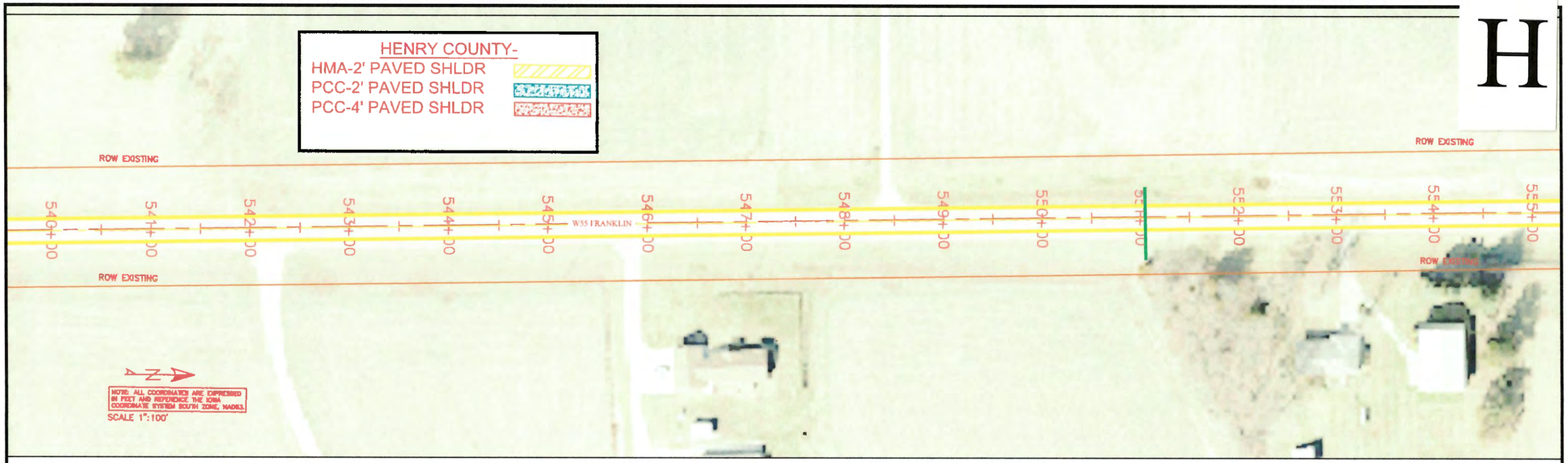

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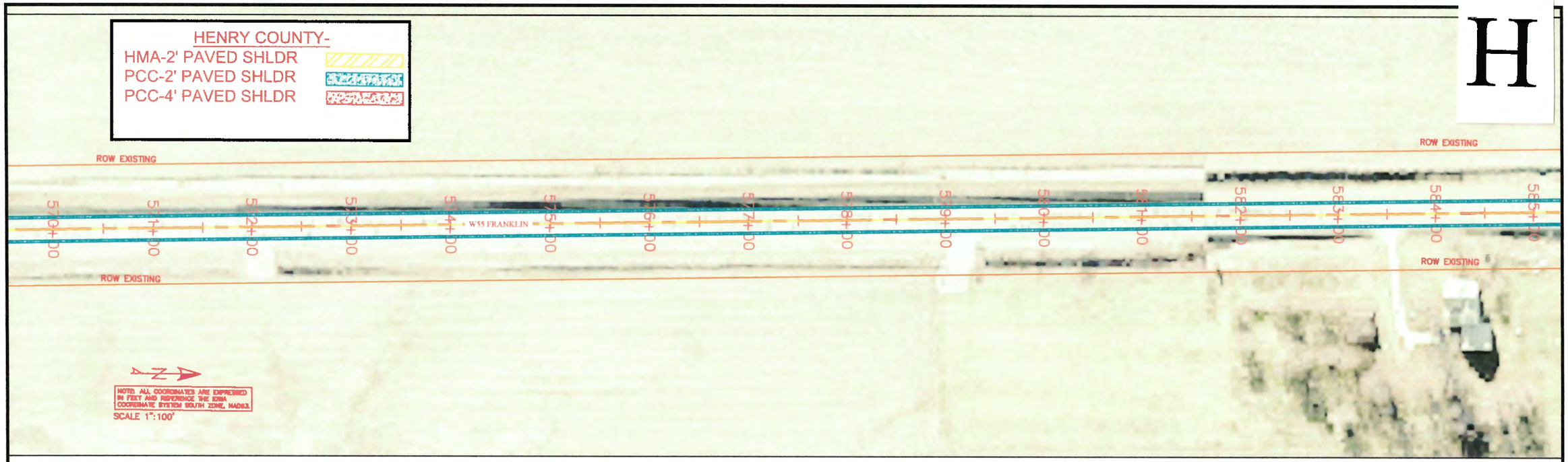
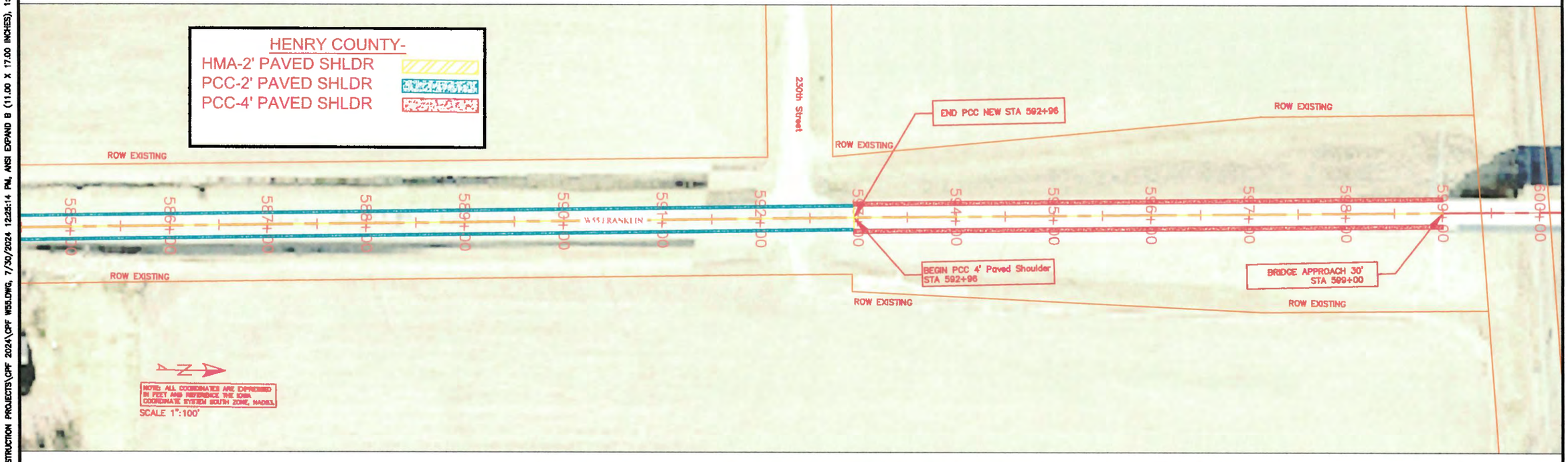
FILE: O:\CONSTRUCTION PROJECTS\CPF 2024\CPF W55.dwg	HENRY COUNTY	PROJECT NUMBER: ILL-CO44(W55)--92-44 -TSIP	FISCAL YEAR 2026	SHEET NUMBER D.04

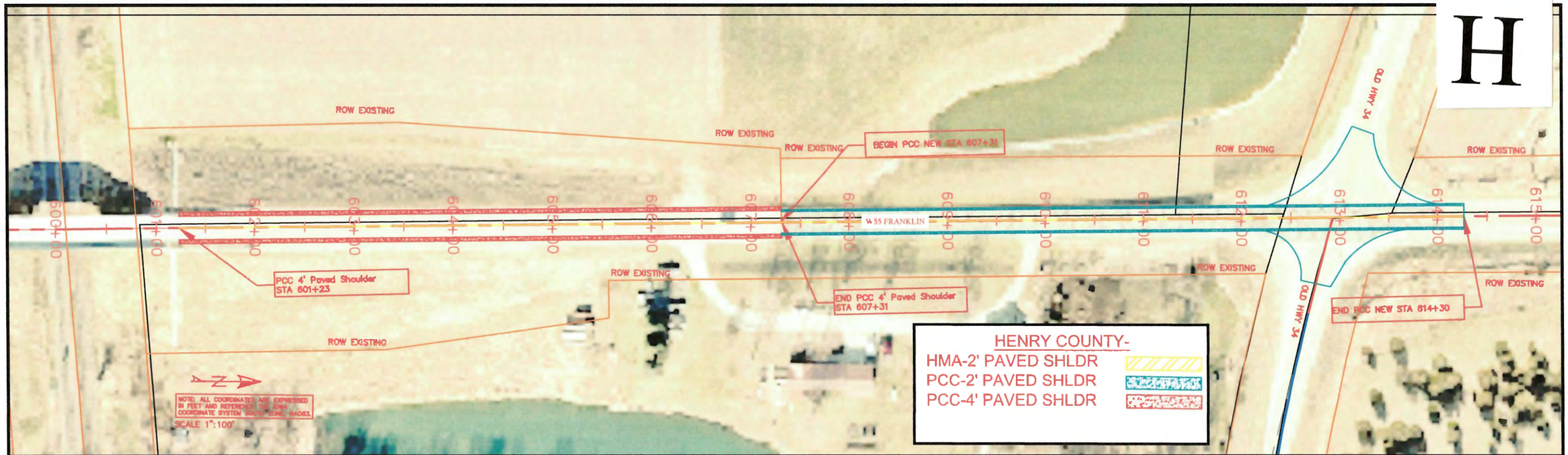
H





C:\CONSTRUCTION PROJECTS\CPF 2024\CPF W55.DWG, 7/30/2024 12:25:14 PM, ANSI EXPAND B (11.00 X 17.00 INCHES), 1:1

FILE: O:\CONSTRUCTION PROJECTS\CPF 2024\CPF W55.dwg	HENRY COUNTY	PROJECT NUMBER: ILL-CO44(W55)--92-44 -TSIP	FISCAL YEAR 2026	SHEET NUMBER D.05



O:\CONSTRUCTION PROJECTS\CPF 2024\CPF W55.DWG, 7/30/2024 12:25:19 PM, ANSI EXPAND B (11.00 X 17.00 INCHES), 1:1

FILE: O:\CONSTRUCTION PROJECTS\CPF 2024\CPF W55.dwg	HENRY COUNTY	PROJECT NUMBER: ILL-CO44(W55)–92-44 -TSIP	FISCAL YEAR 2026	SHEET NUMBER D.06

Iowa Crash Analysis Tool
Quick Report
2015-2024

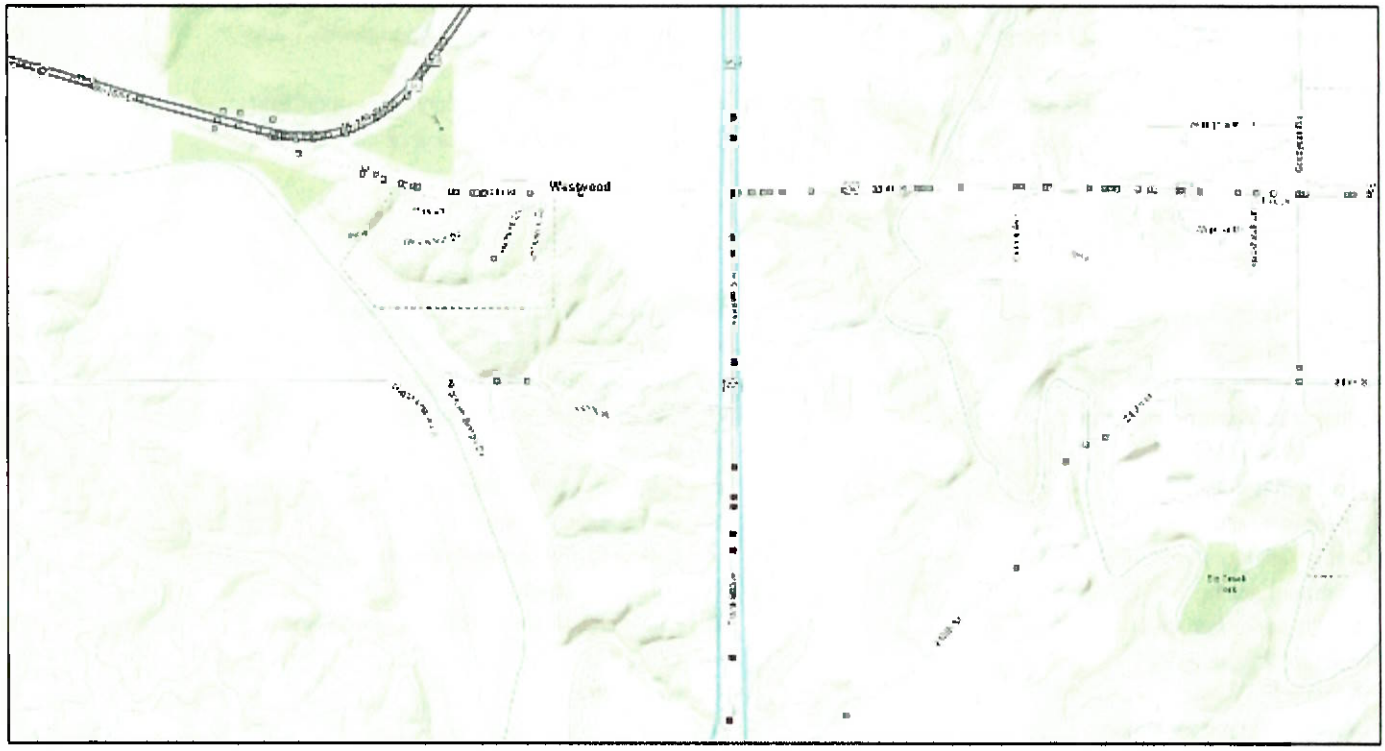
I

Crash Severity	41
Fatal Crash	1
Suspected Serious Injury Crash	2
Suspected Minor Injury Crash	4
Possible/Unknown Injury Crash	6
Property Damage Only	28

Injury Status Summary	38
Fatalities	1
Suspected serious/incapacitating	5
Suspected minor/non-incapacitating	10
Possible (complaint of pain/injury)	6
Uninjured	0
Unknown	0
Not Reported	16

Property/Vehicles/Occupants	
Property Damage Total (dollars):	359,153.00
Average (per crash dollars):	8,759.83
Total Vehicles:	57.00
Average (per crash):	1.39
Total Occupants:	78.00
Average (per crash):	1.90

Average Severity	
Fatalities/Fatal Crash:	1.00
Fatalities/Crash:	0.02
Injuries/Crash:	0.51
Major Injuries/Crash:	0.12
Minor Injuries/Crash:	0.24
Possible/Unknown Injuries/Crash:	0.15



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	1	0	0	1	1	1	0	0	0	4
Monday	0	0	0	0	0	0	0	0	1	2	0	0	0	3
Tuesday	1	0	0	2	0	0	1	0	1	0	1	0	0	6
Wednesday	0	0	2	0	0	0	2	0	1	0	1	1	0	7
Thursday	0	0	2	2	1	0	1	1	3	0	0	0	0	10
Friday	0	0	0	1	0	0	1	1	0	1	0	1	0	5
Saturday	1	0	0	0	0	1	1	0	1	2	0	0	0	6
Total	2	0	4	5	2	1	6	3	8	6	2	2	0	41

Manner of Crash Collision	**41**
Non-collision (single vehicle)	13
Head-on (front to front)	0
Rear-end (front to rear)	1
Angle (oncoming left turn)	0
Broadside (front to side)	14
Sideswipe (same direction)	0
Sideswipe (opposite direction)	1
Rear to rear	0
Rear to side	0
Not reported	12
Other	0
Unknown	0

Surface Conditions	**41**
Dry	20
Wet	4
Ice/frost	0
Snow	1
Slush	0
Mud/dirt	0
Water (standing or moving)	0
Sand	0
Oil	0
Gravel	0
Not reported	16
Other	0
Unknown	0

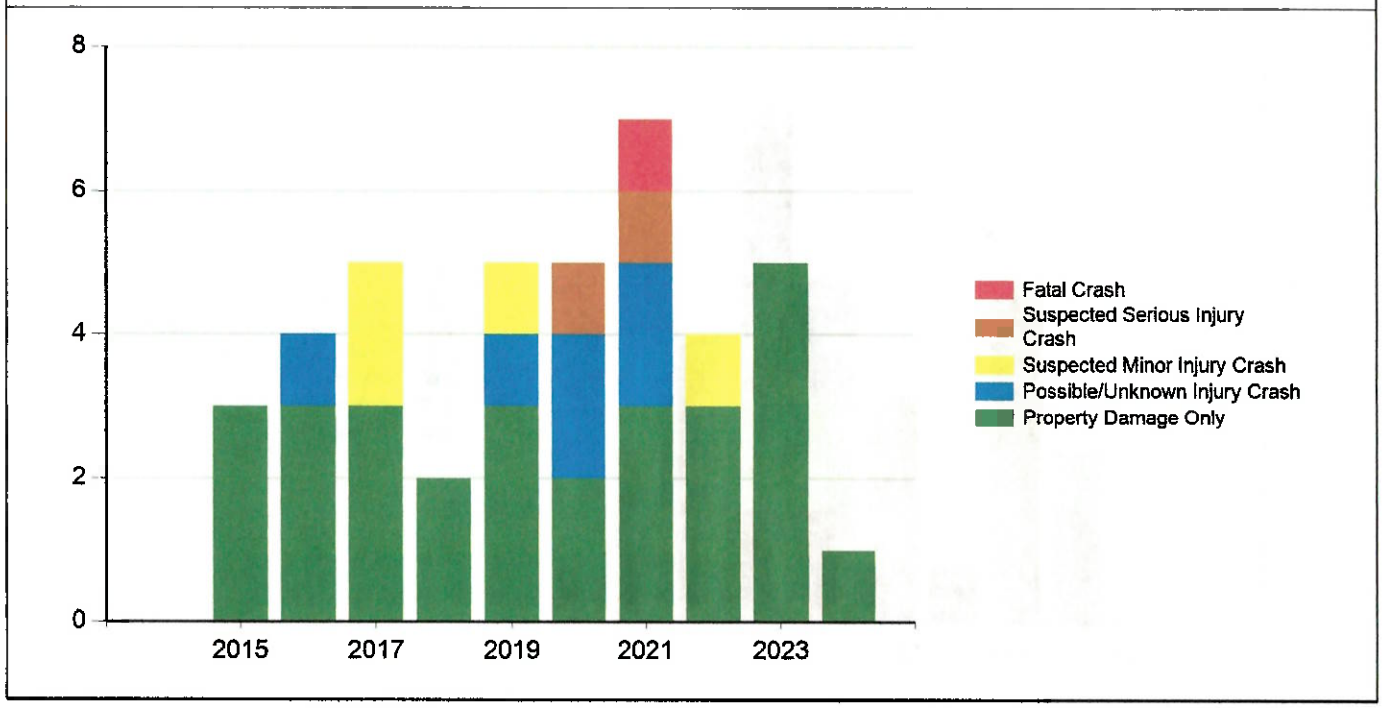
Fixed Object Struck			**57**
Bridge overhead structure	0	Bridge pier or support	0
Bridge/bridge rail parapet	0	Curb/island/raised median	0
Ditch	3	Embankment	1
Ground	0	Culvert/pipe opening	0
Guardrail - face	0	Guardrail - end	0
Concrete traffic barrier (median or right sid...	0	Other traffic barrier	0
Cable barrier	0	Impact attenuator/crash cushion	0
Utility pole/light support	0	Traffic sign support	2
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)	51

Iowa Crash Analysis Tool
Quick Report
2015-2024

Crash Severity - Annual

Crash Year	Fatal Crash	Suspected Serious Injury Crash	Suspected Minor Injury Crash	Possible/Unknown Injury Crash	Property Damage Only	Total
2014	0	0	0	0	0	0
2015	0	0	0	0	3	3
2016	0	0	0	1	3	4
2017	0	0	2	0	3	5
2018	0	0	0	0	2	2
2019	0	0	1	1	3	5
2020	0	1	0	2	2	5
2021	1	1	0	2	3	7
2022	0	0	1	0	3	4
2023	0	0	0	0	5	5
2024	0	0	0	0	1	1
Total	1	2	4	6	28	41

Severity/Year

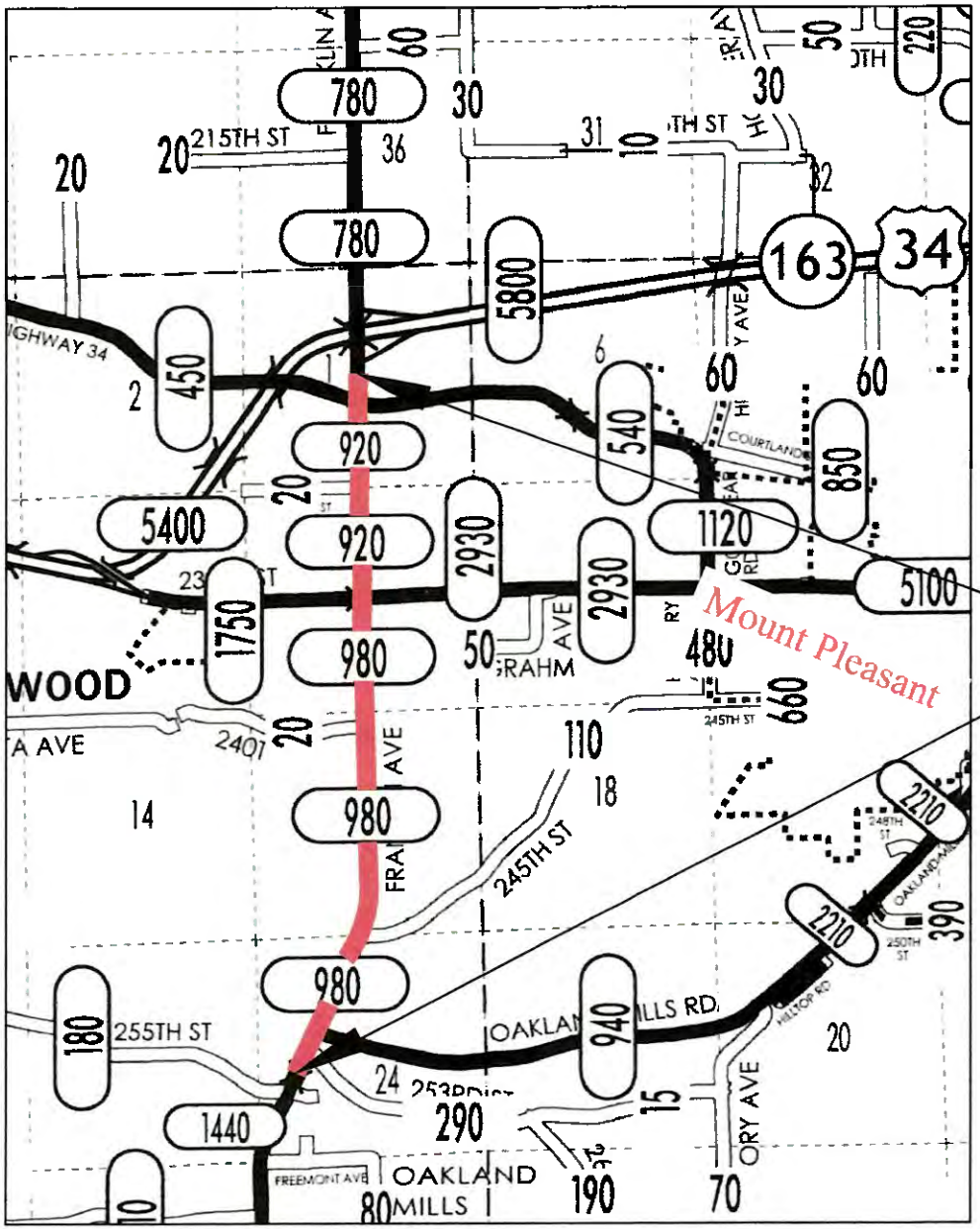


Meeting the following criteria

Jurisdiction: Counties (Henry)
Year: 2015, 2016, 2017, 2018, 2019, 2020, 2021, 2022, 2023, 2024
Map Selection: Yes
Filter: None

Analyst Information

J



W55 PROJECT LIMITS
2022 IDOT TRAFFIC AADT

N NOT TO SCALE

	HENRY COUNTY	PROJECT NUMBER ILL-C044(W55)--92-44

Y:\MAPS 2008-\COUNTY MAP LOCATION FOR TITLE SHEETS.DWG, 7/30/2024 2:34:10 PM, ANSI FULL BLEED A (8.50 X 11.00 INCHES), 1:1

County:	Henry	Prepared By:	Jake Hotchkiss
Location:	W55 from Oakland Mills to Old 34	Date Prepared:	6/28/2024
Proposed Improvements:	HMA overlay 2.2 miles from Oakland mills bridge North to 235th and 235th North to Old 34 replace and place 8" PCC x 22'+2'PCC shoulders		
Estimated Improvement Cost:	$ 531,416		
Inflation on Crash Costs:	4%	Annual Maintenance: (% of Improvement Cost)	2%
Discount Rate:	4%		
Estimated Service Life:	20	Annual Maintenance Cost:	$ 10,628

L

Method Choice: CRF Method

The Crash Reduction Factor (CRF) Method applies one to three CRFs to historical crashes to estimate reductions in future crashes. Crash Modification Factors (CMFs) can be converted to CRFs. For additional information, click the "Learn More" button.

Crash Reduction Factor (CRF) Method

Traffic Growth Factor:	1%
Number of CRFs:	3
Years of Crash History:	5

Combined CRF (Dominant Common Residuals Method)

Iowa DOT's preferred methodology for combining CRFs is Dominant Common Residuals, since it is more conservative than the other options.

	CRF 1:	CRF 2:	CRF 3:	Combined CRF
CRF Value (%)	20	7	6	**24.9**

Crash Severity	Rounded Societal Costs	Crash History (Total):	CRF (from above)	Crash History - Annual Avg	Crashes Saved Annually
Fatal (K)	$ 4,200,000	1	24.9	**0.20**	**0.05**
Serious Injury (A)	$ 4,200,000	2	24.9	**0.40**	**0.10**
Minor Injury (B)	$ 280,000	4	24.9	**0.80**	**0.20**
Possible/Unknown Injury (C)	$ 130,000	6	24.9	**1.20**	**0.30**
Property Damage Only (O)	$ 20,000	28	24.9	**5.60**	**1.39**

Crash Severity	Annual Societal Benefit
Fatal (K)	**$ 208,985**
Serious Injury (A)	**$ 417,969**
Minor Injury (B)	**$ 55,729**
Possible/Unknown Injury (C)	**$ 38,811**
Property Damage Only (O)	**$ 27,865**

Total Benefits and Costs

		Implementation Cost	$ 531,416
		Present Value of Maint.	$ 144,442
Present Value Benefits (Societal Benefits)	$ 11,068,566	Present Value Costs (Impl. and Maint. Costs)	$ 675,858
Present Value Net Return	$ 10,392,708		
Benefit Cost Ratio	**16.38**		

Form continues on next page

County: Henry
Location: W55 from Oakland Mills to Old 34

Prepared By: Jake Hotchkiss
Date Prepared: 6/28/2024

L

No Input Necessary - No Custom Values In Use

General Customizations

No change to Crash Costs

No change to Discount Rate

No change to Maintenance Costs

Method-Specific Customizations

No change to Traffic Growth Rate

No change to Crash History

Rev. 07/23

Application for SITE-SPECIFIC TSIP FUNDS

GENERAL INFORMATION **DATE:** August 15, 2024

Location / Title of Project Rutland, Volberding and Avery hill Curves

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	$	
Total Project Cost	$	345,654
Safety Funds Requested	**$**	

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
		☐	☐		
		☐	☐		

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

Signed: _____ 8-15-2024
Signature Date Signed

Ben Lovio
Printed Name

Attest: _____ 8/15/24
Signature Date Signed

DAVID POWELL
Printed Name

HUMBOLDT COUNTY BOARD OF SUPERVISORS

Resolution #2024-0812.2

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 Paved shoulders and rumble strips 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 12 DAY OF August, 2024

AYES: Erik, Bruce, Sandy, Dave

NAYS: _____

OTHER: Rick (Absent)

Chairman

Humboldt County Board of Supervisors

Attest: Rawnee Graham

Trish Erickson, Humboldt County Auditor

B. Narrative

Humboldt County Secondary Road Department is applying for Transportation Safety Improvement (TSIP) funds for three site specific improvements. The proposed improvements consist of 4' paved shoulders with an 6" white edgeline and shoulder rumble strip installation.

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.

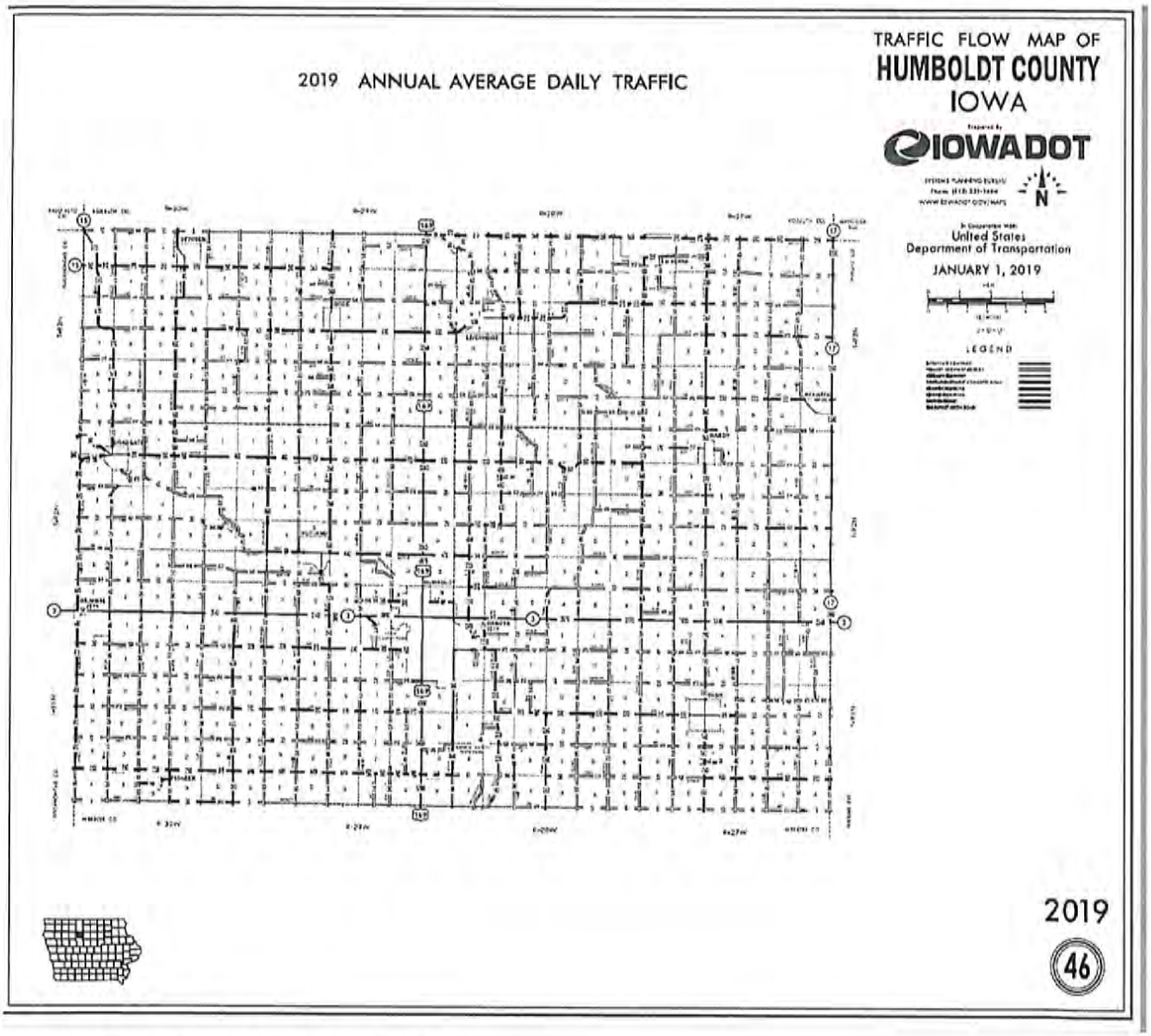
Humboldt County is requesting TSIP funding for the cost of these improvements to the three locations listed.

C. Cost breakdown (see attachment)

D. Time Schedule

- TSIP Application Due — August 15, 2024
- TSIP Award Notification — January, 2025
- Proposed letting — April 1, 2025
- TSIP Funding Available — July 1, 2025
- Completion by date — November, 2025

E. Map



G. Plan View (See Attachment)

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 – (See Attachment)

C. Cost

HUMBOLDT COUNTY COST ESTIMATE
Project No.
Pavement Widening

ITEM NO.	DESCRIPTION	UNITS	TOTAL UNITS	ENGINEER PROBABLE COST UNIT COST ESTIMATE	ENGINEER PROBABLE COST TOTAL ITEM COST ESTIMATE	unit	total	unit	total
	RUTLAND CURVES								
1	Excavation, Class 13	CY	208	$12.00	$2,496.00	$-	$-	$-	$-
2	Paved Shoulder, HMA Mixture, 6"	SY	1250	$70.00	$87,500.00	$-	$-	$-	$-
3	Traffic Control	LS	1	$5,500.00	$5,500.00	$-	$-	$-	$-
4	Flaggers	Each	8	$575.00	$4,600.00	$-	$-	$-	$-
5	Mobilization	LS	1	$25,000.00	$25,000.00	$-	$-	$-	$-
6	Milled Shoulder Rumble Strip, HMA	STA	28	$25.00	$700.00	$-	$-	$-	$-
7	Painted Pavement Markings, 8"	STA	28	$16.00	$448.00	$-	$-	$-	$-
	TOTAL				$126,244.00				$-
	AVERY HILL								
1	Excavation, Class 13	CY	244	$12.00	$2,928.00	$-	$-	$-	$-
2	Paved Shoulder, HMA Mixture, 6"	SY	1462	$70.00	$102,340.00	$-	$-	$-	$-
3	Traffic Control	LS	1	$5,500.00	$5,500.00	$-	$-	$-	$-
4	Flaggers	Each	8	$575.00	$4,600.00	$-	$-	$-	$-
5	Mobilization	LS	1	$25,000.00	$25,000.00	$-	$-	$-	$-
6	Milled Shoulder Rumble Strip, HMA	STA	33	$25.00	$825.00	$-	$-	$-	$-
7	Painted Pavement Markings, 8"	STA	33	$16.00	$528.00	$-	$-	$-	$-
	TOTAL				$141,721.00				$-
	VOLBERDING HILL								
1	Excavation, Class 13	CY	98	$12.00	$1,176.00	$-	$-	$-	$-
2	Paved Shoulder, HMA Mixture, 6"	SY	584	$70.00	$40,880.00	$-	$-	$-	$-
3	Traffic Control	LS	1	$5,500.00	$5,500.00	$-	$-	$-	$-
4	Flaggers	Each	8	$575.00	$4,600.00	$-	$-	$-	$-
5	Mobilization	LS	1	$25,000.00	$25,000.00	$-	$-	$-	$-
6	Milled Shoulder Rumble Strip, HMA	STA	13	$25.00	$325.00	$-	$-	$-	$-
7	Painted Pavement Markings, 8"	STA	13	$16.00	$208.00	$-	$-	$-	$-
	TOTAL				$77,689.00				$-

TOTAL 3 PROJECTS **$345,654.00**

HIGHWAY AND TRANSPORTATION MAP

HUMBOLDT COUNTY

IOWA

Prepared By

Iowa Department of Transportation

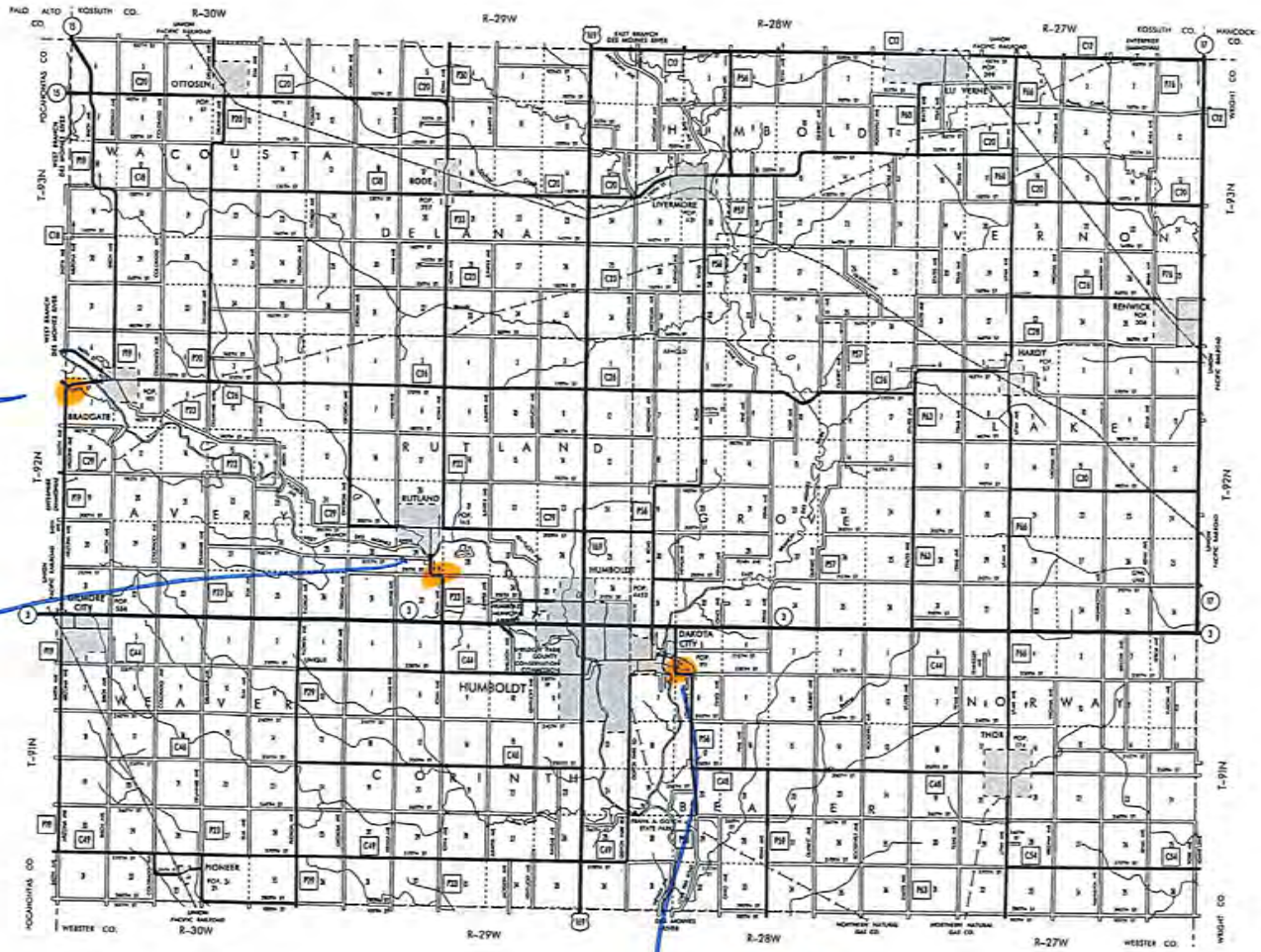
Phone (515) 239-1282

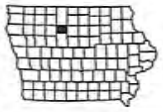
In Cooperation With

United States Department of Transportation

JANUARY 1, 2009

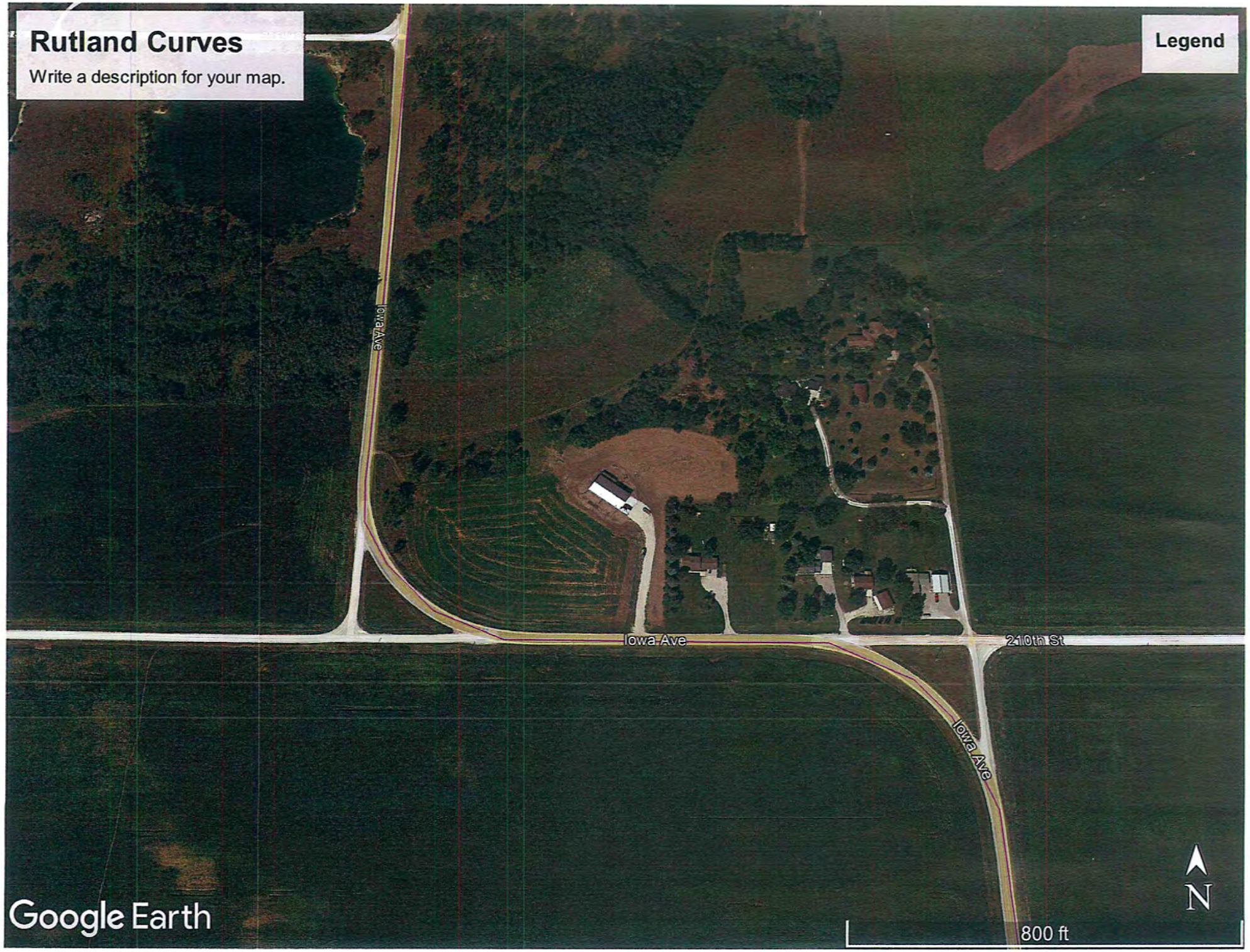
LEGEND

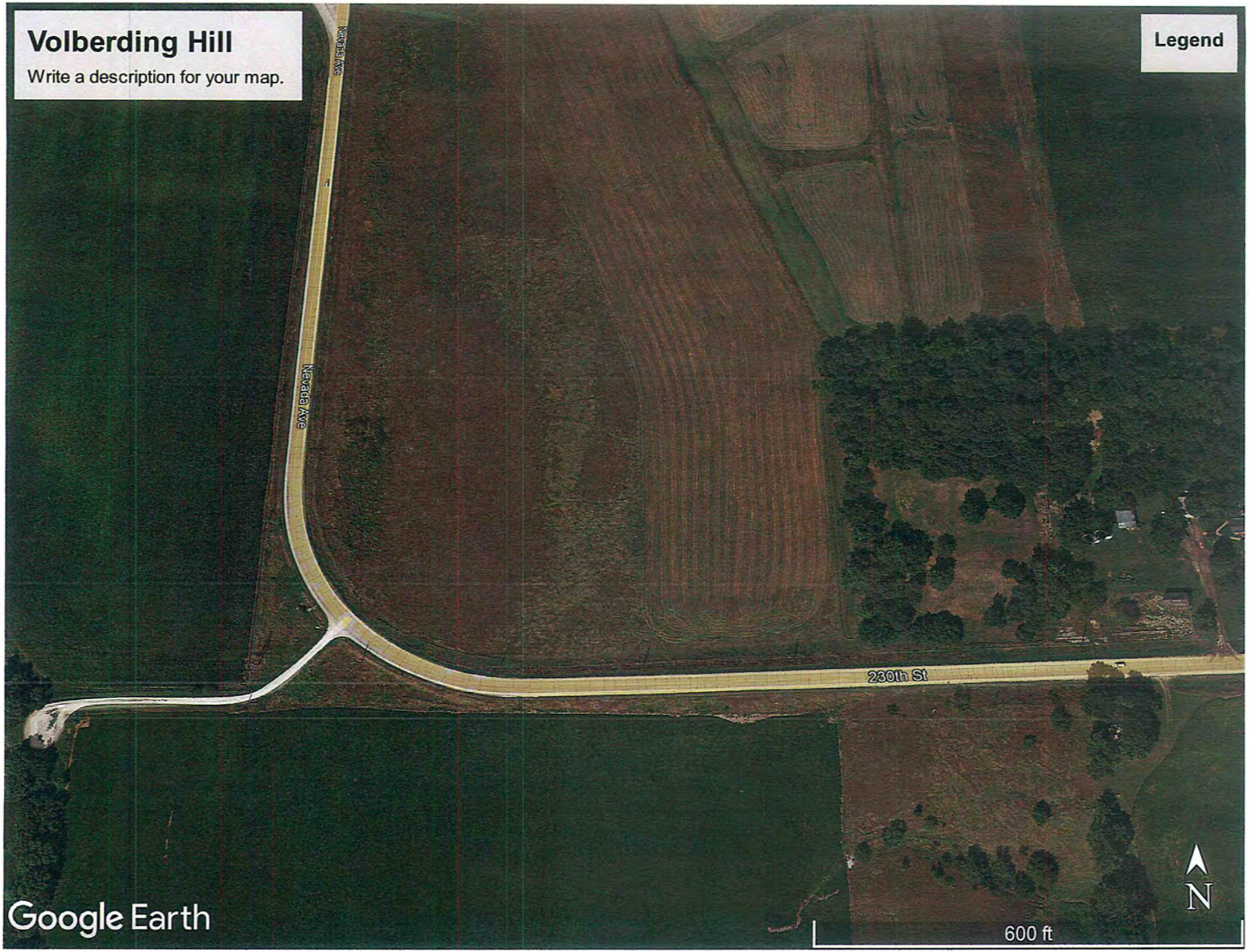




Location

E. Map


Rutland Curves
Write a description for your map.
Legend
Iowa Ave
Iowa Ave
210th St
Iowa Ave
Google Earth
800 ft
N


Volberding Hill
Write a description for your map.
Legend
Nevada Ave
Nevada Ave
230th St
Google Earth
N
600 ft

Avery Hill
Write a description for your map.
Legend
Pilot Creek Rd
Pilot Creek Rd
King St
340th Ave
Google Earth
N
700 ft

I. ICAT

IOWA DOT

Iowa Crash Analysis Tool
Quick Report
2019-2024

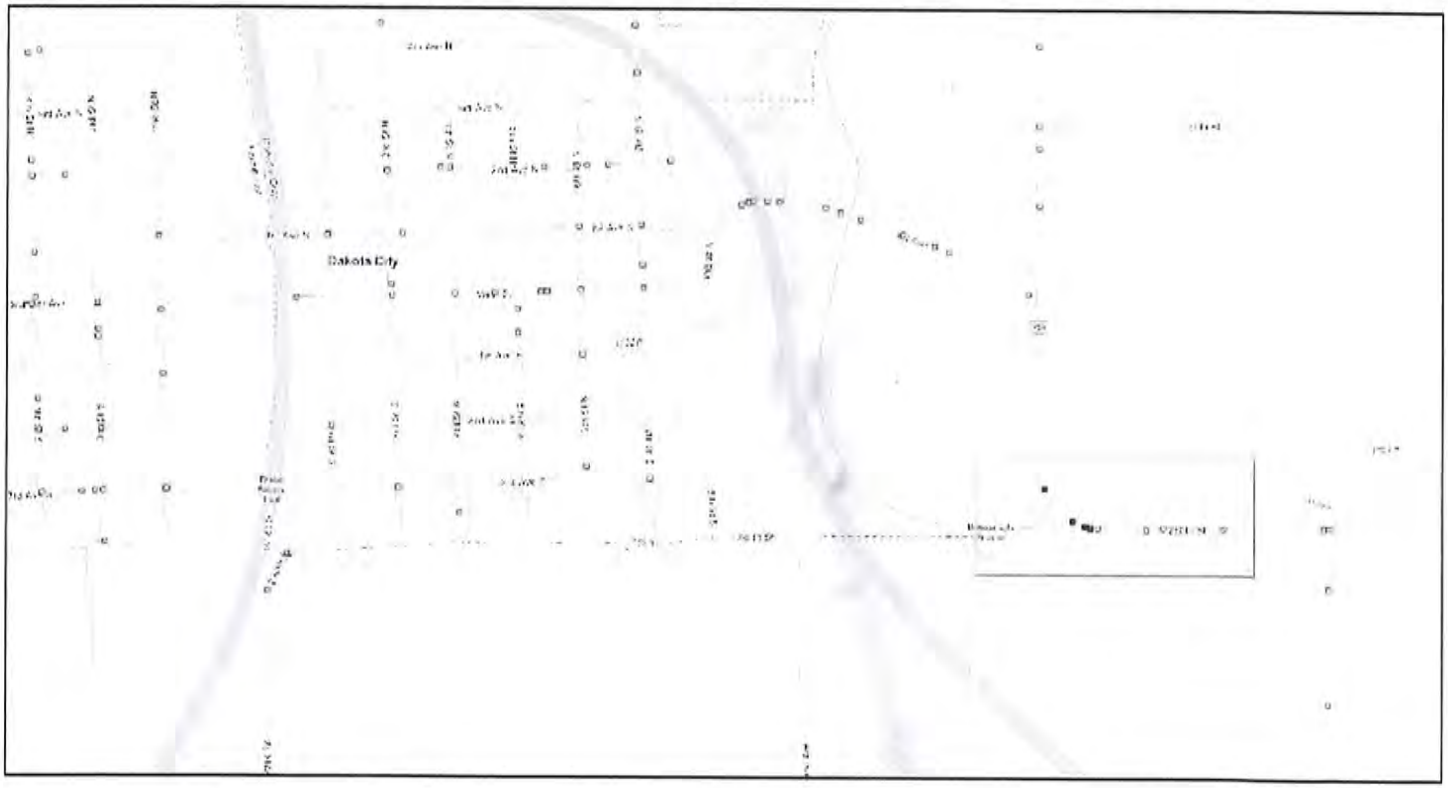
Volberding Hill

Crash Severity	4
Fatal Crash	1
Suspected Serious Injury Crash	2
Suspected Minor Injury Crash	0
Possible/Unknown Injury Crash	1
Property Damage Only	0

Injury Status Summary	5
Fatalities	2
Suspected serious/incapacitating	2
Suspected minor/non-incapacitating	0
Possible (complaint of pain/injury)	1
Uninjured	0
Unknown	0
Not Reported	0

Property/Vehicles/Occupants	
Property Damage Total (dollars):	23,500.00
Average (per crash dollars):	5,875.00
Total Vehicles:	4.00
Average (per crash):	1.00
Total Occupants:	5.00
Average (per crash):	1.25

Average Severity	
Fatalities/Fatal Crash:	2.00
Fatalities/Crash:	0.50
Injuries/Crash:	0.75
Major Injuries/Crash:	0.50
Minor Injuries/Crash:	0.00
Possible/Unknown Injuries/Crash:	0.25



ICAT

IOWA DOT

Iowa Crash Analysis Tool
Quick Report
2019-2024

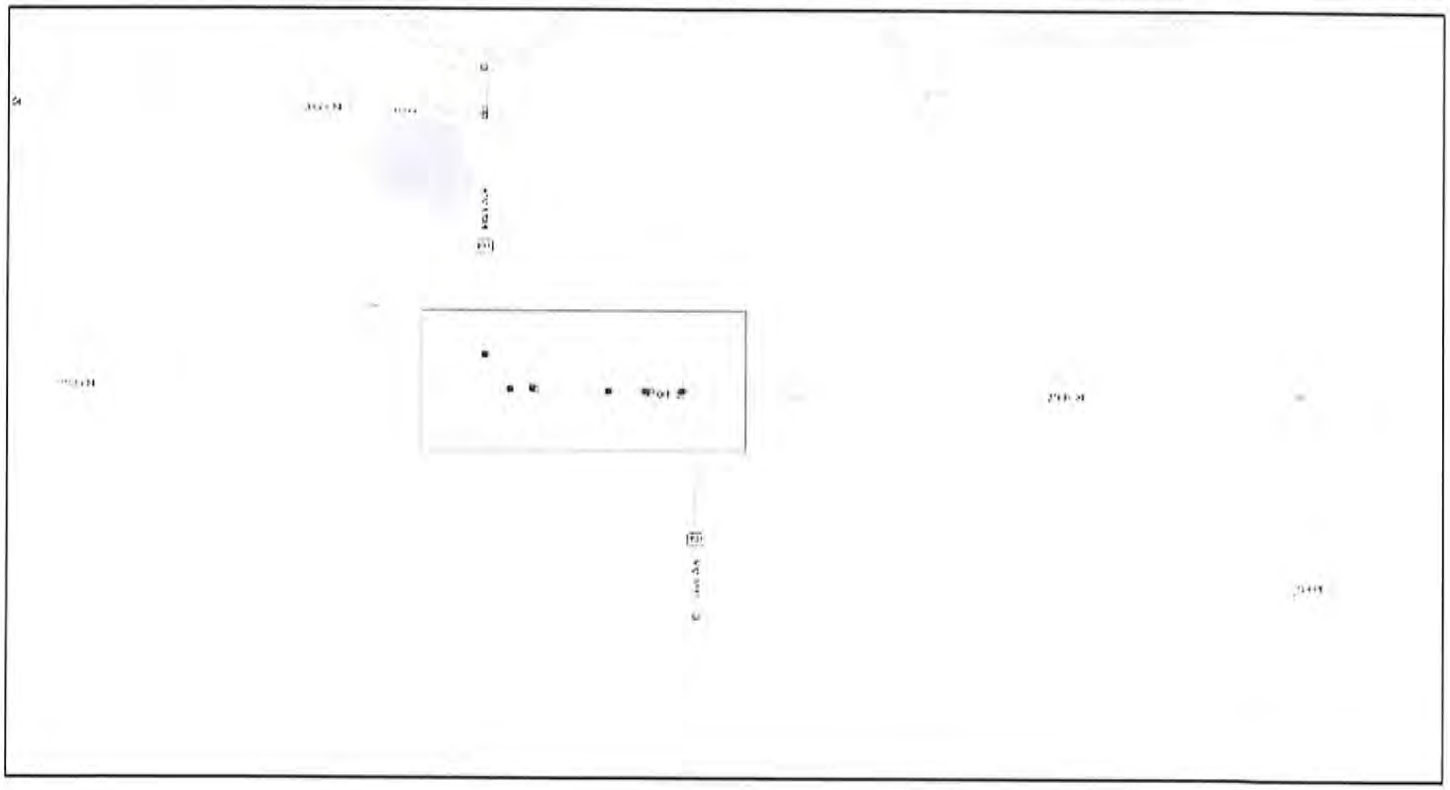
Rutland Curves

Crash Severity	6
Fatal Crash	0
Suspected Serious Injury Crash	1
Suspected Minor Injury Crash	1
Possible/Unknown Injury Crash	1
Property Damage Only	3

Injury Status Summary	6
Fatalities	0
Suspected serious/incapacitating	1
Suspected minor/non-incapacitating	2
Possible (complaint of pain/injury)	1
Uninjured	0
Unknown	0
Not Reported	2

Property/Vehicles/Occupants	
Property Damage Total (dollars):	111,200.00
Average (per crash dollars):	18,533.33
Total Vehicles:	8.00
Average (per crash):	1.33
Total Occupants:	8.00
Average (per crash):	1.33

Average Severity	
Fatalities/Fatal Crash:	0.00
Fatalities/Crash:	0.00
Injuries/Crash:	0.67
Major Injuries/Crash:	0.17
Minor Injuries/Crash:	0.33
Possible/Unknown Injuries/Crash:	0.17



ICAT

IOWA DOT

Iowa Crash Analysis Tool
Quick Report
2019-2024

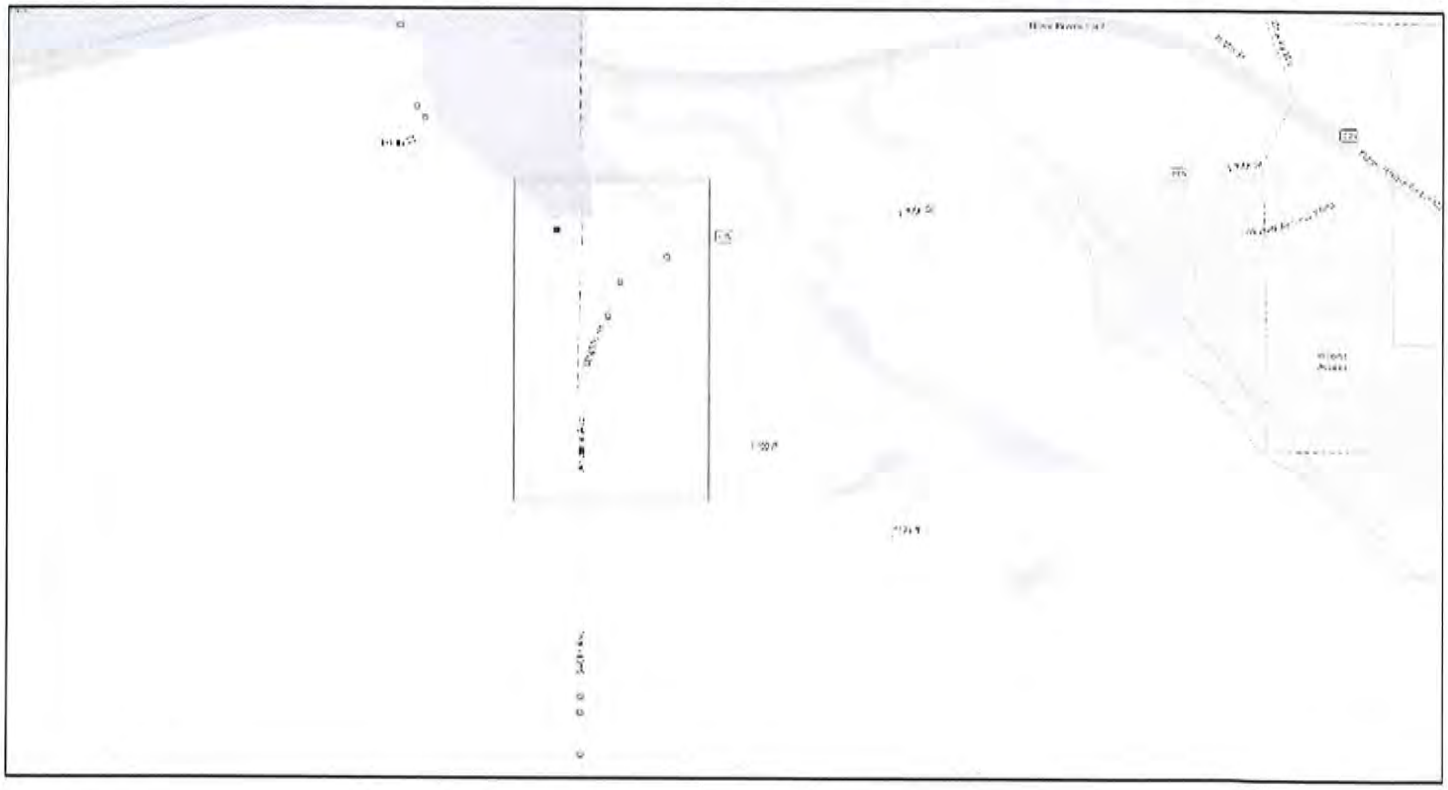
Avery Hill

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

Injury Status Summary	1
Fatalities	0
Suspected serious/incapacitating	0
Suspected minor/non-incapacitating	0
Possible (complaint of pain/injury)	1
Uninjured	0
Unknown	0
Not Reported	0

Property/Vehicles/Occupants	
Property Damage Total (dollars):	11,500.00
Average (per crash dollars):	5,750.00
Total Vehicles:	2.00
Average (per crash):	1.00
Total Occupants:	2.00
Average (per crash):	1.00

Average Severity	
Fatalities/Fatal Crash:	0.00
Fatalities/Crash:	0.00
Injuries/Crash:	0.50
Major Injuries/Crash:	0.00
Minor Injuries/Crash:	0.00
Possible/Unknown Injuries/Crash:	0.50



L.

County:	Humboldt	Prepared By:	Ben Loots
Location:	Volberding Hill	Date Prepared:	8/14/2024
Proposed Improvements:	Paved Shoulders 4', widened pavement markings, rumblestrips		
Estimated Improvement Cost:	$ 77,689		
Inflation on Crash Costs:	4%	Annual Maintenance: (% of Improvement Cost)	2%
Discount Rate:	4%		
Estimated Service Life:	20	Annual Maintenance Cost:	$ 1,554
Method Choice:	CRF Method		

The Crash Reduction Factor (CRF) Method applies one to three CRFs to historical crashes to estimate reductions in future crashes. Crash Modification Factors (CMFs) can be converted to CRFs. For additional information, click the "Learn More" button.

Crash Reduction Factor (CRF) Method

Traffic Growth Factor:	1%
Number of CRFs:	3
Years of Crash History:	5

Combined CRF (Dominant Common Residuals Method)

Iowa DOT's preferred methodology for combining CRFs is Dominant Common Residuals, since it is more conservative than the other options.

	CRF 1:	CRF 2:	CRF 3:	Combined CRF
CRF Value (%)	7	15	4	**20.9**

Crash Severity	Rounded Societal Costs	Crash History (Total):	CRF (from above)	Crash History - Annual Avg	Crashes Saved Annually
Fatal (K)	$ 4,200,000	2	20.9	**0.40**	**0.08**
Serious Injury (A)	$ 4,200,000	2	20.9	**0.40**	**0.08**
Minor Injury (B)	$ 280,000	0	20.9	**0.00**	**0.00**
Possible/Unknown Injury (C)	$ 130,000	1	20.9	**0.20**	**0.04**
Property Damage Only (O)	$ 20,000	0	20.9	**0.00**	**0.00**

Crash Severity	Annual Societal Benefit
Fatal (K)	**$ 351,210**
Serious Injury (A)	**$ 351,210**
Minor Injury (B)	**$ -**
Possible/Unknown Injury (C)	**$ 5,435**
Property Damage Only (O)	**$ -**

Total Benefits and Costs

		Implementation Cost	$ 77,689
		Present Value of Maint.	$ 21,116
Present Value Benefits (Societal Benefits)	$ 10,455,518	Present Value Costs (Impl. and Maint. Costs)	$ 98,805
Present Value Net Return	$ 10,356,712		
Benefit Cost Ratio	**105.82**		

Form continues on next page

County: Humboldt
Location: Volberding Hill

Prepared By: Ben Loots
Date Prepared: 8/14/2024

No Input Necessary - No Custom Values In Use

General Customizations

No change to Crash Costs

No change to Discount Rate

No change to Maintenance Costs

Method-Specific Customizations

No change to Traffic Growth Rate

No change to Crash History

County:	Humboldt	Prepared By:	Ben Loots
Location:	Rutland Curves	Date Prepared:	8/14/2024
Proposed Improvements:	Paved Shoulders 4', widened pavement markings, rumblestrips		
Estimated Improvement Cost:	$ 126,244		
Inflation on Crash Costs:	4%	Annual Maintenance: (% of Improvement Cost)	2%
Discount Rate:	4%		
Estimated Service Life:	20	Annual Maintenance Cost:	$ 2,525
Method Choice:	CRF Method		

The Crash Reduction Factor (CRF) Method applies one to three CRFs to historical crashes to estimate reductions in future crashes. Crash Modification Factors (CMFs) can be converted to CRFs. For additional information, click the "Learn More" button.

Crash Reduction Factor (CRF) Method

Traffic Growth Factor:	1%
Number of CRFs:	3
Years of Crash History:	5

Combined CRF (Dominant Common Residuals Method)

Iowa DOT's preferred methodology for combining CRFs is Dominant Common Residuals, since it is more conservative than the other options.

	CRF 1:	CRF 2:	CRF 3:	Combined CRF
CRF Value (%)	7	15	4	**20.9**

Crash Severity	Rounded Societal Costs	Crash History (Total):	CRF (from above)	Crash History - Annual Avg	Crashes Saved Annually
Fatal (K)	$ 4,200,000	0	20.9	**0.00**	**0.00**
Serious Injury (A)	$ 4,200,000	1	20.9	**0.20**	**0.04**
Minor Injury (B)	$ 280,000	2	20.9	**0.40**	**0.08**
Possible/Unknown Injury (C)	$ 130,000	1	20.9	**0.20**	**0.04**
Property Damage Only (O)	$ 20,000	2	20.9	**0.40**	**0.08**

Crash Severity	Annual Societal Benefit
Fatal (K)	**$ -**
Serious Injury (A)	**$ 175,605**
Minor Injury (B)	**$ 23,414**
Possible/Unknown Injury (C)	**$ 5,435**
Property Damage Only (O)	**$ 1,672**

Total Benefits and Costs

		Implementation Cost	$ 126,244
		Present Value of Maint.	$ 34,314
Present Value Benefits (Societal Benefits)	$ 3,044,637	Present Value Costs (Impl. and Maint. Costs)	$ 160,558
Present Value Net Return	$ 2,884,079		
Benefit Cost Ratio	**18.96**		

Form continues on next page

County: Humboldt
Location: Rutland Curves

Prepared By: Ben Loots
Date Prepared: 8/14/2024

No Input Necessary - No Custom Values In Use

General Customizations

No change to Crash Costs

No change to Discount Rate

No change to Maintenance Costs

Method-Specific Customizations

No change to Traffic Growth Rate

No change to Crash History

County:	Humboldt	Prepared By:	Ben Loots
Location:	Avery Hill	Date Prepared:	8/14/2024
Proposed Improvements:	Paved Shoulders 4', widened pavement markings, rumblestrips		
Estimated Improvement Cost:	$ 141,721		
Inflation on Crash Costs:	4%	Annual Maintenance: (% of Improvement Cost)	2%
Discount Rate:	4%		
Estimated Service Life:	20	Annual Maintenance Cost:	$ 2,834
Method Choice:	CRF Method		

The Crash Reduction Factor (CRF) Method applies one to three CRFs to historical crashes to estimate reductions in future crashes. Crash Modification Factors (CMFs) can be converted to CRFs. For additional information, click the "Learn More" button.

Crash Reduction Factor (CRF) Method

Traffic Growth Factor:	1%
Number of CRFs:	3
Years of Crash History:	5

Combined CRF (Dominant Common Residuals Method)

Iowa DOT's preferred methodology for combining CRFs is Dominant Common Residuals, since it is more conservative than the other options.

	CRF 1:	CRF 2:	CRF 3:	Combined CRF
CRF Value (%)	7	15	4	**20.9**

Crash Severity	Rounded Societal Costs	Crash History (Total):	CRF (from above)	Crash History - Annual Avg	Crashes Saved Annually
Fatal (K)	$ 4,200,000	0	20.9	**0.00**	**0.00**
Serious Injury (A)	$ 4,200,000	0	20.9	**0.00**	**0.00**
Minor Injury (B)	$ 280,000	0	20.9	**0.00**	**0.00**
Possible/Unknown Injury (C)	$ 130,000	1	20.9	**0.20**	**0.04**
Property Damage Only (O)	$ 20,000	1	20.9	**0.20**	**0.04**

Crash Severity	Annual Societal Benefit
Fatal (K)	**$ -**
Serious Injury (A)	**$ -**
Minor Injury (B)	**$ -**
Possible/Unknown Injury (C)	**$ 5,435**
Property Damage Only (O)	**$ 836**

Total Benefits and Costs

		Implementation Cost	$ 141,721
		Present Value of Maint.	$ 38,521
Present Value Benefits (Societal Benefits)	$ 92,636	Present Value Costs (Impl. and Maint. Costs)	$ 180,242
Present Value Net Return	$ (87,606)		
Benefit Cost Ratio	**0.51**		

Form continues on next page

County: Humboldt
Location: Avery Hill

Prepared By: Ben Loots
Date Prepared: 8/14/2024

No Input Necessary - No Custom Values In Use

General Customizations

No change to Crash Costs

No change to Discount Rate

No change to Maintenance Costs

Method-Specific Customizations

No change to Traffic Growth Rate

No change to Crash History

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

SITE-SPECIFIC

110TH STREET IMPROVEMENTS

FY 2026

Rev. 07/23

Application for SITE-SPECIFIC TSIP FUNDS

GENERAL INFORMATION **DATE:** August 15, 2024

Location / Title of Project 110th Street Improvements

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 (Area Code) E-Mail engineer@jeffersoncountyia.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	$	222,986
Total Project Cost	$	2,604,322.67
Safety Funds Requested	**$**	**222,986**

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/

Intersection ID (1234567890) or Segment ID (1234)	Intersection or Segment	PCR Level High	PCR Level Medium	PCR-All value	PCR-Severe value
110TH STREET FROM PACKWOOD ROAD TO 850' WEST OF BUTTERNUT AVENUE	. This route is the main road between Packwood and Pekin School. These improvements will encourage the use of 110th to reach the school. This will reduce the traffic on the alternate route of Butternut Avenue, reducing instances of conflict at the intersection of the two routes.	☐	☐		
	Edge and Centerline Rumble Strips	☐	☐		
	Paved Shoulders				
	6 inch Pavement Marks instead of 4 inch.				

B. NARRATIVE

STP-S-C051(96)—5E-51
PROJECT SAFETY NARRATIVE

Pekin School district is a rural school in northwest Jefferson County Iowa. A majority of the students who attend Pekin school live in and around Packwood Iowa. There is no paved route in Jefferson County between Pekin school and the town of Packwood. We propose to improve 110th Avenue to provide a safe, paved route for the students. Four-foot paved shoulders, center and edge-line rumble strips as well as six-inch painted pavement markings will be installed to reduce the incidence of lane departure accidents.

1. All bridges and culverts within the recommended clear zone distance, as per I.M. 3.240, Clear Zone Guidelines, which are not presently shielded should be reviewed according to I.M. 3.230, Traffic Barriers (Guardrail and Bridge Barrier Rail). If culverts need to be extended for reasons other than safety (e.g., lane widening), consideration should be given to extending them outside the recommended clear zone distance or made safely traversable. Document this consideration by describing how bridges and culverts will be addressed. There are 5 box culverts within the clear zone. These structures will have guardrail installed.

2. All signing and marking should be in conformance with the Manual on Uniform Traffic Control Devices (MUTCD). Document this consideration by stating the signs and markings were reviewed. If any signing or marking is found not to be in conformance with the MUTCD, identify what improvements or upgrades will be made. New signage will be installed where necessary and the speed limit will be set to 45 mph.

3. The last 5-year crash history should be analyzed with respect to number, rate, location, type, and severity in order to identify areas that offer the greatest potential for safety enhancements. Document this consideration by providing a summary of the crash history analysis, including a copy of the crash data printout. Crash data and analysis tools are available on the Iowa DOT Traffic and Safety Bureau Iowa Crash Analysis Tool web page. There have been 4 reported crashes in the past 10 years with 1 fatality.
1 rear-end, 1 lost control and 2 run of the road
Improving the road surface from crushed aggregate to a pavement with lane departure warning features may help to reduce the incidence of lane departure.

4. If the project is located on a rural roadway, "Use as constructed" (U.A.C.) of bridges narrower than the approach pavement width will require a design exception. Additional guidance for this type of design exception is provided in I.M. 3.260, Design Exception Process. If approved, the guardrail should be erected, delineated with reflectors, and an edge line extending 300 feet from all 4 corners should be painted. This is in addition to the narrow bridge signs. Document this consideration by stating whether existing bridges comply with this requirement. If any bridges do not comply with this requirement, reference the prior design exception approval or include the design exception request information, as outlined by I.M. 3.260. Also state the proposed mitigation, as indicated above. There are no structures narrower than the proposed road top.

5. Bridge rails and guardrails on existing bridges should be reviewed for structural adequacy. If found to be structurally inadequate and functionally obsolete such that it cannot adequately contain and redirect vehicles without snagging, penetrating, or vaulting, it should be considered for upgrading. For additional guidance, refer to I.M. 3.230, Traffic Barriers (Guardrail and Bridge Barrier Rail). Document this consideration by stating whether the existing bridge rails and approach guard rails will be left in place, delineated, retrofitted, or replaced. NA

6. All horizontal curves with recommended speeds less than the speed limit should be signed with curve or turn signs and advisory speed plates. Intersections or narrow bridges, which exist within the stopping sight distance of a crest vertical curve, should be signed accordingly. Document this consideration by indicating if advisory speed plates or other warning signs will be installed, and if so, the type of signs and general locations where they will be installed. NA

7. Obstacles within the recommended clear zone distance, as per I.M. 3.240, Clear Zone Guidelines, except for bridges and culverts, should be reviewed for both rural and urban projects, as indicated below. Bridges and culverts should be addressed as per Safety Considerations 1, 4, and 5 above. There are no other obstacles within the clear zone.

C. ITEMIZED BREAKDOWN OF COST

110th Ave.

ESTIMATE OF QUANTITIES AND SAFETY COSTS

Line Num	Item Number	Description	Units	Quantity	Price	Extended Amount	Safety Quantity	Safety Amount
1	2116-0000100	FULL DEPTH RECLAMATION	SY	68270	$ 6.18	$ 421,908.60	0	$ -
2	2116-0000300	MINERAL STABILIZING AGENT	TON	2100	$ 200.00	$ 420,000.00	0	$ -
3	2121-7425020	GRANULAR SHOULDERS, TYPE B	TON	1500	$ 35.00	$ 52,500.00	0	$ -
4	2210-0475105	CHOKE STONE BASE	TON	7510	$ 40.00	$ 300,400.00	998.83	$ 39,953.20
5	2303-1031500	HOT MIX ASPHALT STANDARD TRAFFIC, BASE COURSE, 1	TON	10000	$ 45.00	$ 450,000.00	1330	$ 59,850.00
6	2303-1033500	HOT MIX ASPHALT STANDARD TRAFFIC, SURFACE COUR	TON	4841	$ 45.00	$ 217,845.00	643.853	$ 28,973.39
7	2303-1258283	ASPHALT BINDER, PG 58-28S, STANDARD TRAFFIC	TON	600	$ 650.00	$ 390,000.00	79.8	$ 51,870.00
8	2303-1264223	ASPHALT BINDER, PG 64-22S, STANDARD TRAFFIC	TON	290	$ 650.00	$ 188,500.00	38.57	$ 25,070.50
9	2303-6911000	HOT MIX ASPHALT PAVEMENT SAMPLES	LS	1	$ 2,000.00	$ 2,000.00	0	$ -
10	2505-4008300	STEEL BEAM GUARDRAIL	LF	700	$ 29.00	$ 20,300.00	0	$ -
11	2505-4021030	STEEL BEAM GUARDRAIL END ANCHOR, THRIE BEAM	EACH	28	$ 3,500.00	$ 98,000.00	0	$ -
12	2524-9100010	OBJECT MARKER, TYPE 1	EACH	30	$ 150.00	$ 4,500.00	0	$ -
13	2527-9263209	PAINTED PAVEMENT MARKINGS, WATERBORNE OR SOL	STA	955	$ 44.83	$ 42,812.65	315.15	$ 14,128.17
14	2528-2518000	SAFETY CLOSURE	EACH	9	$ 200.00	$ 1,800.00	0	$ -
15	2528-8445110	TRAFFIC CONTROL	LS	1	$ 15,000.00	$ 15,000.00	0	$ -
16	2528-8445113	FLAGGERS	EACH	110	$ 515.00	$ 56,650.00	0	$ -
17	2528-8445115	PILOT CARS	EACH	30	$ 770.00	$ 23,100.00	0	$ -
18	2533-4980005	MOBILIZATION	LS	1	$ 300,000.00	$ 300,000.00	0	$ -
19	2548-0000100	MILLED SHOULDER RUMBLE STRIPS, HMA SURFACE	STA	410	$ 25.00	$ 10,250.00	410	$ 10,250.00
20	2548-0000110	ASPHALT EMULSION FOR FOG SEAL (SHOULDER RUMBLI	GAL	3600	$ 9.00	$ 32,400.00	3600	$ 32,400.00
21	2548-0000310	MILLED CENTERUNE RUMBLE STRIPS, HMA SURFACE	STA	410	$ 25.00	$ 10,250.00	410	$ 10,250.00
					TOTAL	$ 3,058,216.25		$ 272,745.26

D. TIME SCHEDULE

August 15, 2024 TSIP application due.

Late Fall Early Winter Notice of Award 2024 Federal Community Project Grants

January, 2025 TSIP Notice of Award

July 15, 2025 Project Letting through I.D.O.T.

June, 2026 Projected constrnction.

County:	JEFFERSON	Prepared By:	DeWayne Heintz
Location:	110TH AVE	Date Prepared:	7/31/2024
Proposed Improvements:	4 foot Paved ShouldersRS-30; Center and Edgeline Rumble Strips RS-12; 6" Painted Pavement Markings RS-02		
Estimated Improvement Cost:	$ 272,745		
Inflation on Crash Costs:	4%	Annual Maintenance: (% of Improvement Cost)	2%
Discount Rate:	4%		
Estimated Service Life:	20	Annual Maintenance Cost:	$ 5,455
Method Choice:	CRF Method		

The Crash Reduction Factor (CRF) Method applies one to three CRFs to historical crashes to estimate reductions in future crashes. Crash Modification Factors (CMFs) can be converted to CRFs. For additional information, click the "Learn More" button.

Crash Reduction Factor (CRF) Method

Traffic Growth Factor:	1%
Number of CRFs:	3
Years of Crash History:	10

Combined CRF (Dominant Common Residuals Method)

Iowa DOT's preferred methodology for combining CRFs is Dominant Common Residuals, since it is more conservative than the other options.

	CRF 1:	CRF 2:	CRF 3:	Combined CRF
CRF Value (%)	20	4	7	**23.6**

Crash Severity	Rounded Societal Costs	Crash History (Total):	CRF (from above)	Crash History - Annual Avg	Crashes Saved Annually
Fatal (K)	$ 4,200,000	1	23.6	**0.10**	**0.02**
Serious Injury (A)	$ 4,200,000	0	23.6	**0.00**	**0.00**
Minor Injury (B)	$ 280,000	1	23.6	**0.10**	**0.02**
Possible/Unknown Injury (C)	$ 130,000	0	23.6	**0.00**	**0.00**
Property Damage Only (O)	$ 20,000	2	23.6	**0.20**	**0.05**

Crash Severity	Annual Societal Benefit
Fatal (K)	**$ 99,133**
Serious Injury (A)	**$ -**
Minor Injury (B)	**$ 6,609**
Possible/Unknown Injury (C)	**$ -**
Property Damage Only (O)	**$ 944**

Total Benefits and Costs

		Implementation Cost	$ 272,745
		Present Value of Maint.	$ 74,134
Present Value Benefits (Societal Benefits)	$ 1,575,832	**Present Value Costs (Impl. and Maint. Costs)**	$ 346,879
Present Value Net Return	$ 1,228,954		
Benefit Cost Ratio	**4.54**		

Form continues on next page

County: JEFFERSON
Location: 110TH AVE

Prepared By: DeWayne Heintz
Date Prepared: 7/31/2024

User Input Required - Custom Values Used

General Customizations

No change to Crash Costs

No change to Discount Rate

No change to Maintenance Costs

Method-Specific Customizations

No change to Traffic Growth Rate

Justification for deviation from default Crash History: This is a low voulme road so the time frame is expanded to have representative values.

Rev. 07/23

RESOLUTION NO. 240805-1

APPROVAL OF TRAFFIC SAFETY IMPROVEMENT PROGRAM APPLICATION FOR SITE SPECIFIC SAFETY IMPROVEMENTS

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 site specific features will aid in improving the safety of travelling public using 110th Street; and

WHEREAS, paved shoulders, center and edge line rumble strips and 6" wide pavement markings reduce crash incidence.

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 safety measures.

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 traffic safety measures.
3. Authorize the Board of Supervisors Chair to Sign application and supporting document in relation to the TSIP funding.

Dated the ~~15th~~ 5th Day of August ~~2023~~ 2024 ROLL CALL VOTE

	AYE	NAY	ABSTAIN	ABSENT
Suzie Drish, Chair				
Dee Sandquist				
Lee Dimmit				

ATTEST: _____

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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.

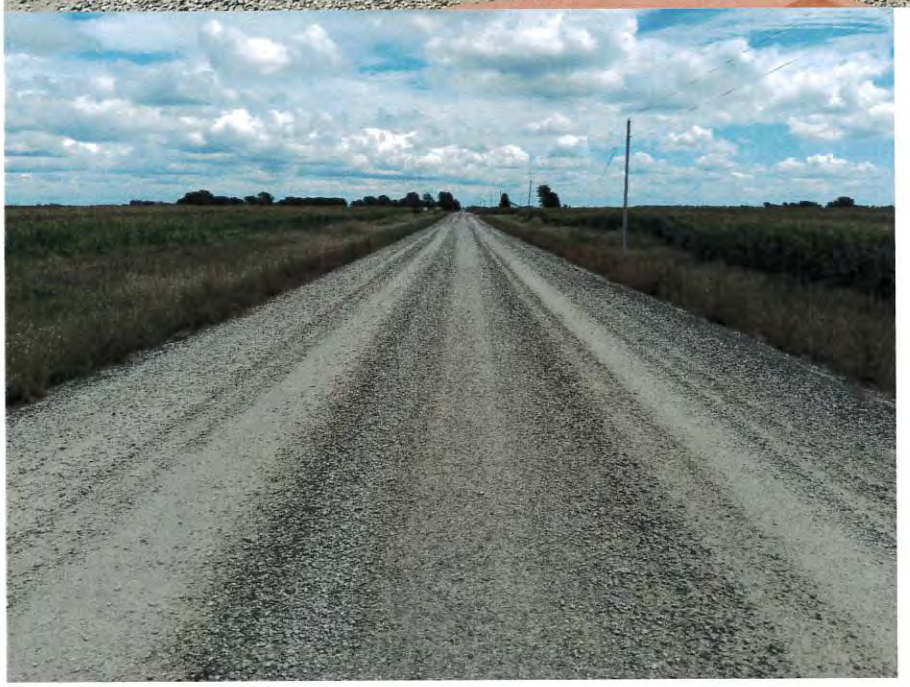
Representing the JEFFERSON COUNTY BOARD OF SUPERVISORS

Signed: _____ 8/5/2024
Signature — Date Signed

Dee Sandquist
Printed Name

Attest: _____ 8/6/24
Signature — Date Signed

Just Renetter
Printed Name



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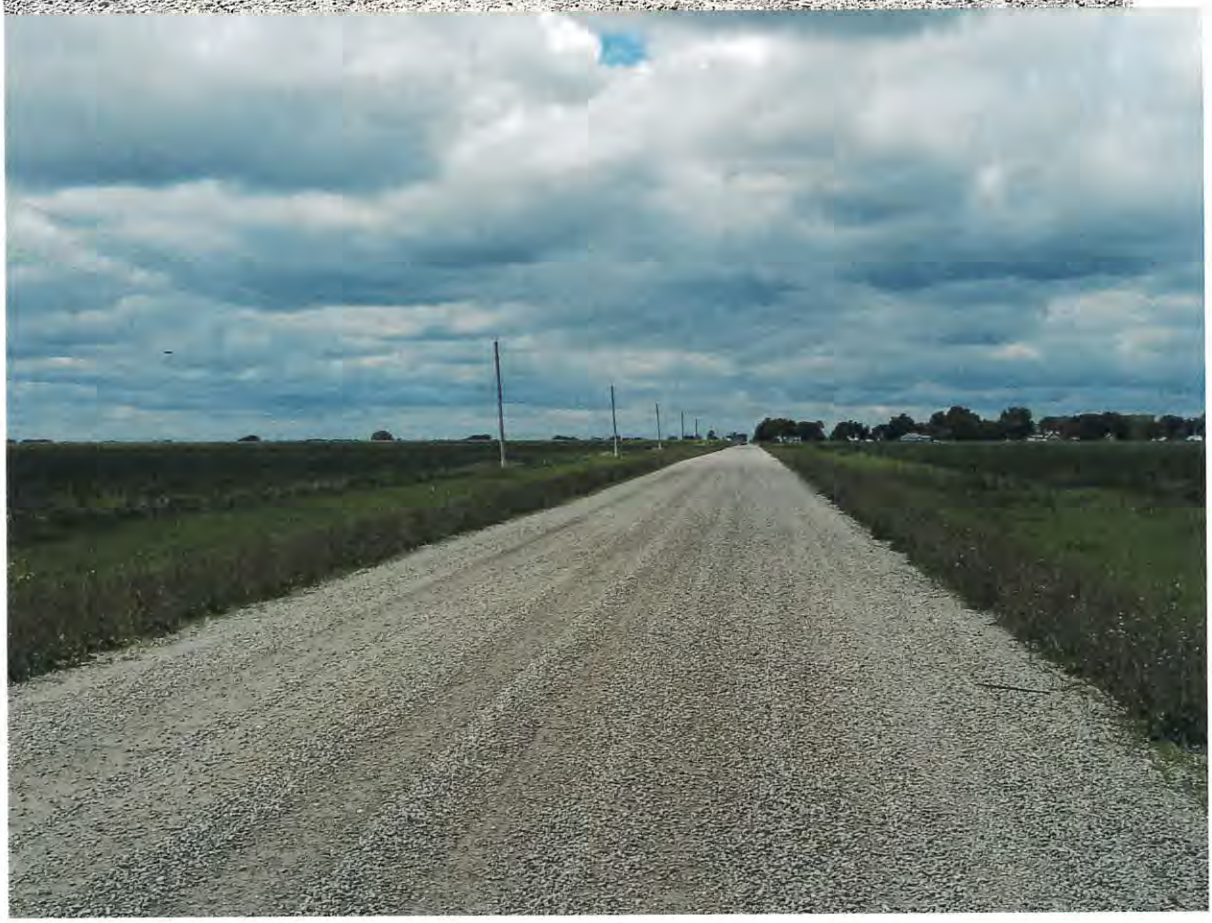

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JEFFERSON COUNTY SECONDARY ROADS
901 North 8th Street
P.O.Box 817
Fairfield, Iowa 52556

JEFFERSON COUNTY

TRAFFIC SAFETY IMPROVEMENT PROGRAM APPLICATION

SITE-SPECIFIC

Route H43 (Libertyville Road) Rehabilitation

FY 2026

Rev. 07/23

Application for SITE-SPECIFIC TSIP FUNDS

GENERAL INFORMATION **DATE:** August 15, 2024

Location / Title of Project H43(Libertyville Road) Pavement Rehabilitation

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 (Area Code) E-Mail engineer@jeffersoncountyia.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	$	725,312
Total Project Cost	$	4,856,325
Safety Funds Requested	**$**	**500,000**

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/

Intersection ID (1234567890) or Segment ID (1234)	Intersection or Segment	PCR Level High	PCR Level Medium	PCR-All value	PCR-Severe value
11329	FROM V64 EAST TO URBAN SECTION EAST OF KEY AVENUE 3,048 of 15,069	☐	☐		1334
11328	3,0110 of 15,069	☐	x☐		2068
11327	437 or 15,069		x		10582
11325	1260 of 15069		x		729

B. NARRATIVE

HDP-C051(89)—6B-51
PROJECT SAFETY NARRATIVE
COUNTY ROUTE H43 REHABILITATION/SAFETY ADDITIONS:

PROJECT DESCRIPTION:

Jefferson County, in southeast Iowa, had a population of 15,600 in 2020. Fairfield, population of 9,400, is the County Seat. Libertyville, a city of approximately 230 people, is 4 miles southwest of Fairfield. Many of the residents work in Fairfield. There are large grain farms and livestock operations in this area. Farmer's Cooperative Association Grain/Vision Agriculture provide grain storage/transfer service and supply feed to area farmers. Route H43 is the main route from Libertyville, southeast Jefferson County and western VanBuren County to Fairfield. This makes Route H43 a key part in the economic framework of Jefferson County. Libertyville has a small business district anchored by the home branch of Libertyville Savings Bank. Peck's Pub, the Dew Drop and Libertyville G&G provide restaurant service to the town. Fiedler Heating and Cooling services Fairfield and the surrounding area. County Road H43 is a Major Rural Collector carrying approximately 800 vehicles per day. The Route connects Libertyville to Fairfield and Iowa Highway 1. The local hospital, Jefferson County Health Center (JCHC), is located at the corner of H43 and Highway 1. JCHC services Jefferson County and northern VanBuren County. H43 is the most direct route to JCHC from SW Jefferson County and NW VanBuren County.

Our proposal to rehabilitate this pavement will begin with the existing PCC pavement as the base. The shoulders adjacent to the pavement will be excavated to a depth of twelve inches. A drainable stone base will be placed to provide support for the paved shoulders as well as allowing moisture to drain from under the existing PCC. Keeping the base structure water-free will improve the longevity of the pavement system. The D-cracked transverse joints in H43 will have partial depth asphalt patches installed to inhibit further deterioration. Full depth asphalt patches will be constructed at deteriorated joints every 1,000 to 1,200 feet to provide stress relief in the underlying PCC pavement. This will keep the pavement from heaving beneath the proposed overlay. The full depth patches will include drainable granular base connected to the shoulder system for added moisture mitigation. A three-inch nominal thickness crushed lime-stone interlayer will be placed on the PCC pavement to inhibit reflective cracking while providing a uniform platform to support the upper layers of the pavement. This stone interlayer will also be used to correct the crown to a uniform 3 percent. This technique has been used in Iowa since the early 1990's with great results. A two-inch asphalt intermediate course will be placed on this stone base. This system builds on the existing structure of the road instead of removing pavement to start from scratch, conserving valuable resources. The specifications will allow for up to 30% binder replacement in the asphalt mix encouraging use of recycled materials. Iowa D.O.T. specifications pay the contractor for the binder in the recycle material which encourages the contractor to use the maximum allowable recycled material in the pavement mix. A one and one-half inch, high-performance, high-skid resistant asphalt surface will be placed as the surface. This material uses a highly polymerized asphalt binder, with 90% elastic recovery, to resist rutting and cracking. This material has not been used in Jefferson County prior to this but has been used successfully by the Iowa Department of Transportation and other local public agencies.

The existing four-foot wide crushed-stone shoulders will be graded for installation of new three- and one-half-inch asphalt pavement with "safety-edge". The paved shoulders will help to make this route more bicycle friendly as well as reducing incidence of tires dropping off the pavement-edge resulting over-correction into oncoming traffic. This will provide safe alternate vehicle(bicycle) access between the city of Libertyville and Fairfield.

1. All bridges and culverts within the recommended clear zone distance, as per I.M. 3.240, Clear Zone Guidelines, which are not presently shielded should be reviewed according to I.M. 3.230, Traffic Barriers (Guardrail and Bridge Barrier Rail). If culverts need to be extended for reasons other than safety (e.g., lane widening), consideration should be given to extending them outside the recommended clear zone distance or made safely traversable. Document this consideration by describing how bridges and culverts will be addressed. There are 5 box culverts within the clear zone. These structures will have cable guardrail installed.

2. All signing and marking should be in conformance with the Manual on Uniform Traffic Control Devices (MUTCD). Document this consideration by stating the signs and markings were reviewed. If any signing or marking is found not to be in conformance with the MUTCD, identify what improvements or upgrades will be made. New signage will be installed where necessary.

3. The last 5-year crash history should be analyzed with respect to number, rate, location, type, and severity in order to identify areas that offer the greatest potential for safety enhancements. Document this consideration by providing a summary of the crash history analysis, including a copy of the crash data printout. Crash data and analysis tools are available on the Iowa DOT Traffic and Safety Bureau Iowa Crash Analysis Tool web page. There have been 24 reported crashes in the past 5 years with 1 fatality.
3 Serious injury accidents 2 unknown or minor injury crashes and 18 property damage only.
5 of the total were animal related. The remaining 19 accidents were one form of driver error or another. The proposed safety improvements will add additional pavement for driver recovery, audible and tactile warning as well as improved friction surface to mitigate the severity of driver error.

4. If the project is located on a rural roadway, "Use as constructed" (U.A.C.) of bridges narrower than the approach pavement width will require a design exception. Additional guidance for this type of design exception is provided in I.M. 3.260, Design Exception Process. If approved, the guardrail should be erected, delineated with reflectors, and an edge line extending 300 feet from all 4 corners should be painted. This is in addition to the narrow bridge signs. Document this consideration by stating whether existing bridges comply with this requirement. If any bridges do not comply with this requirement, reference the prior design exception approval or include the design exception request information, as outlined by I.M. 3.260. Also state the proposed mitigation, as indicated above. There are no structures narrower than the proposed road top.

5. Bridge rails and guardrails on existing bridges should be reviewed for structural adequacy. If found to be structurally inadequate and functionally obsolete such that it cannot adequately contain and redirect vehicles without snagging, penetrating, or vaulting, it should be considered for upgrading. For additional guidance, refer to I.M. 3.230, Traffic Barriers (Guardrail and Bridge Barrier Rail). Document this consideration by stating whether the existing bridge rails and approach guard rails will be left in place, delineated, retrofitted, or replaced. NA

6. All horizontal curves with recommended speeds less than the speed limit should be signed with curve or turn signs and advisory speed plates. Intersections or narrow bridges, which exist within the stopping sight distance of a crest vertical curve, should be signed accordingly. Document this consideration by indicating if advisory speed plates or other warning signs will be installed, and if so, the type of signs and general locations where they will be installed. NA

7. Obstacles within the recommended clear zone distance, as per I.M. 3.240, Clear Zone Guidelines, except for bridges and culverts, should be reviewed for both rural and urban projects, as indicated below. Bridges and culverts should be addressed as per Safety Considerations 1, 4, and 5 above. There are no other obstacles within the clear zone.

C. ITEMIZED BREAKDOWN OF COST

Item Number	Description	Units	Quantity	Estimate	Extended Price	SAFETY QUANTITY	
2102-2713070	EXCAVATION, CLASS 13, ROADWAY AND BORROW	CY	6700	$ 25.00	$ 167,500.00	3350	$ 83,750.00
2210-0475105	CHOKE STONE BASE	TON	11000	$ 35.00	$ 385,000.00	1110	$ 38,850.00
2210-0475290	MACADAM STONE BASE	TON	11500	$ 30.00	$ 345,000.00	5750	$ 172,500.00
2212-5070310	PATCHES, FULL-DEPTH REPAIR	SY	4400	$ 175.00	$ 770,000.00	0	$ -
2212-5070322	PATCHES, PARTIAL-DEPTH REPAIR, HOT MIX ASPHALT	SY	1000	$ 100.00	$ 100,000.00	0	$ -
2212-5070330	PATCHES BY COUNT (REPAIR)	EACH	100	$ 300.00	$ 30,000.00	0	$ -
2213-7100400	RELOCATION OF MAIL BOXES	EACH	50	$ 250.00	$ 12,500.00	0	$ -
2303-0003380	HOT MIX ASPHALT MIXTURE THIN LIFT SURFACE COURSE, 3/8 IN. MIX	TON	3200	$ 70.00	$ 224,000.00	0	$ -
2303-1031500	HOT MIX ASPHALT STANDARD TRAFFIC, BASE COURSE, 1/2 IN. MIX	TON	12350	$ 60.00	$ 741,000.00	2081.2	$ 124,872.00
2303-1258283	ASPHALT BINDER, PG 58-28S, STANDARD TRAFFIC	TON	745	$ 600.00	$ 447,000.00	124.9	$ 74,940.00
2303-1258347	ASPHALT BINDER, PG 58-34E+, EXTREMELY HIGH TRAFFIC, 90% ELASTIC RECOVERY	TON	256	$ 800.00	$ 204,800.00	0	$ -
2502-8212034	SUBDRAIN, LONGITUDINAL, (SHOULDER) 4 IN. DIA.	LF	45000	$ 11.00	$ 495,000.00	0	$ -
2502-8221306	SUBDRAIN OUTLET, DR-306	EACH	150	$ 400.00	$ 60,000.00	0	$ -
2507-3250005	ENGINEERING FABRIC	SY	32700	$ 4.00	$ 130,800.00	16350	$ 65,400.00
2527-9263209	PAINTED PAVEMENT MARKINGS, WATERBORNE OR SOLVENT-BASED	STA	650	$ 125.00	$ 81,250.00	0	$ -
2528-8445110	TRAFFIC CONTROL	LS	1	$ 25,000.00	$ 25,000.00	0	$ -
2528-8445113	FLAGGERS	EACH	185	$ 515.00	$ 95,275.00	0	$ -
2528-8445115	PILOT CARS	EACH	60	$ 770.00	$ 46,200.00	0	$ -
2529-8174010	SUBBASE (PATCHES)	SY	1200	$ 30.00	$ 36,000.00	0	$ -
2530-0400061	HOT MIX ASPHALT (PARTIAL DEPTH PATCH MATERIAL)	TON	200	$ 225.00	$ 45,000.00	0	$ -
2533-4980005	MOBILIZATION	LS	1	$ 250,000.00	$ 250,000.00	0	$ -
2548-0000100	MILLED SHOULDER RUMBLE STRIPS, HMA SURFACE	STA	480	$ 150.00	$ 72,000.00	480	$ 72,000.00
2548-0000110	ASPHALT EMULSION FOR FOG SEAL (SHOULDER RUMBLE STRIPS)	GAL	1050	$ 20.00	$ 21,000.00	1050	$ 21,000.00
2548-0000310	MILLED CENTERLINE RUMBLE STRIPS, HMA SURFACE	STA	480	$ 150.00	$ 72,000.00	480	$ 72,000.00
					$ 4,856,325.00		$ **725,312.00**

D. TIME SCHEDULE

August 15, 2024 TSIP application due.

Late Fall Early Winter Notice of Award 2024 Federal Community Project Grants

January, 2025 TSIP Notice of Award

July 15, 2025 Project Letting through I.D.O.T.

June, 2026 Projected construction.

County:	JEFFERSON	Prepared By:	DeWayne Heintz
Location:	Route H43 (Libertyville Road)	Date Prepared:	7/31/2024
Proposed Improvements:	Add Center and Edgeline Rumble strips RS-12; Add 4 foot paved shoulders RS-30; Add high friction surface CS-55		
Estimated Improvement Cost:	$ 725,312		
Inflation on Crash Costs:	4%	Annual Maintenance: (% of Improvement Cost)	2%
Discount Rate:	4%		
Estimated Service Life:	20	Annual Maintenance Cost:	$ 14,506

Method Choice: CRF Method

The Crash Reduction Factor (CRF) Method applies one to three CRFs to historical crashes to estimate reductions in future crashes. Crash Modification Factors (CMFs) can be converted to CRFs. For additional information, click the "Learn More" button.

Crash Reduction Factor (CRF) Method

Traffic Growth Factor:	1%
Number of CRFs:	3
Years of Crash History:	5

Combined CRF (Dominant Common Residuals Method)

Iowa DOT's preferred methodology for combining CRFs is Dominant Common Residuals, since it is more conservative than the other options.

	CRF 1:	CRF 2:	CRF 3:	Combined CRF
CRF Value (%)	20	4	25	**33.9**

Crash Severity	Rounded Societal Costs	Crash History (Total):	CRF (from above)	Crash History - Annual Avg	Crashes Saved Annually
Fatal (K)	$ 4,200,000	1	33.9	**0.20**	**0.07**
Serious Injury (A)	$ 4,200,000	3	33.9	**0.60**	**0.20**
Minor Injury (B)	$ 280,000	1	33.9	**0.20**	**0.07**
Possible/Unknown Injury (C)	$ 130,000	1	33.9	**0.20**	**0.07**
Property Damage Only (O)	$ 20,000	18	33.9	**3.60**	**1.22**

Crash Severity	Annual Societal Benefit
Fatal (K)	**$ 284,612**
Serious Injury (A)	**$ 853,837**
Minor Injury (B)	**$ 18,974**
Possible/Unknown Injury (C)	**$ 8,809**
Property Damage Only (O)	**$ 24,395**

Total Benefits and Costs

		Implementation Cost	$ 725,312
		Present Value of Maint.	$ 197,145
Present Value Benefits (Societal Benefits)	$ 17,586,427	**Present Value Costs (Impl. and Maint. Costs)**	$ 922,457
Present Value Net Return	$ 16,663,971		
Benefit Cost Ratio	**19.06**		

Form continues on next page

Local Road Safety Plan
Project Description for Roadway Segment Improvements

Risk Factor Points: 18

SEGMENT

Project Name: LIBERTYVILLE RD between 720 ft E of WASHINGTON ST and S MAIN ST
Agency Name: Jefferson County
Contact Name: Cline, Scott
E-mail: engineer@jeffersoncountyia.com

Date: 10/19/16

Prepared By: DJG/DVM
Checked By: MMO

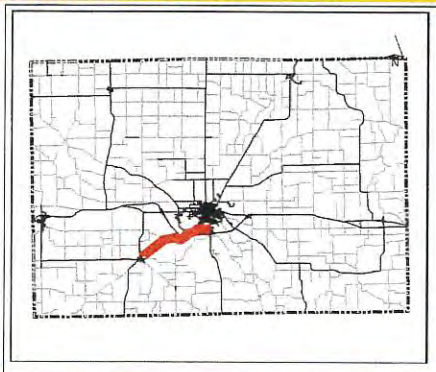
Location Description

Road: **LIBERTYVILLE RD**
From: 720 ft E of WASHINGTON ST
To: S MAIN ST
Length (miles): **5.01**

GPS ID: **447**

This segment contains the following high scoring intersection: GPS ID 275415
This segment contains the following high scoring curves: GPS IDs 90323, 90329, and 90330

Project Location Maps



Segment Information and Systemic Ranking Summary

Systemic Ranking Summary	Value	Points
Average Daily Traffic (ADT)	1,293	6
Pavement | Shoulder Width (ft)	22' | 4'	0
Avg. Pavement Condition (IRI)	238	4
Average Roadside Risk	3.15	4
Access Points per Mile	1.6	3
High Risk Curve Density/Mile	0.4	1
Lane Dept.Crash Rate (HMVMT)	0.0	0
Total Risk Factor Points (25 max)		**18**

Other Information	
Paved Shoulder	No
Shoulder Width (ft)	4
Speed Limit (mph)	55
Lane Width (ft)	11
Number of Lanes	2
Edgeline Rumble Strips	No
Centerline Rumble Strips	No
Curves (L>100', 500'≤R≤1,200')	2
Curves with Chevrons	2

Crash Data, 2006-2015	
Total Crashes	72
K and A Crashes	3
Lane Departure Crashes	0
Lane Departure K and A Crashes	0
Total Crash Rate (per HMVMT)	304.3
K and A Crash Rate (per HMVMT)	12.7

Key Emphasis Areas
Local Roads
Lane Departures
Roadside Collisions

Opinion of Probable Cost (Project Selection Decision Tree Results)

Item Description	Quantity	Unit	Unit Price	Item Cost
Conduct Road Safety Assessment (RSA)	0	EA	$ 30,000	$ -
Conduct Access Control Analysis	0	EA	$ 30,000	$ -
Install 4" Retroreflective Edgeline (Both Sides of Road)	5.01	MILE	$ 1,200	$ 6,017
Install 6" Retroreflective Edgeline (Both Sides of Road)	0.00	MILE	$ 1,800	$ -
Install 4" Retroreflective Centerline	5.01	MILE	$ 800	$ 4,012
Pave 2' Shoulder with Safety Edge (Both Sides of Road)	5.01	MILE	$ 65,000	$ 325,940
Install Edgeline Rumble Strips (Both Sides of Road)	5.01	MILE	$ 2,000	$ 10,029
Install Centerline Rumble Strips	5.01	MILE	$ 1,000	$ 5,014
Review Curve and Provide Signage to Meet MUTCD and Iowa DOT Standards, if Needed	0	CURVE	$ 5,000	$ -
Review and Upgrade Curve Signage to Meet MUTCD and Iowa DOT Standards, if Needed	2	CURVE	$ 2,500	$ 5,000
Clear and Grub (15 ft Both Sides of Road)**	5.01	MILE	$ 20,000	$ 100,289
			Project Selection Decision Tree Systemic Improvements Subtotal:	$ 456,301

Continued on back of this page.

** Unit price varies based on average roadside risk score.

Project Location Map Sources:
Esri, DeLorme, NAVTEQ, USGS, Intermap, iPC, NRCAN, Esri Japan, METI, Esri China (Hong Kong), Esri (Thailand), TomTom, 2013, DigitalGlobe, GeoEye, i-cubed, USDA, AEX, Getmapping, Aerogrip, IGN, IGP, swisstopo, and the GIS User Community

Kimley»Horn

Local Road Safety Plan
Project Description for Roadway Segment Improvements

Risk Factor Points: 18

Project Name: LIBERTYVILLE RD between 720 ft E of WASHINGTON ST and S MAIN ST
Agency Name: Jefferson County
Contact Name: Cline, Scott
E-mail: engineer@jeffersoncountyia.com

Date: 10/19/16
Prepared By: DJG/DVM
Checked By: MMO

SEGMENT

Opinion of Probable Cost (Additional Potential Improvements)

GPS ID: 447

County to check the box for those improvements recommended for consideration.

Item Description	Quantity	Unit	Unit Price	Item Cost
Flatten and Widen Foreslopes (both sides of road)		MILE	$ 75,000	$ -
On-Pavement Markings for Speed Control		EA	$ 500	$ -
Delineate Roadside Hazards (trees or utility poles) with Retroreflective Tape		EA	$ 500	$ -
Guardrail		MILE	$ 50,000	$ -
Post-Mounted Delineators		MILE	$ 1,000	$ -
Review Curve and Provide Signage to Meet MUTCD and Iowa DOT Standards, if Needed		CURVE	$ 5,000	$ -
Retroreflective Strips on Chevron Sign Posts	2	CURVE	$ 500	$ 1,000
Transverse Rumble Strips Prior to Curve		EA	$ 2,000	$ -
Superelevation Correction on Curves		EA	$ 100,000	$ -
Install High Friction Surface Treatment (HFST) on Curves		MILE	$ 150,000	$ -
Speed Activated Flashers on Chevron Signs		EA	$ 2,000	$ -
Other:				
Other:				
Other:				
Other:				
			Additional Potential Improvements Subtotal:	$ 1,000
			Project Selection Decision Tree Systemic Improvements Subtotal:	$ 456,301
			Subtotal:	$ 457,301
			Mobilization: (% +/-)* 10%	$ 45,740
			Traffic Control: (% +/-) 5%	$ 22,992
			Contingency: (% +/-) 20%	$ 91,967
			Estimated Project Cost	**$ 618,000**

*Mobilization is 10% +/- of the subtotal with a minimum of $2,500 and a maximum of $75,000

Opinion of Probable Construction Cost Disclaimer:
Kimley-Horn has no control over the cost of labor, materials, equipment, or over the Contractor's methods of determining prices or over competitive bidding or market conditions. Opinions of probable costs provided herein are based on the information known to Kimley-Horn at this time and represent only Kimley-Horn's judgment as a design professional familiar with the construction industry. Kimley-Horn cannot and does not guarantee that proposals, bids, or actual construction costs will not vary from its opinions of probable costs.

Project Description Form Disclaimer:
The recommended improvements contained in this project description form were developed through a Geographic Information System (GIS) database risk assessment and project decision tree selection process, as specifically stated in our scope of services. Kimley-Horn has no control over the accuracy of the GIS databases nor the suitability of the specific improvements for the location, and has provided recommended improvements for consideration by the County Engineer. The County Engineer may use this project description form to aid in the selection and development of projects, but this project description form should not be used as the sole basis for the County Engineer's decision making process. We endeavored to research issues and constraints to the extent practical given the scope, budget, and schedule agreed to with the Client. Our assessment is based in large part on information provided to us by others (DOT, county staff, etc.) and therefore is only as accurate and complete as the information provided to us. No formal assessment was made for the improvement recommendations contained on this page, if in question, it is recommended that a study/analysis of this location be made to warrant the above indicated improvements. This project description form is based on our knowledge as of October 2016.

End of Project Description

Back Page

Rev. 07/23

RESOLUTION NO. 240805-2

APPROVAL OF TRAFFIC SAFETY IMPROVEMENT PROGRAM APPLICATION FOR SITE SPECIFIC SAFETY IMPROVEMENTS

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 site specific features will aid in improving the safety of travelling public using Route H43 (Libertyville Road); and

WHEREAS, paved shoulders, center and edge line rumble strips and high-friction pavements reduce crash incidence.

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 safety measures.

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 traffic safety measures.
3. Authorize the Board of Supervisors Chair to Sign application and supporting document in relation to the TSIP funding.

Dated the ~~15th~~ 5th Day of August ~~2023~~ 2024

ROLL CALL VOTE

	AYE	NAY	ABSTAIN	ABSENT
Suzie Drish, Chair				
Dee Sandquist				
Lee Dimmit				

ATTEST: _____

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 JEFFERSON COUNTY BOARD OF SUPERVISORS

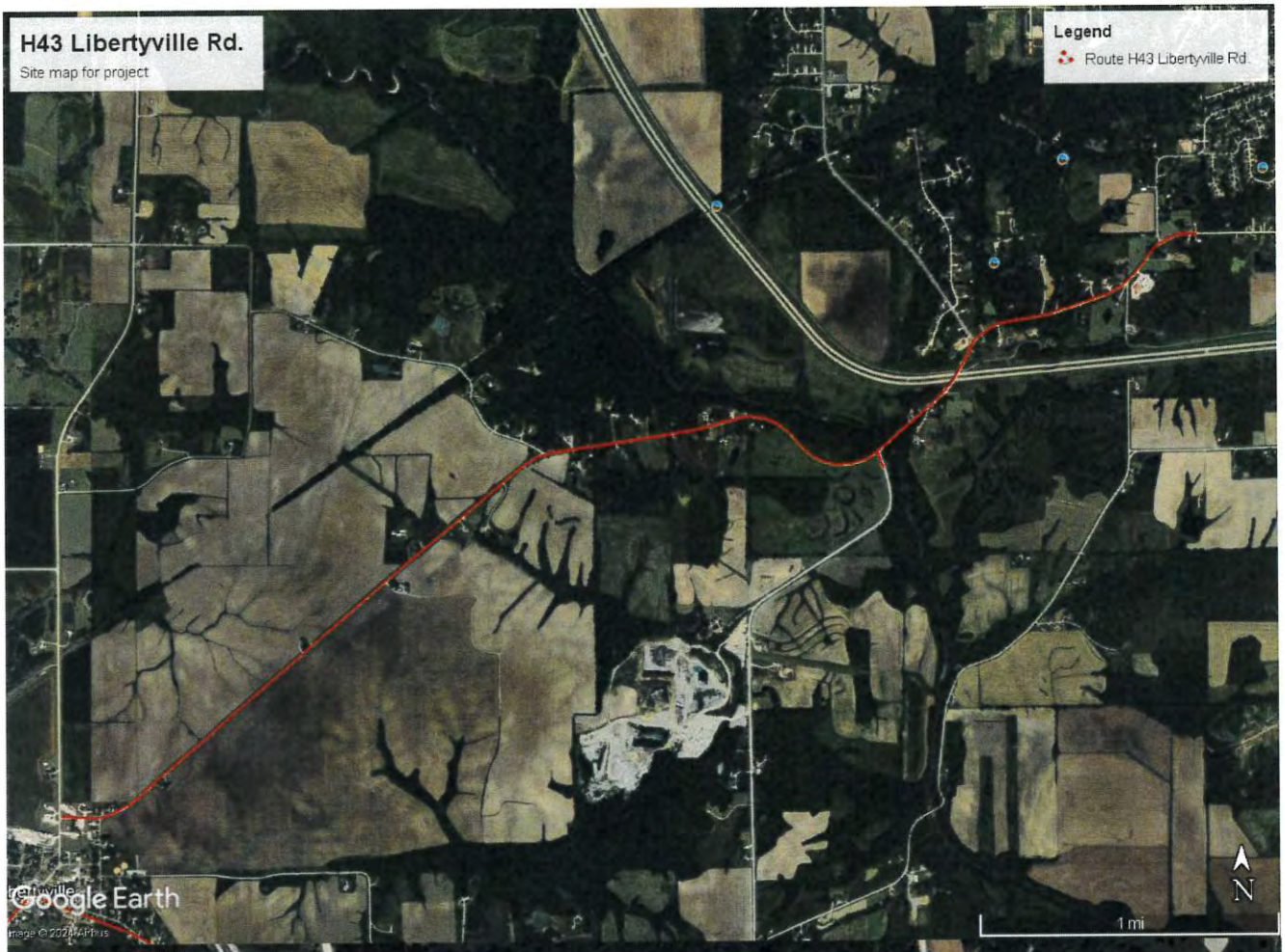
Signed: _____ 8/5/2024
Signature — Date Signed

Dee Sandquist
Printed Name

Attest: _____ 8/6/24
Signature — Date Signed

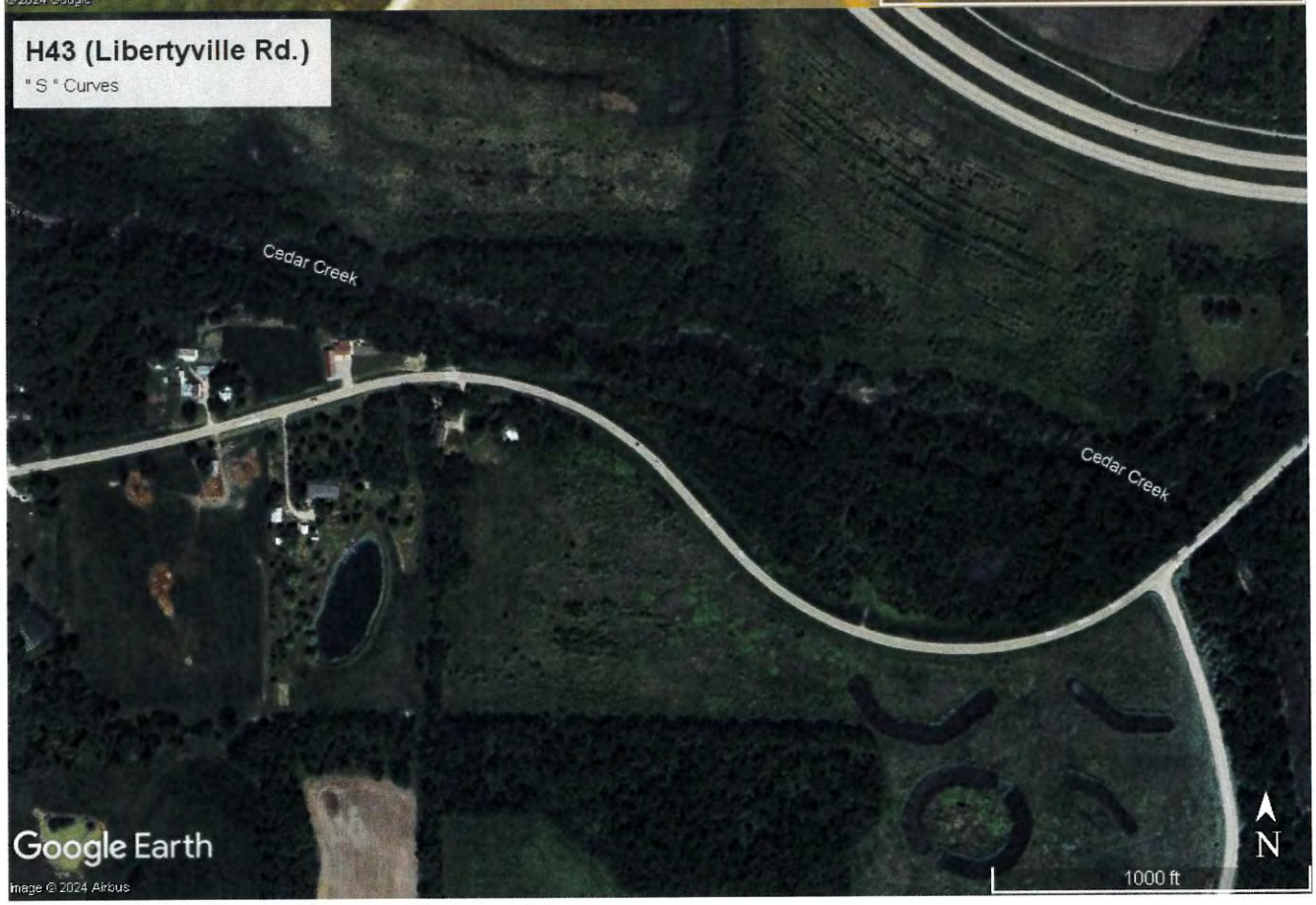
Scott Reneker
Printed Name

Rev. 07/23


H43 Libertyville Rd.
Site map for project
Legend
Route H43 Libertyville Rd.
Google Earth
N
1 mi

H43(Libertyville Rd.)
East end
Fairfield Trails
Google Earth
N
1000 ft

H43 (Libertyville Rd.)
Approaching Curves
Google Earth
© 2024 Google
7.79 ft


H43 (Libertyville Rd.)
" S " Curves
Cedar Creek
Cedar Creek
Google Earth
Image © 2024 Airbus
N
1000 ft

Rev. 07/23

Application for SITE-SPECIFIC TSIP FUNDS

GENERAL INFORMATION **DATE:** May 17, 2024

Location / Title of Project 210th Street & Hwy 1 Intersection Improvements

Applicant Johnson County, Iowa

Contact Person Ed Bartels, PE & PLS Title Assistant County Engineer

Complete Mailing Address 4810 Melrose Avenue West

Iowa City, IA 52246

Phone 319-356-6046 (Area Code) E-Mail ebartels@johnsoncountyiowa.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	$	593,264
Total Project Cost	$	730,099
Safety Funds Requested	**$**	**500,000**

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
2017043358	IA 1 and 210th Street	☐	☒	0.24	0.03
		☐	☐		

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.

Representing the: Johnson County Board of Supervisors

Signed: Rod Sullivan 7/18/24

Signature Date Signed

Rod Sullivan

Printed Name

Attest: Travis Weipert by Erin Shane, Deputy Auditor 7/23/24

Signature Date Signed

Travis Weipert by Erin Shane, Deputy Auditor

Printed Name

RESOLUTION NO. 07-18-24-02

ENDORSING APPLICATION FOR TRAFFIC SAFETY IMPROVEMENT PROGRAM GRANT FUNDS FOR TURN LANES FROM HIGHWAY 1 ONTO 210TH STREET

WHEREAS, the Johnson County Board of Supervisors is empowered under authority of Iowa Code Section 306.4 (2024 Code of Iowa) to operate and manage the secondary road system within Johnson County; and

WHEREAS, the State of Iowa has available grant funds associated with the Traffic Safety Improvement Program (TSIP) up to a maximum of $500,000.00 per location; and

WHEREAS, existing and future growth and development anticipated within the fringe area of the City of Solon, embodied in the Solon Comprehensive Plan adopted April 20, 2016 and the Fringe Area Policy Agreement Between Johnson County and the City of Solon, effective February 9, 2023, may increase traffic along Iowa State Highway 1 (Iowa 1) and through its intersections with 210th Street and Dillons Furrow Road, all in Johnson County; and

WHEREAS, to enhance the safety of the travelling public now and into the foreseeable future, the County Engineer recommends application for TSIP funding of a turn lane project on Iowa 1 at its intersection with 210th Street in Big Grove Township, Johnson County, Iowa;

NOW THEREFORE, BE IT RESOLVED, that the Board of Supervisors of Johnson County do hereby declare support for and endorsement of the Grant Application for said turn lane project, and authorizes the submittal of such application for TSIP grant funding under 761 IAC 164.8 and .9 to the State of Iowa; and

BE IT FURTHER RESOLVED, that the County will adequately maintain such improvements as within the Johnson County Secondary Roads system for a minimum of five (5) years; and

BE IT FURTHER RESOLVED, that the County Engineer is hereby directed to pursue available funding for said project and to program it as soon as practicable.

It was moved by Green-Douglass and seconded by Green the Resolution be adopted this 18th day of July, 2024.

Roll Call: Fixmer-Oraiz Aye Green Aye Green-Douglass Aye Porter Aye Sullivan Aye

ATTEST:

Rod Sullivan

Rod Sullivan, Chairperson
Board of Supervisors

7/18/24
Date

Travis Weipert by Eric Shore, Deputy Auditor

Travis Weipert, Auditor
Johnson County, Iowa

Traffic Safety Improvement Program (TSIP) Funds Narra1ve

1 Project Loca1on

The site is located on Highway 1 south of Solon, at the intersection of 210th Street and extending south to the northern intersection of Dillons Furrow Road.

2 Exis1ng Condi1ons

Highway 1 is a primary State highway with an AADT of 9,000 (as counted in 2022). The roadway is currently asphalt with a 24' width and 8' shoulders (6' paved and 2' granular). 210th Street is gravel and classified as a "Minor Collector" and is designated as a "Farm to Market" road west of Highway 1. East of Highway one 210th Street is gravel and classified as a local "area service" road. The intersection is a two way stop on 210th Street where the through traffic on Highway 1 does not stop.

Visibility facing north on Highway 1 at the 210th intersection is unobstructed. The speed limit on Highway 1 at the intersection is 55 mph. Southbound traffic is accelerating one mile from the intersection where the speed limit increases to 55 mph. Facing south from the intersection with 210th Street drivers can see northbound Highway 1 traffic from 815' away as it exits a curve to the west and passes the northern Dillons Furrow intersection 630' away. Dillons Furrow is a gravel byway east of the Highway 1 roadway, terminating at two intersections, one 630' south of the intersection of Highway 1 and 210th Street and the other one mile to the south. The northern intersection of Dillons Furrow and Highway 1 visibility looking south is limited for passenger vehicles due to a 6' rise in Highway 1 600' south of the intersection. Highway 1 to the north of the northern Dillons Furrow intersection approaches via a sweeping curve aKer exiting Solon and provides slightly over a mile of visibility in normal conditions.

3 Safety history for this stretch of Highway 1

There were 3 accidents recorded near this intersection from 2019-2023, including 1 serious injury crash. The county has updated the future land use map to change 270 acres of land at the southeast corner of Highway 1 and 210th Street from agricultural to residential. This development of residential subdivisions will have a significant impact on the traffic volume in this area, especially the turning movements. The county has already approved the preliminary plat for Spartan Hollow (a 51 lot subdivision along Dillons Furrow Road). Most accidents in this stretch have been front-to-rear collisions. The next largest category of accidents are head-on, front-to-front collisions.

4 Proposed Concept

This project will add northbound and southbound leK turn lanes from Highway 1 onto 210th Street. The project will also add northbound and southbound right turn lanes from Highway 1 onto 210th Street. The project will include a southbound leK turn lane from Highway 1 onto Dillons Furrow Road. The developer of Spartan Hollow Subdivision has agreed to participate in the funding of the southbound leK turn lane onto Dillons Furrow Road. The costs of the southbound leK turn lane onto Dillons Furrow are not included in the safety cost of the project. The safety cost is the cost of the improvements required

for the turn lanes at 210th Street. The total cost includes both the improvements required for 210th Street and Dillons Furrow Road. There will be a continuous painted median for the leK turn lanes from 210th Street to Dillons Furrow Road to avoid having the through lanes tapering in and out. The turn lanes at the intersection will reduce the number of crashes at this intersection by removing the stopped and slower traffic from the through lanes. This grant request is for the cost of the improvements at the intersection of 210th Street. The amount of the grant request is $500,000.

PROJECT SCHEDULE

Submi al of TSIP application	July 2024
Start project design	August 2024
Anticipated approval of TSIP funds	January 2025
Final project design	February 2025
Safety funds become available	July 2025
Construction phase	July 2025 – October 2025
Project completion	October 2025

IOWA HIGHWAY 1 TURNLANES AT 210th Street
MMS PROJECT # 9414-017 May 7, 2024

COST ESTIMATE

DESCRIPTION	UNITS	UNIT PRICE	TOTAL QUANTITY	TOTAL COST	SAFETY QUANTITY	SAFETY COST
REMOVE GRAVEL SHOULDER 6"	CY	$20.27	271.3	$5,499.18	225.0	$4,560.75
REMOVE ACC SHOULDER	SY	$9.81	2570.7	$25,218.24	2024.9	$19,864.16
RELOCATE ROADSIDE DITCH	CY	$6.35	3690.0	$23,431.50	2865	$18,192.75
RESHAPE SHOULDERS	STATION	$335.00	41.5	$13,902.50	32.2	$10,800.40
CONSTRUCT ACC SURFACE 1.5"	TON	$68.50	415.9	$28,488.08	331.8	$22,728.09
CONSTRUCT ACC INTERMEDIATE 1.5"	TON	$50.69	415.9	$21,081.18	331.8	$16,818.78
CONSTRUCT ACC BASE 9"	TON	$52.52	2495.3	$131,053.48	1990.8	$104,555.83
ASHPALT BINDER, HIGH TRAFFIC	TON	$660.00	199.6	$131,736.00	159.2	$105,072.00
CONSTRUCT MODIFIED SUBBASE 12"	CY	$41.47	1590.0	$65,937.30	1268.5	$52,605.46
CONSTRUCT ACC SHOULDER 6"	SY	$32.24	2631.7	$84,844.93	2082.7	$67,145.17
CONSTRUCT MODIFIED SUBBASE 6"	CY	$41.47	438.6	$18,189.20	347.1	$14,394.70
CONSTRUCT GRAVEL SHOULDER 6"	TON	$29.38	556.7	$16,355.11	443.4	$13,026.50
CORE OUT SUBGRADE & DISPOSE 6"	CY	$20.63	1399.5	$28,871.30	1125.0	$23,207.99
PAINT MARKINGS	STATION	$21.90	142.6	$3,122.94	80.5	$1,762.95
MILLED SHOULDER RUMBLE STRIPS	STATION	$200.00	35.0	$7,000.00	28.0	$5,600.00
REMOVE/PREPLACE 18" CMP CULVERT	LF	$70.00	35.0	$2,450.00	35.0	$2,450.00
TRAFFIC CONTROL	LS	$25,000.00	1.0	$25,000.00	1.0	$25,000.00
MOBILIZATION	LS	$30,000.00	1.0	$30,000.00	1.0	$30,000.00

ESTIMATED CONSTRUCTION COST	$662,180.95	$537,785.54
CONTINGENCY 10%	$66,218.09	$53,778.55
ROW ACQUISITION	$1,700.00	$1,700.00
ESTIMATED TOTAL COST	$730,099.04	$593,264.09

AREA MAP

Highway 382
Oakland Cemetery / F16
(Big Grove Twp)
N Market St / Highway 1
Sutliff Rd NE / F14
F14
W Main St / Highway 382
SOLON
S Market St / Highway 1
W 5th St
E 5th St
Taft Ave NE
180th St NE
Racine Ave NE
PROJECT AREA
Jordan Creek Rd NE
th St NE
210th St NE / F28
Highway 1 NE
Dillons Furrow Rd NE
Turner Ave NE
Jordan Creek Rd NE / F28
Quincy Rd NE
Rd NE

PHOTOS

LOCATION OF 3 FATALITY ACCIDENT

HWY 1 SOUTH FROM WEST 210TH STREET

210TH STREET EAST FROM HWY 1

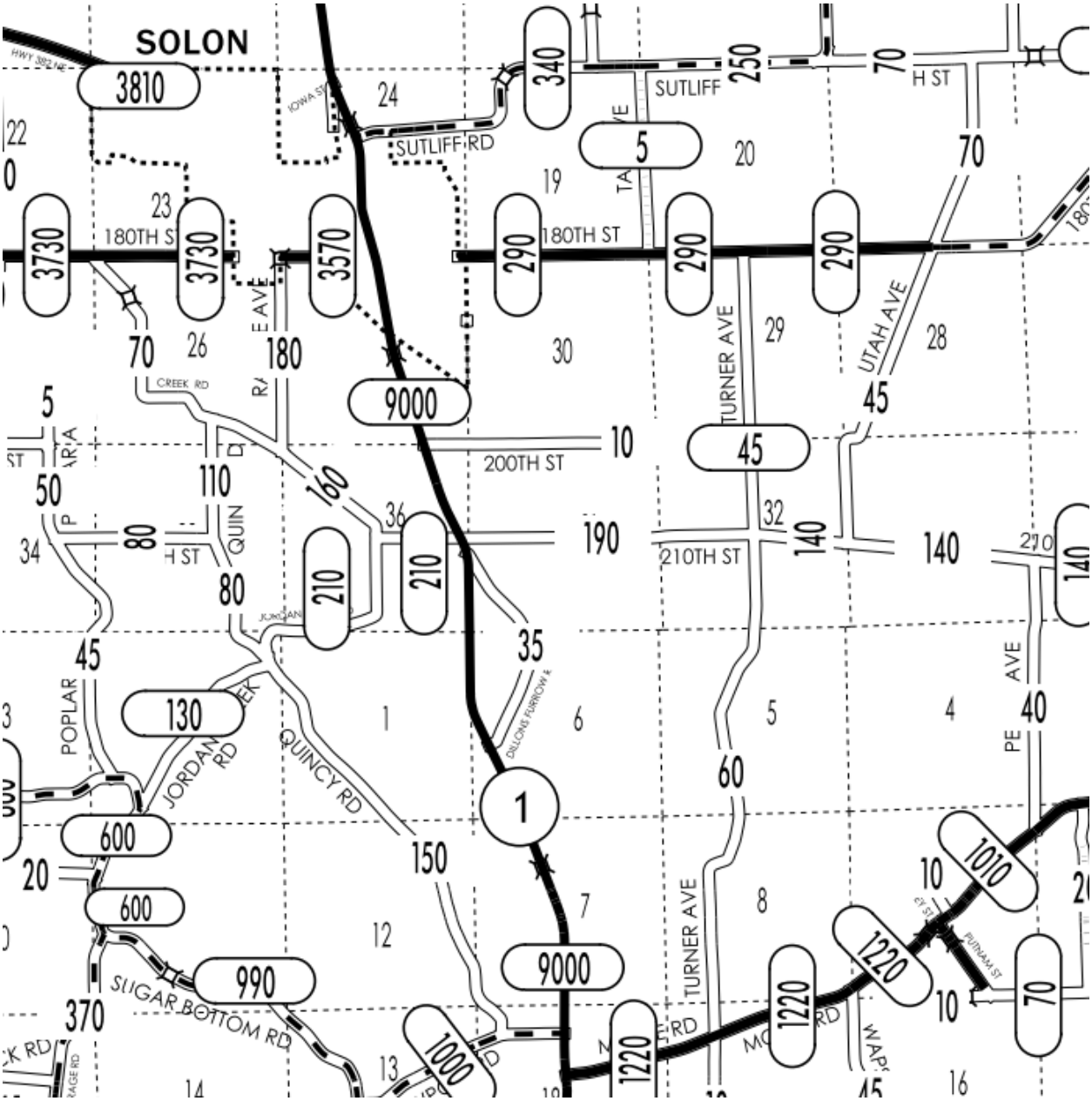
210TH STREET WEST FROM HWY 1

HWY 1 NORTH FROM NORTHERN DILLONS FURROW INTERSECTION

HIGHWAY 1 SOUTH FROM NORTHERN DILLONS FURROW INTERSECTION

DILLONS FURROW FROM NOTHERN INTERSECTION WITH HIGHWAY 1

2022 AADT TRAFFIC COUNTS



Traffic Count
Intersection 210th St NE & HWY 1 NE, Solon Iowa
MMS Project #9414-017
Thursday 06/01/2023 7:00-9:00am

		Eastbound			Northbound			Westbound			Southbound			Intersection Total
		Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
7:00 - 7:15	Total	1	0	1	0	49	0	0	0	1	0	133	0	185
7:15 - 7:30	Total	0	0	0	0	56	0	1	0	3	1	158	1	220
7:30 - 7:45	Total	2	0	0	0	47	0	1	0	5	1	157	0	213
7:45 - 8:00	Total	0	0	0	0	74	0	0	0	3	0	139	0	216
8:00 - 8:15	Total	0	1	2	0	64	0	0	0	4	1	113	1	186
8:15 - 8:30	Total	0	0	0	0	51	1	1	0	0	0	98	1	152
8:30 - 8:45	Total	2	0	0	0	41	0	0	1	1	5	117	1	168
8:45 - 9:00	Total	0	0	1	0	59	0	0	0	2	0	84	1	147
AM Peak Hour		3	1	3	0	241	1	2	1	15	6	587	4	864

Traffic Count
Intersection 210th St NE & HWY 1 NE, Solon Iowa
MMS Project #9414-017
Tuesday 06/01/2023 7:00-9:00am

	Eastbound			Northbound			Westbound			Southbound		
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
7:00 to 8:00	3	0	1	0	226	0	2	0	12	2	587	1
7:15 to 8:15	2	1	2	0	241	0	2	0	15	3	567	2
7:30 to 8:30	2	1	2	0	236	1	2	0	12	2	507	2
7:45 to 8:45	2	1	2	0	230	1	1	1	8	6	467	3
8:00 to 9:00	2	1	3	0	215	1	1	1	7	6	412	4

Traffic Count
Intersection 210th St NE & HWY 1 NE, Solon Iowa
MMS Project #9414-017
Tuesday 06/01/2023 3:00-6:00pm

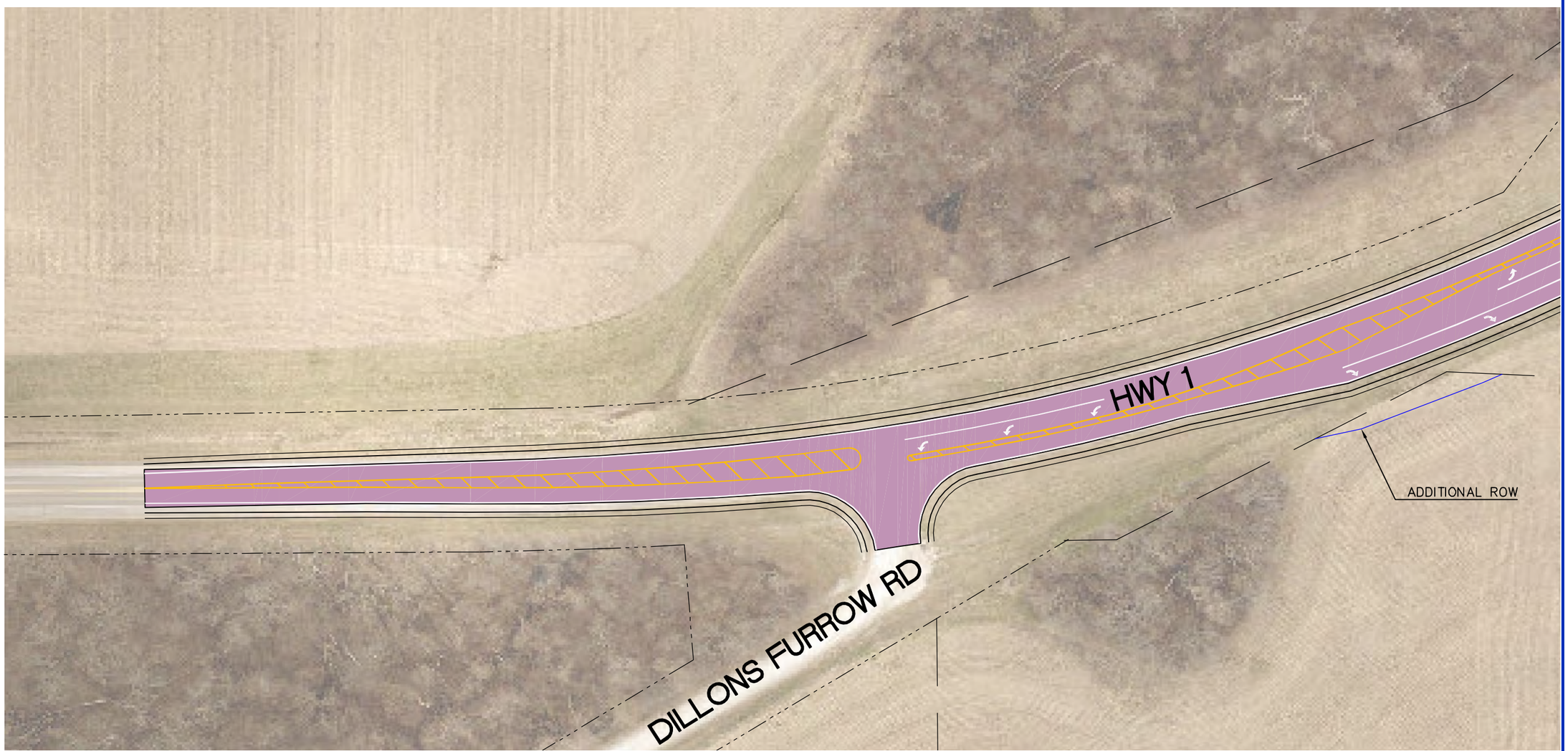
		Eastbound			Northbound			Westbound			Southbound			Intersection Total
		Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
3:00 - 3:15	Total	3	0	0	2	97	1	0	0	0	2	68	3	176
3:15 - 3:30	Total	1	0	0	0	103	0	0	0	3	3	73	1	184
3:30 - 3:45	Total	1	0	0	1	134	2	0	0	2	1	78	2	221
3:45 - 4:00	Total	1	0	0	3	140	2	1	0	0	6	81	0	234
4:00 - 4:15	Total	1	0	1	2	131	0	0	0	3	3	74	1	216
4:15 - 4:30	Total	2	0	0	1	173	3	0	1	1	3	57	0	241
4:30 - 4:45	Total	0	1	1	0	151	3	0	0	1	1	77	3	238
4:45 - 5:00	Total	1	0	1	0	165	1	0	0	0	2	89	1	260
5:00 - 5:15	Total	0	0	0	1	168	5	0	0	0	2	87	4	267
5:15 - 5:30	Total	0	0	0	0	187	3	0	0	0	1	68	0	259
5:30 - 5:45	Total	2	0	0	4	154	3	0	0	0	4	64	2	233
5:45 - 6:00	Total	0	2	0	0	109	1	0	1	0	3	51	3	170
PM Peak Hour		6	2	3	7	674	12	1	1	8	13	321	9	1057

Traffic Count
Intersection 210th St NE & HWY 1 NE, Solon Iowa
MMS Project #9414-017
Tuesday 06/01/2023 3:00-6:00pm

	Eastbound			Northbound			Westbound			Southbound		
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
3:00 to 4:00	6	0	0	6	474	5	1	0	5	12	300	6
3:15 to 4:15	4	0	1	6	508	4	1	0	8	13	306	4
3:30 to 4:30	5	0	1	7	578	7	1	1	6	13	290	3
3:45 to 4:45	4	1	2	6	595	8	1	1	5	13	289	4
4:00 to 5:00	4	1	3	3	620	7	0	1	5	9	297	5
4:15 to 5:15	3	1	2	2	657	12	0	1	2	8	310	8
4:30 to 5:30	1	1	2	1	671	12	0	0	1	6	321	8
4:45 to 5:45	3	0	1	5	674	12	0	0	0	9	308	7
5:00 to 6:00	2	2	0	5	618	12	0	1	0	10	270	9

NORTH

0 8 20 40 60 80
GRAPHIC SCALE IN FEET
1"=80'



CIVIL ENGINEERS
LAND PLANNERS
LAND SURVEYORS
LANDSCAPE ARCHITECTS
ENVIRONMENTAL SPECIALISTS

1917 S. GILBERT ST.
IOWA CITY, IOWA 52240
(319) 351-8282
www.mmsconsultants.net

Date	Revision

210TH STREET / HWY 1 TURN LANE EXHIBIT

DILLONS FURROW ROAD NE

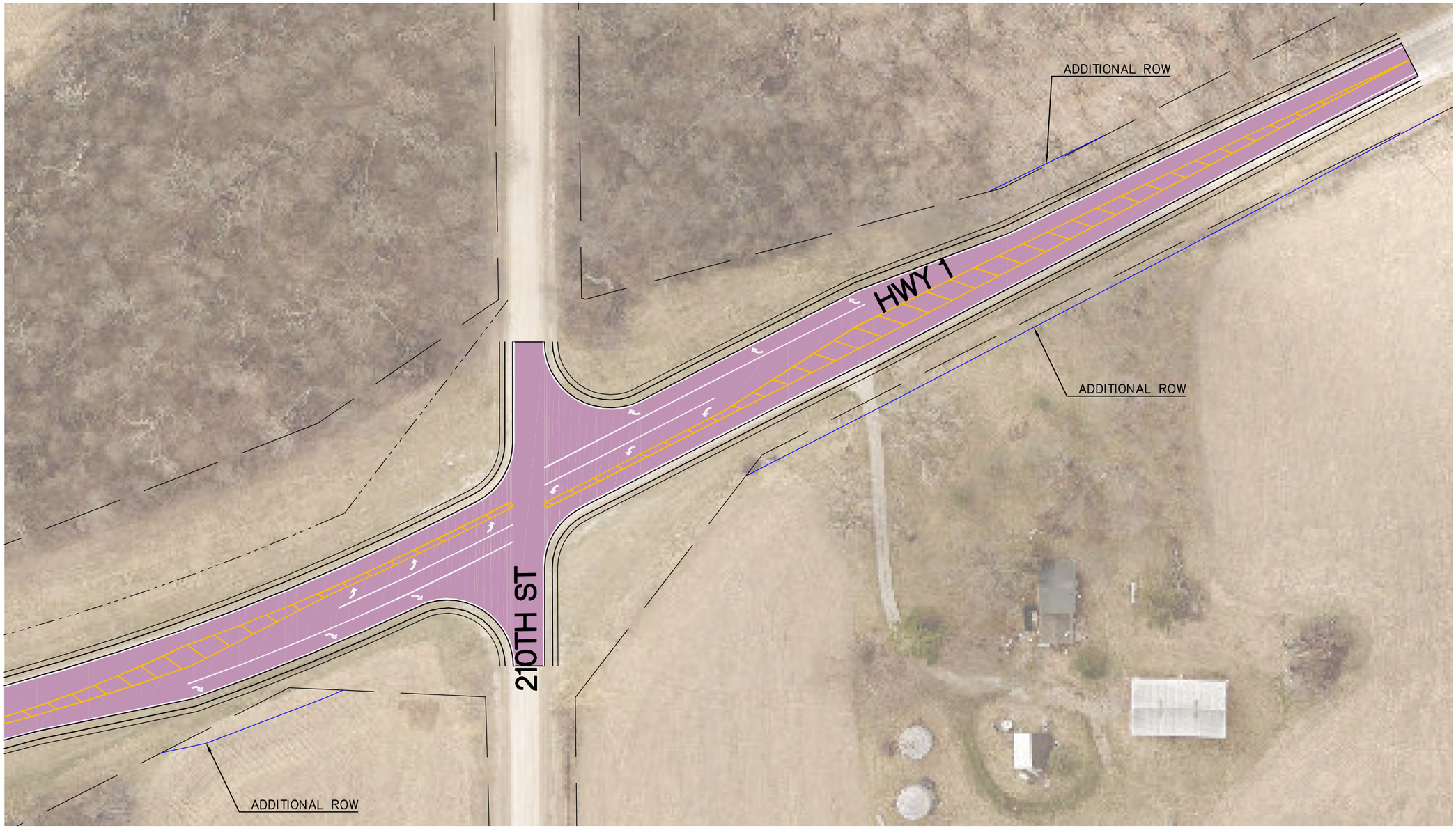
JOHNSON COUNTY
IOWA

MMS CONSULTANTS, INC.

Date: 06-16-2023	
Designed by: PVA	Field Book No: FIELDBOOK
Drawn by: ADP	Scale: 1"=80'
Checked by: RLA	Sheet No: 1
Project No: 9414-017	of: 2

NORTH

0 8 20 40 60 80
GRAPHIC SCALE IN FEET
1"=80'



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Designed by: PVA	Field Book No: FIELDBOOK
Drawn by: ADP	Scale: 1"=80'
Checked by: RLA	Sheet No: 2
Project No: 9414-017	of: 2

Iowa Crash Analysis Tool
Quick Report
2019-2023

Crash Severity	3
Fatal Crash	0
Suspected Serious Injury Crash	1
Suspected Minor Injury Crash	1
Possible/Unknown Injury Crash	0
Property Damage Only	1

Injury Status Summary	4
Fatalities	0
Suspected serious/incapacitating	1
Suspected minor/non-incapacitating	2
Possible (complaint of pain/injury)	0
Uninjured	0
Unknown	0
Not Reported	1

Property/Vehicles/Occupants	
Property Damage Total (dollars):	60,000.00
Average (per crash dollars):	20,000.00
Total Vehicles:	4.00
Average (per crash):	1.33
Total Occupants:	5.00
Average (per crash):	1.67

Average Severity	
Fatalities/Fatal Crash:	0.00
Fatalities/Crash:	0.00
Injuries/Crash:	1.00
Major Injuries/Crash:	0.33
Minor Injuries/Crash:	0.67
Possible/Unknown Injuries/Crash:	0.00

Major Cause			3
Animal	1	Ran traffic signal	0
Ran stop sign	0	Failed to yield to emergency vehicle	0
FTYROW: At uncontrolled intersection	0	FTYROW: Making right turn on red signal	0
FTYROW: From stop sign	0	FTYROW: From yield sign	0
FTYROW: Making left turn	1	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	0
Exceeded authorized speed	0	Improper or erratic lane changing	0
Operating vehicle in an reckless/erratic/care...	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	1	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		

Iowa Crash Analysis Tool
Quick Report
2019-2023

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	0	0	0	0	0	0	0	0	0	0	0
Tuesday	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Wednesday	0	0	0	0	0	0	0	0	0	1	0	0	0	1
Thursday	0	0	0	0	0	1	0	0	0	0	0	0	0	1
Friday	0	0	0	0	0	0	0	0	0	1	0	0	0	1
Saturday	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	1	0	0	0	2	0	0	0	3

Manner of Crash Collision	**3**
Non-collision (single vehicle)	2
Head-on (front to front)	1
Rear-end (front to rear)	0
Angle (oncoming left turn)	0
Broadside (front to side)	0
Sideswipe (same direction)	0
Sideswipe (opposite direction)	0
Rear to rear	0
Rear to side	0
Not reported	0
Other	0
Unknown	0

Surface Conditions	**3**
Dry	0
Wet	2
Ice/frost	0
Snow	0
Slush	0
Mud/dirt	0
Water (standing or moving)	0
Sand	0
Oil	0
Gravel	0
Not reported	1
Other	0
Unknown	0

Fixed Object Struck			**4**
Bridge overhead structure	0	Bridge pier or support	0
Bridge/bridge rail parapet	0	Curb/island/raised median	0
Ditch	1	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)	3

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	1	0	0	1
= 16	0	0	0	0	0
= 17	0	0	0	0	0
= 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	0	0	0	0	0
>= 30 and <= 34	1	0	0	0	1
>= 35 and <= 39	0	0	0	0	0
>= 40 and <= 44	0	0	0	0	0
>= 45 and <= 49	0	0	0	0	0
>= 50 and <= 54	0	0	0	0	0
>= 55 and <= 59	1	0	0	0	1
>= 60 and <= 64	0	0	0	0	0
>= 65 and <= 69	0	1	0	0	1
>= 70 and <= 74	0	0	0	0	0
>= 75 and <= 79	0	0	0	0	0
>= 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	0	0	0
Total	2	2	0	0	4

Drug/Alcohol Related	3
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	1
None Indicated	2

Alcohol Test Given	4
None	3
Blood	1
Urine	0
Breath	0
Vitreous	0
Refused	0
Not reported	0

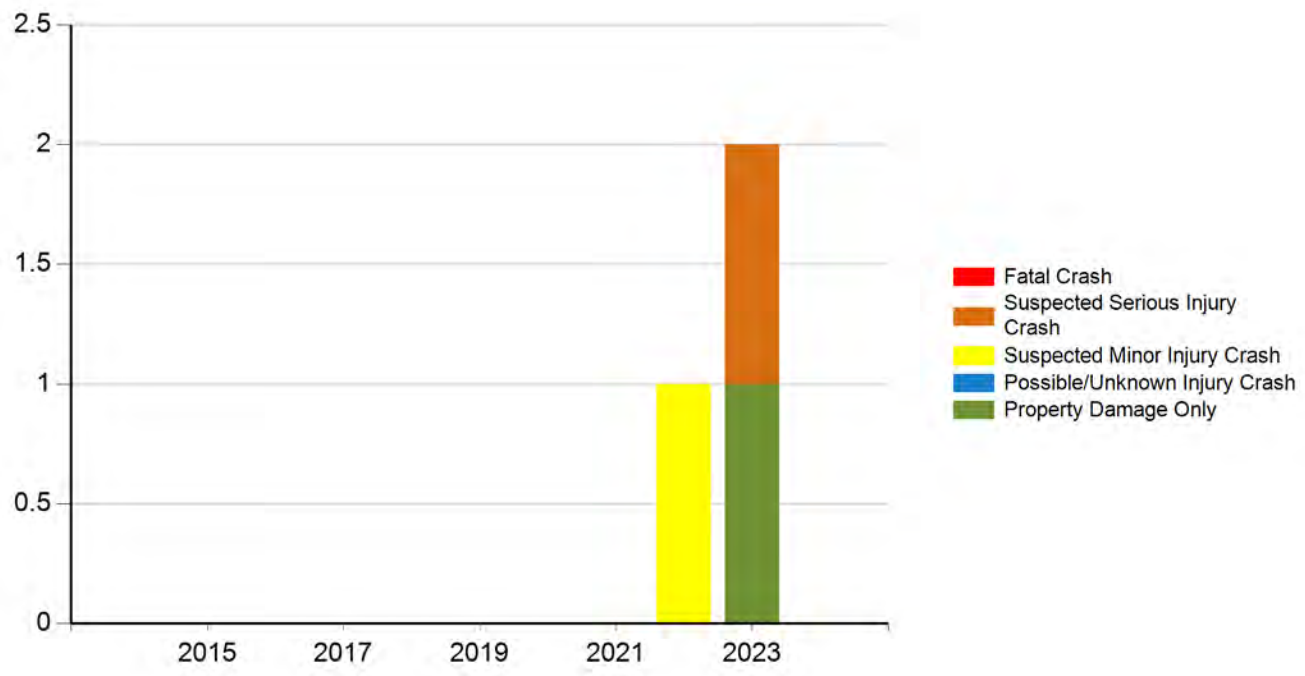
Drug Test Given	4
None	3
Blood	1
Urine	0
Breath	0
Vitreous	0
Refused	0
Not reported	0

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**
2014	0	0	0	0	0	0
2015	0	0	0	0	0	0
2016	0	0	0	0	0	0
2017	0	0	0	0	0	0
2018	0	0	0	0	0	0
2019	0	0	0	0	0	0
2020	0	0	0	0	0	0
2021	0	0	0	0	0	0
2022	0	0	1	0	0	1
2023	0	1	0	0	1	2
2024	0	0	0	0	0	0
Total	0	1	1	0	1	3

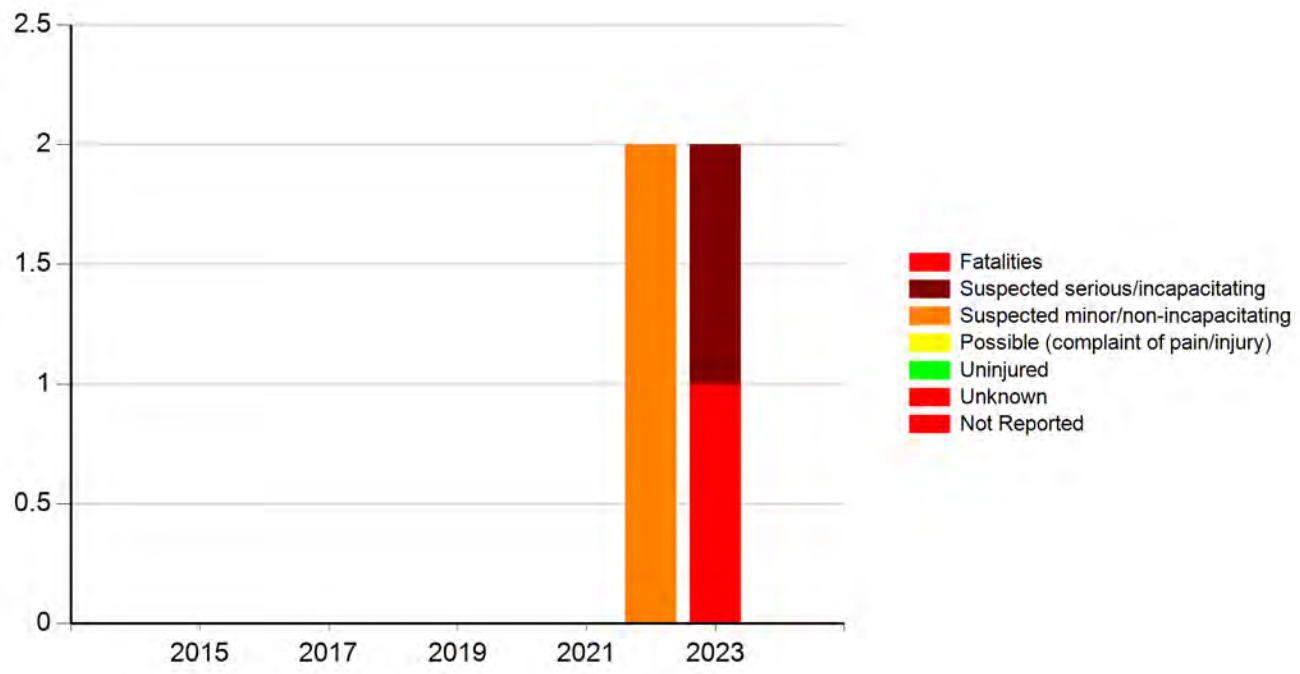
Severity/Year



Injury Status - Annual

Crash Year	Fatalities	Suspected serious/incapacitating	Suspected minor/non-incapacitating	Possible (complaint of pain/injury)	Uninjured	Unknown	Not Reported	**Total**
2014	0	0	0	0	0	0	0	0
2015	0	0	0	0	0	0	0	0
2016	0	0	0	0	0	0	0	0
2017	0	0	0	0	0	0	0	0
2018	0	0	0	0	0	0	0	0
2019	0	0	0	0	0	0	0	0
2020	0	0	0	0	0	0	0	0
2021	0	0	0	0	0	0	0	0
2022	0	0	2	0	0	0	0	2
2023	0	1	0	0	0	0	1	2
2024	0	0	0	0	0	0	0	0
Total	0	1	2	0	0	0	1	4

Injury Status/Year



Meeting the following criteria

Jurisdiction: Counties (Johnson)
Year: 2019, 2020, 2021, 2022, 2023
Map Selection: Yes
Filter: None

Analyst Information

County:	Johnson	Prepared By:	Ron Amelon
Location:	Highway 1 and 210th Street	Date Prepared:	5/17/2024
Proposed Improvements:	Left and right turn lanes on Highway 1 at 210th Street		
Estimated Improvement Cost:	$ 593,264		
Inflation on Crash Costs:	4%	Annual Maintenance:	2%
Discount Rate:	4%	(% of Improvement Cost)	
Estimated Service Life:	15	Annual Maintenance Cost:	$ 11,865

Method Choice: CRF Method

The Crash Reduction Factor (CRF) Method applies one to three CRFs to historical crashes to estimate reductions in future crashes. Crash Modification Factors (CMFs) can be converted to CRFs. For additional information, click the "Learn More" button.

Crash Reduction Factor (CRF) Method

Traffic Growth Factor:	1%
Number of CRFs:	2
Years of Crash History:	5

Combined CRF (Dominant Common Residuals Method)

Iowa DOT's preferred methodology for combining CRFs is Dominant Common Residuals, since it is more conservative than the other options.

	CRF 1:	CRF 2:	Combined CRF
CRF Value (%)	35	15	**32.0**

Crash Severity	Rounded Societal Costs	Crash History (Total):	CRF (from above)	Crash History - Annual Avg	Crashes Saved Annually
Fatal (K)	$ 4,200,000		32.0	**0.00**	**0.00**
Serious Injury (A)	$ 4,200,000	1	32.0	**0.20**	**0.06**
Minor Injury (B)	$ 280,000	1	32.0	**0.20**	**0.06**
Possible/Unknown Injury (C)	$ 130,000		32.0	**0.00**	**0.00**
Property Damage Only (O)	$ 20,000	1	32.0	**0.20**	**0.06**

Crash Severity	Annual Societal Benefit
Fatal (K)	**$ -**
Serious Injury (A)	**$ 268,791**
Minor Injury (B)	**$ 17,919**
Possible/Unknown Injury (C)	**$ -**
Property Damage Only (O)	**$ 1,280**

Total Benefits and Costs

		Implementation Cost	$ 593,264
		Present Value of Maint.	$ 131,923
Present Value Benefits (Societal Benefits)	$ 3,411,291	Present Value Costs (Impl. and Maint. Costs)	$ 725,187
Present Value Net Return	$ 2,686,105		
Benefit Cost Ratio	**4.70**		

Form continues on next page

County:	Johnson	Prepared By:	Ron Amelon
Location:	Highway 1 and 210th Street	Date Prepared:	5/17/2024

No Input Necessary - No Custom Values In Use

General Customizations

No change to Crash Costs

No change to Discount Rate

No change to Maintenance Costs

Method-Specific Customizations

No change to Traffic Growth Rate

No change to Crash History

Rev. 07/23 Exhibit A

Application for SITE-SPECIFIC TSIP FUNDS

GENERAL INFORMATION **DATE:** 8/6/2024

Location / Title of Project County Road E28 I Grade and Pave

Applicant Jones County

Contact Person Derek Snead, PE Title County Engineer

Complete Mailing Address 19501 Highway 64 E, P.O. Box 368
Anamosa, IA 52205

Phone (319) 462-3785 E-Mail engineer@jonescountyiowa.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	$	1,141,000
Total Project Cost	$	5,750,000
Safety Funds Requested	**$**	**500,000**

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
4888	RIDGE ROAD E28	☐	☐		
		☐	☐		

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 Jones

Signed: _____ 8/6/2024
Signature Date Signed

Derek Snead
Printed Name

Attest: _____ 8.6.2024
Signature Date Signed

Todd Postel
Printed Name

Exhibit A

RESOLUTION FOR TRAFFIC SAFETY IMPROVEMENT PROGRAM
Grant Application for CO RD E28 Road Segment Safety Improvements

WHEREAS, the Board of Supervisors, hereafter referred to as "the Board", believes the County Road E28 project, hereafter referred to as "the project" is in the best interest of Jones County, Iowa, and the residents thereof; and

WHEREAS, the State of Iowa has available Grant funds associated with the Traffic Safety Improvement Program up to a maximum of $500,000 per location; and

WHEREAS, the County Engineer recommends application for funding of a Grade and Pave project that includes safety improvements on County Road E28 from County Road X28 to the Buffalo Creek Bridge.

NOW THEREFORE, BE IT RESOLVED by the Board of Jones County, Iowa, that we declare support for and endorsement of the Grant Application for said project. The board further endorses the submittal of such application for grant funding and assures that the County will adequately maintain such improvements within the Jones County Secondary Roads system; and directs the County Engineer to pursue available funding for said project.

Dated at Jones County, Iowa, this 6th day of August 2024.

Board of Supervisors of Jones County, Iowa

NED ROHWEDDER

ATTEST:

By _____
County Auditor

Traffic Safety Improvement Program (TSIP) Funds Narrative

Jones County continues to improve its paved road system that serves the county and surrounding areas. Although the focus has been on replacing aged and failing pavements, safety concerns are a major consideration for projects chosen for improvement.

B1. Project Location

On CO RD E28, from CO RD X28 to Buffalo Creek Bridge. The project corridor is listed in the Top 10 of the High-Crash Segment Safety Improvement Candidate Locations in the Jones County Safety Action Plan (SAP).

B2. Existing Conditions

County Road E-28 is a 22-foot-wide pavement with three feet wide granular shoulders that was originally paved in 1975 with two inches of A.C. In 1997 the surface was scarified one and a half inches then resurfaced with one and a half inches of A.C.C. The easterly 2000 feet was replaced with seven inches of P.C. Concrete in 1995 when the Buffalo Creek Bridge was replaced. The length of the project is 2.7 miles.

The roadway is signed for 50 mph and contains several horizontal curves requiring warning signs with reduced speeds. All signs are currently installed according to MUTCD requirements.

B3. Proposed Concept

Local and national research indicates that a high portion of run-off-the-road crashes occur on two lane roadways, and that many of those crashes can be mitigated through the application of low-cost, safety improvements.

Based on the review of existing conditions and accidents, the following improvements have been recommended to enhance safety.

- Centerline and Edgeline rumble strips will provide drivers with tactile and auditory warnings as they are about to leave their lane of travel, providing a quicker reaction time in which to correct their errant direction.
- Re-align horizontal curves with a minimum horizontal curve radius for a 55 design speed (mph) to more safely and comfortably traverse the curved roadway and add recoverable slopes on which a motorist may, to a greater extent, retain or regain control of a vehicle.
- Widen lane widths and add paved shoulder with safety edge throughout entire roadway.
- Access cross slopes throughout the corridor shall be flattened which currently are not safely traversable or may pose a hazard to an errant vehicle.

B4. Justification

The proposed project segment was identified as an eligible High Risk Rural Road (HRRR) corridor. The Jones County SAP identifies this roadway as a High-Crash Segment Safety Improvement Candidate. In the last twenty years there have been multiple serious injury accidents and a fatality. Multiple new homes and a subdivision has been built on this road recently which has increased the traffic and our fear of additional crashes.

A crash analysis and benefit/cost calculation has been performed for three of the proposed safety improvements. Multiple additional safety improvements will be incorporated into this project as detailed above. Consideration for funding for these improvements is greatly appreciated.

COUNTY ROAD E28 GRADE AND PAVE RUN DATE: 8/2/2024 Exhibit C
53-CO53-95 LETTING DATE: 6/16/2026

ITEM DESCRIPTION	UNITS	TOTAL QTY	SAFETY QTY	UNIT PRICE	TOTAL PROJ COST	SAFETY COST
CLEARING AND GRUBBING	ACRE	4	4	$ 7,500	$ 30,000	$ 30,000
CLEARING AND GRUBBING	UNIT	2,000	0	$ 13	$ 25,000	$ -
EMBANKMENT-IN-PLACE	CY	40,000	40,000	$ 10	$ 400,000	$ 400,000
EXCAVATION, CLASS 10, RDWY & BRRW	CY	60,000	0	$ 5	$ 300,000	$ -
TOPSOIL, STRIP, SALVAGE AND SPREAD	CY	15,000	0	$ 8	$ 120,000	$ -
MODIFIED SUBBASE	CY	13,000	0	$ 36	$ 468,000	$ -
GRANULAR SHOULDERS, TYPE B	TON	18,000	0	$ 25	$ 450,000	$ -
SHOULDER CONSTRUCTION, EARTH	STA	280	280	$ 250	$ 70,000	$ 70,000
BRIDGE APPROACH, TWO LANE	SY	200	0	$ 175	$ 35,000	$ -
STD or SF PCC, 8 IN	SY	43,000	9,000	$ 65	$ 2,795,000	$ 585,000
PCC PAVEMENT SAMPLES	LS	1	0	$ 2,500	$ 2,500	$ -
SURFACING, DRIVEWAY	TON	1,000	0	$ 20	$ 20,000	$ -
EXCAVATION, CLASS 20	CY	100	0	$ 20	$ 2,000	$ -
STRUCTURAL CONCRETE	CY	130	0	$ 700	$ 91,000	$ -
REINFORCING STEEL, EPOXY COATED	LB	20,000	0	$ 2	$ 45,000	$ -
APRONS, CONCRETE, 24 IN. DIA.	EA	2	0	$ 1,500	$ 3,000	$ -
CULVERT, RCP, 24 IN. DIA.	LF	1,000	0	$ 125	$ 125,000	$ -
CULVERT, UNCL ENTR PIPE, 18 IN. DIA.	LF	1,500	0	$ 40	$ 60,000	$ -
SUBDRAIN, LONGITUDINAL, 4 IN. DIA.	LF	14,000	0	$ 6	$ 84,000	$ -
SUBDRAIN, OUTLET	EA	25	0	$ 450	$ 11,250	$ -
REMOVAL OF PAVEMENT	SY	34,000	0	$ 8	$ 272,000	$ -
CONSTRUCTION SURVEY	LS	1	0	$ 30,000	$ 30,000	$ -
SAFETY CLOSURE	EA	8	0	$ 500	$ 4,000	$ -
PAINTED PAVEMENT MARKING	STA	600	400	$ 35	$ 21,000	$ 14,000
TRAFFIC CONTROL	LS	1	0	$ 20,000	$ 20,000	$ -
MOBILIZATION	LS	1	0.1	$ 150,000	$ 150,000	$ 15,000
MILLED SHOULDER RUMBLE STRIPS	STA	275	275	$ 80	$ 22,000	$ 22,000
MILLED CENTERLINE RUMBLE STRIPS	STA	125	125	$ 40	$ 5,000	$ 5,000
STABILIZING CROP - SEEDING & FERT	AC	30	0	$ 500	$ 15,000	$ -
SILT FENCE	LF	5,000	0	$ 2	$ 10,000	$ -
MNTC OF SF OR SF FOR DC	LF	1,000	0	$ 1	$ 1,000	$ -
SEDIMENT CONTROL DEVICE, 20 IN. DIA.	LF	20,000	0	$ 3	$ 60,000	$ -
RMVL OF SEDIMENT CNTRL DEVICE	LF	3,000	0	$ 1	$ 3,000	$ -

CONSTRUCTION COST OPINION: $ 5,750,000 $ 1,141,000

SOURCES AND AMOUNTS OF FUNDS FOR PROJECT

TRANSPORTATION SAFETY IMPROVEMENT PROGRAM (TSIP) FUNDS: $ 500,000 9%
JONES COUNTY FARM-TO-MARKET FUNDS: $ 5,250,000 91%

TOTAL ANTICIPATED FUNDING: $ 5,750,000

Time Schedule

The schedule proposed for the project is as follows:

D1.	Submittal of TSIP Application	August 2024
D2.	Proceed with Project Design	August 2024 – December 2024
D3.	Anticipated Approval of TSIP Funds	December 2024
D4.	Final Project Design	March 2025
D5.	Safety Funds become Available	July 2025
D6.	Project Letting	March 2026
D7.	Construction Begins	July 2026
D8.	Project Completion	November 2026

Location Map

Jones - ICEASB Easy Map

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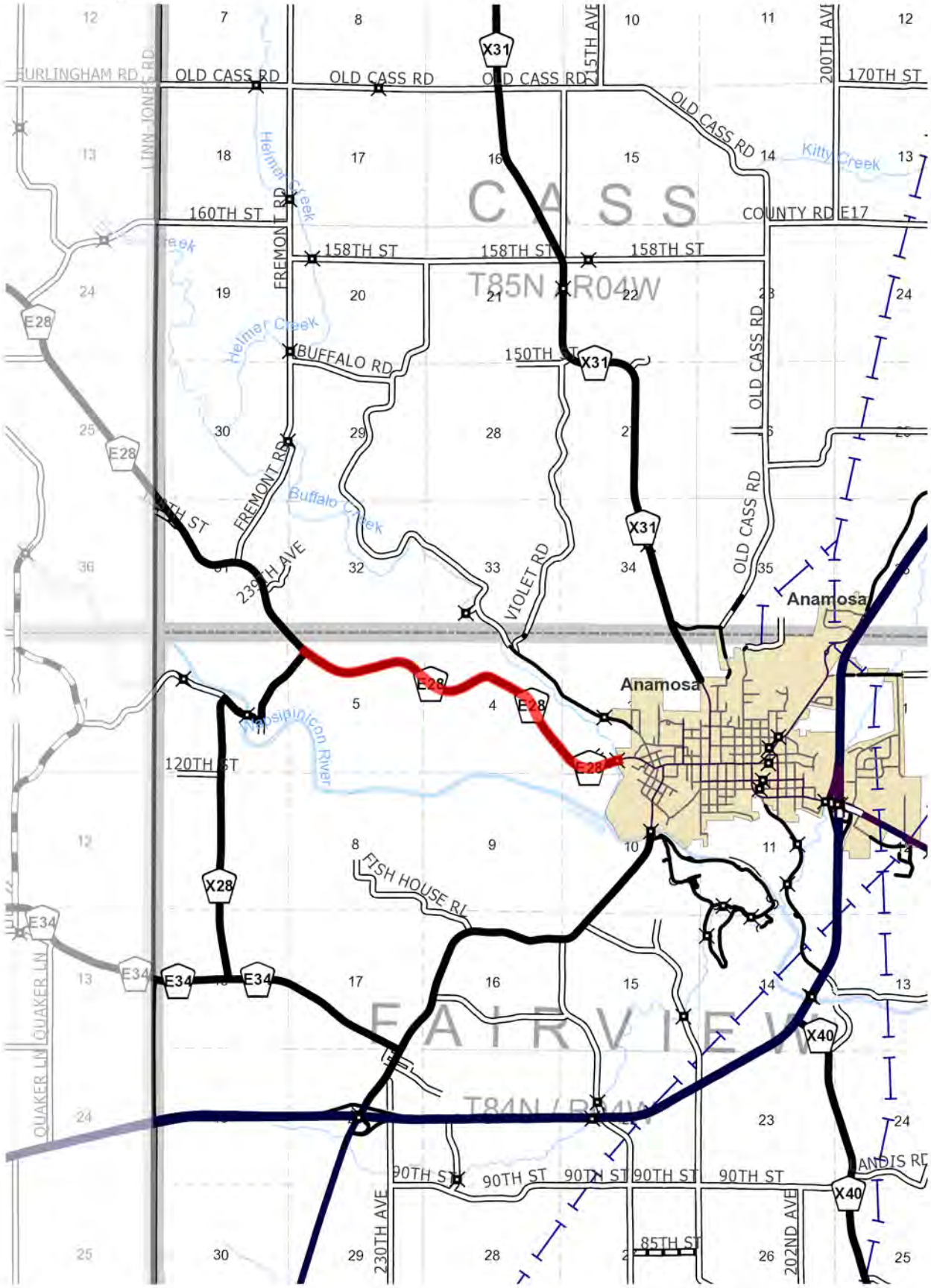

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Color Pictures of the Project Site

PHOTO 01. *Station 120+50 looking West*

PHOTO 02. *Station 138+00 Looking East*

PHOTO 03. *Station 183+00 Looking West*

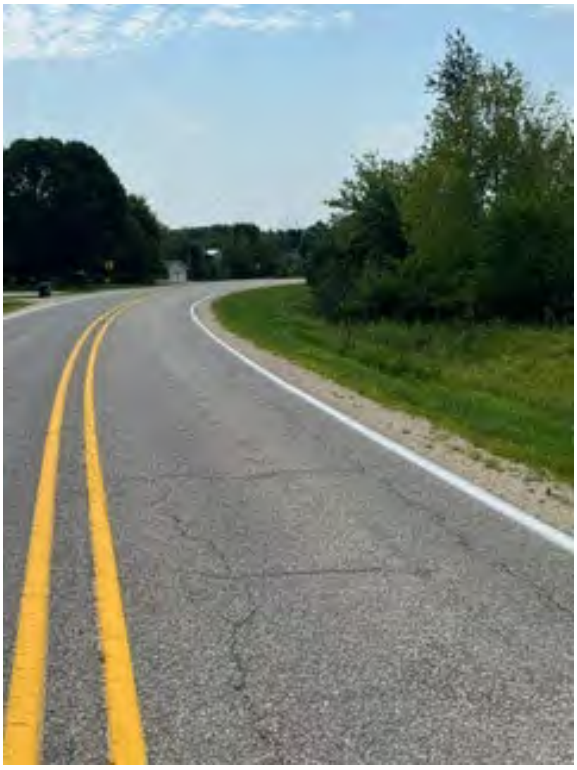
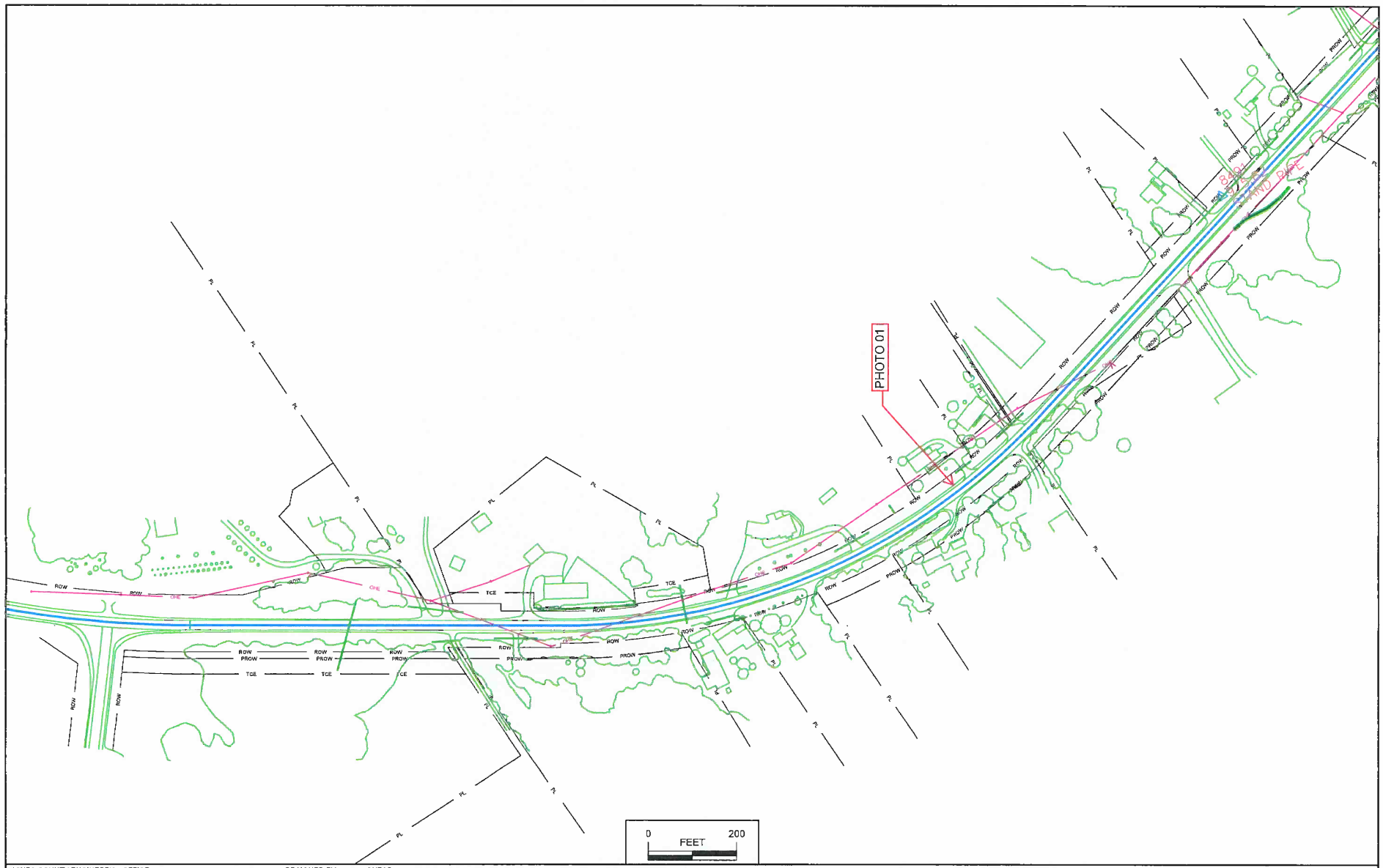


PHOTO 04. *Station 193+00 Looking East*

Exhibit G.1



JONES COUNTY ENGINEER'S OFFICE
ANAMOSA, IOWA (319) 462-3785

DESIGNED BY: SNEAD
CHECKED BY:

JONES COUNTY

PROJECT NO. STP-S-CO53(95)--5E-53

SHEET NUMBER G.01

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Exhibit G.2

JONES COUNTY ENGINEER'S OFFICE
ANAMOSA, IOWA (319) 462-3785

DESIGNED BY: SNEAD
CHECKED BY:

JONES COUNTY

PROJECT NO. STP-S-CO53(95)--5E-53

SHEET NUMBER G.02

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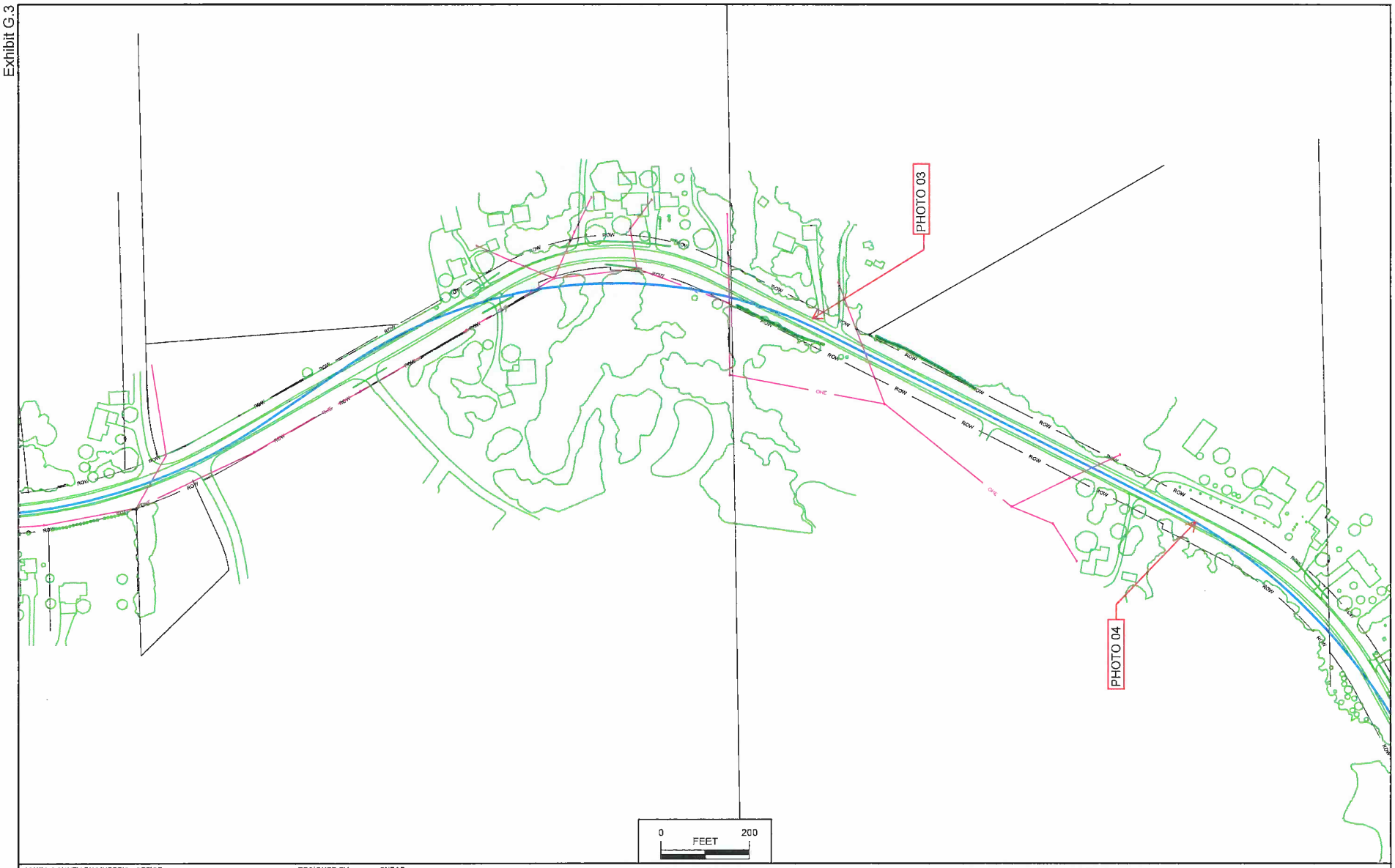

JONES COUNTY ENGINEER'S OFFICE
ANAMOSA, IOWA (319) 462-3785

DESIGNED BY: SNEAD
CHECKED BY:

JONES COUNTY

PROJECT NO. STP-S-CO53(95)--5E-53

SHEET NUMBER G.03

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Exhibit G.4

JONES COUNTY ENGINEER'S OFFICE
ANAMOSA, IOWA (319) 462-3785

DESIGNED BY: SNEAD
CHECKED BY:

JONES COUNTY

PROJECT NO. STP-S-CO53(95)--5E-53

SHEET NUMBER G.04

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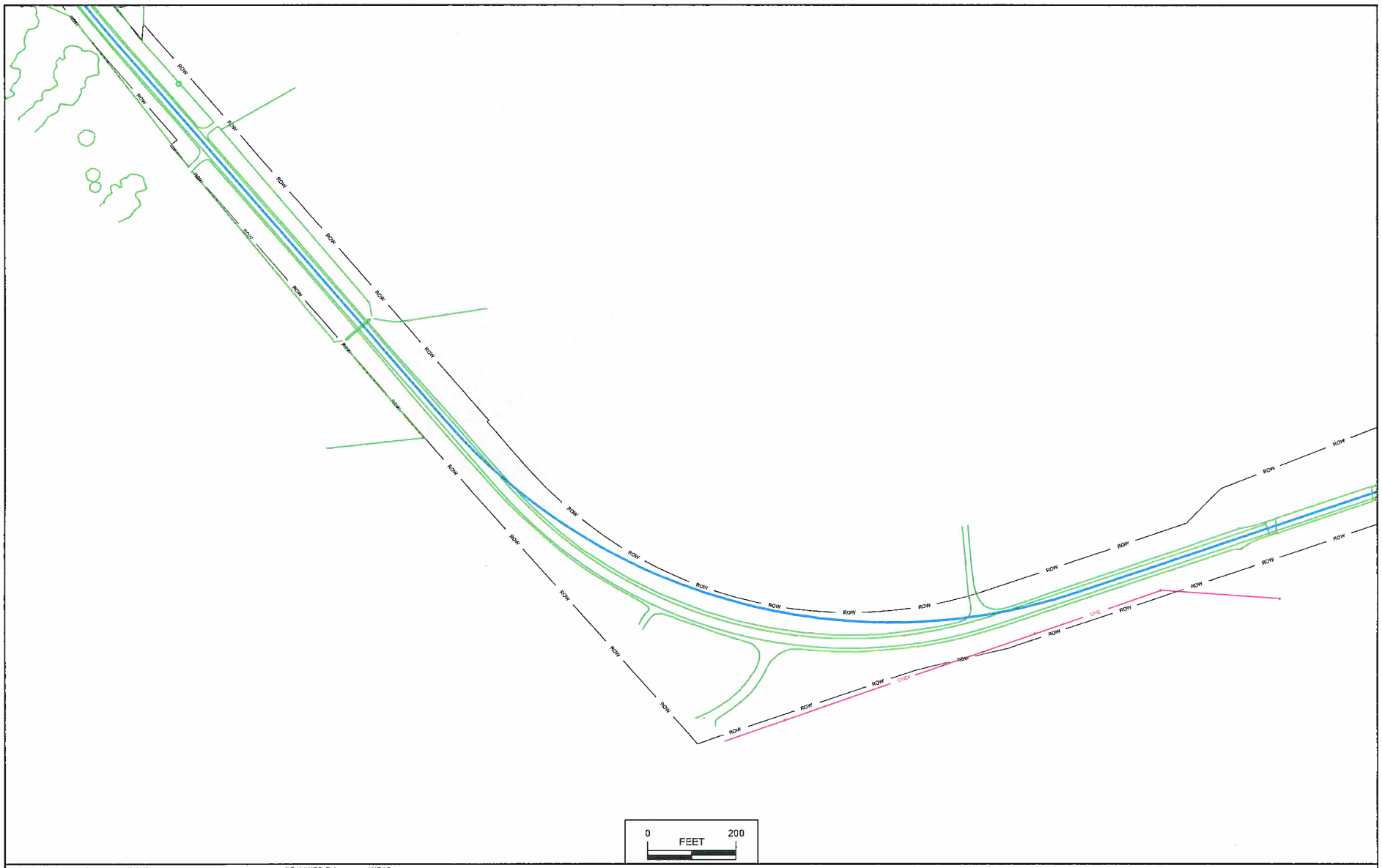
Exhibit G.5



JONES COUNTY ENGINEER'S OFFICE
ANAMOSA, IOWA (319) 462-3785

DESIGNED BY: SNEAD
CHECKED BY:

JONES COUNTY

PROJECT NO. STP-S-CO53(95)--5E-53

SHEET NUMBER G.05

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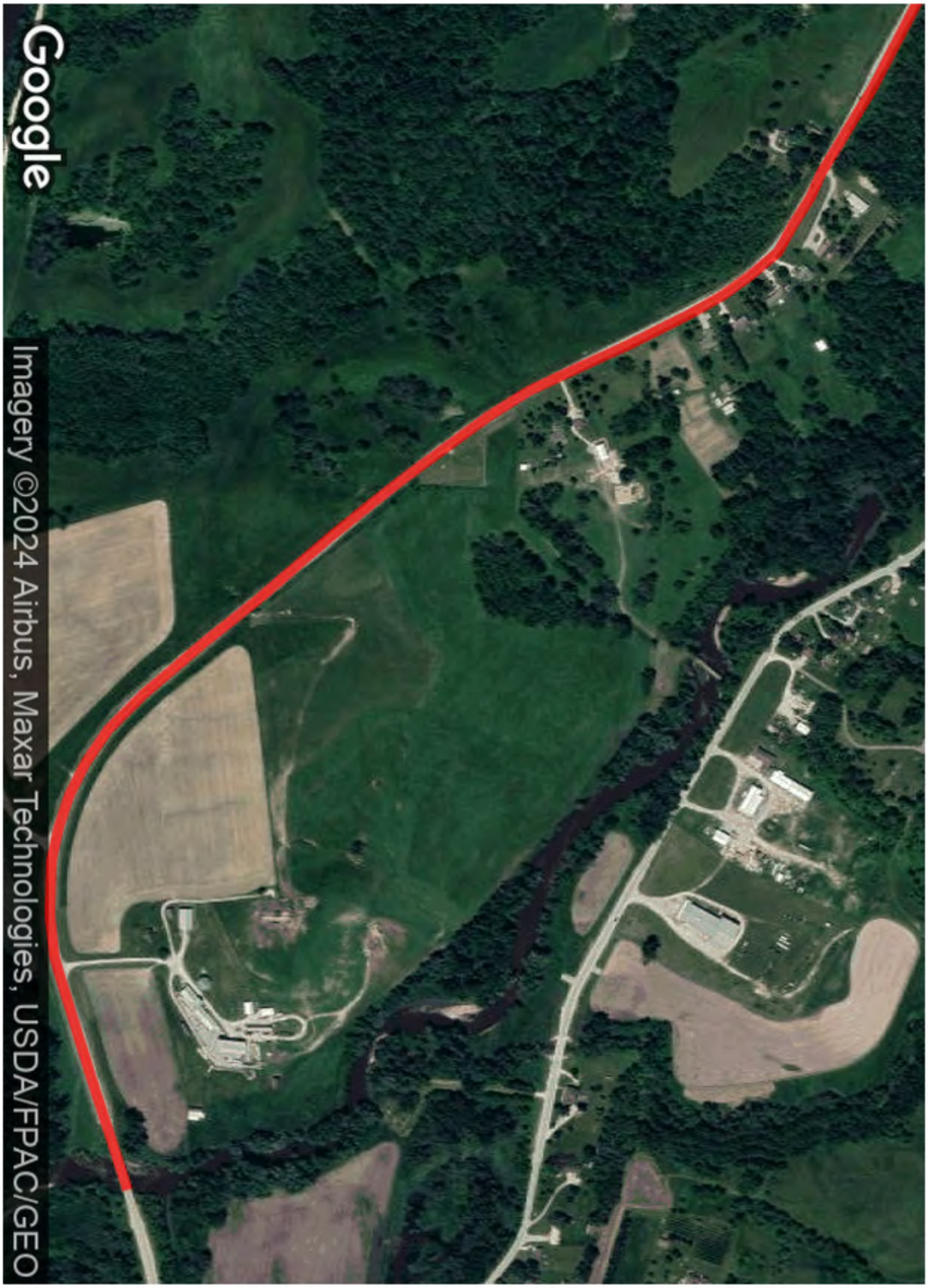

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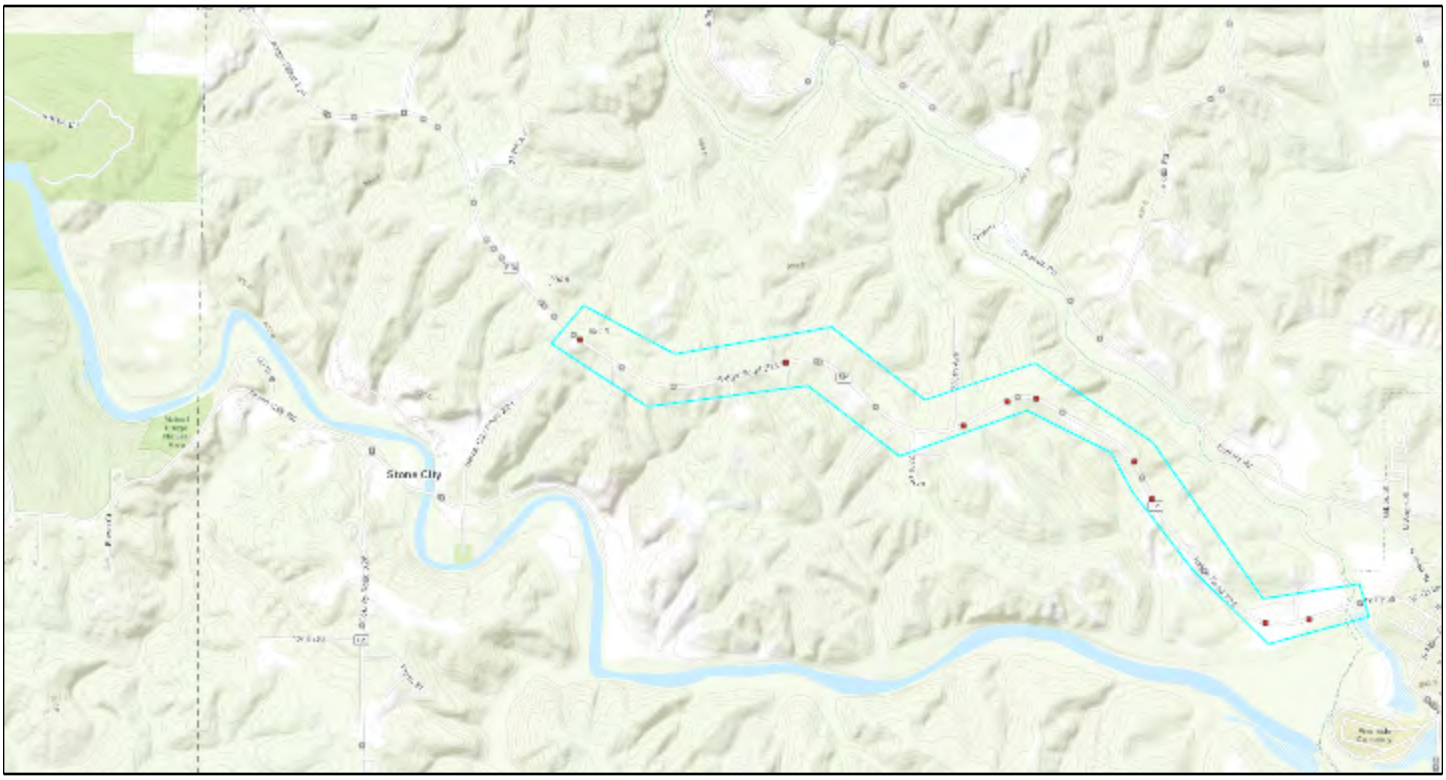
Iowa Crash Analysis Tool
Quick Report
2019-2023

Crash Severity	9
Fatal Crash	0
Suspected Serious Injury Crash	0
Suspected Minor Injury Crash	0
Possible/Unknown Injury Crash	0
Property Damage Only	9

Injury Status Summary	7
Fatalities	0
Suspected serious/incapacitating	0
Suspected minor/non-incapacitating	0
Possible (complaint of pain/injury)	0
Uninjured	0
Unknown	0
Not Reported	7

Property/Vehicles/Occupants	
Property Damage Total (dollars):	43,100.00
Average (per crash dollars):	4,788.89
Total Vehicles:	10.00
Average (per crash):	1.11
Total Occupants:	11.00
Average (per crash):	1.22

Average Severity	
Fatalities/Fatal Crash:	0.00
Fatalities/Crash:	0.00
Injuries/Crash:	0.00
Major Injuries/Crash:	0.00
Minor Injuries/Crash:	0.00
Possible/Unknown Injuries/Crash:	0.00



Safety Action Plan

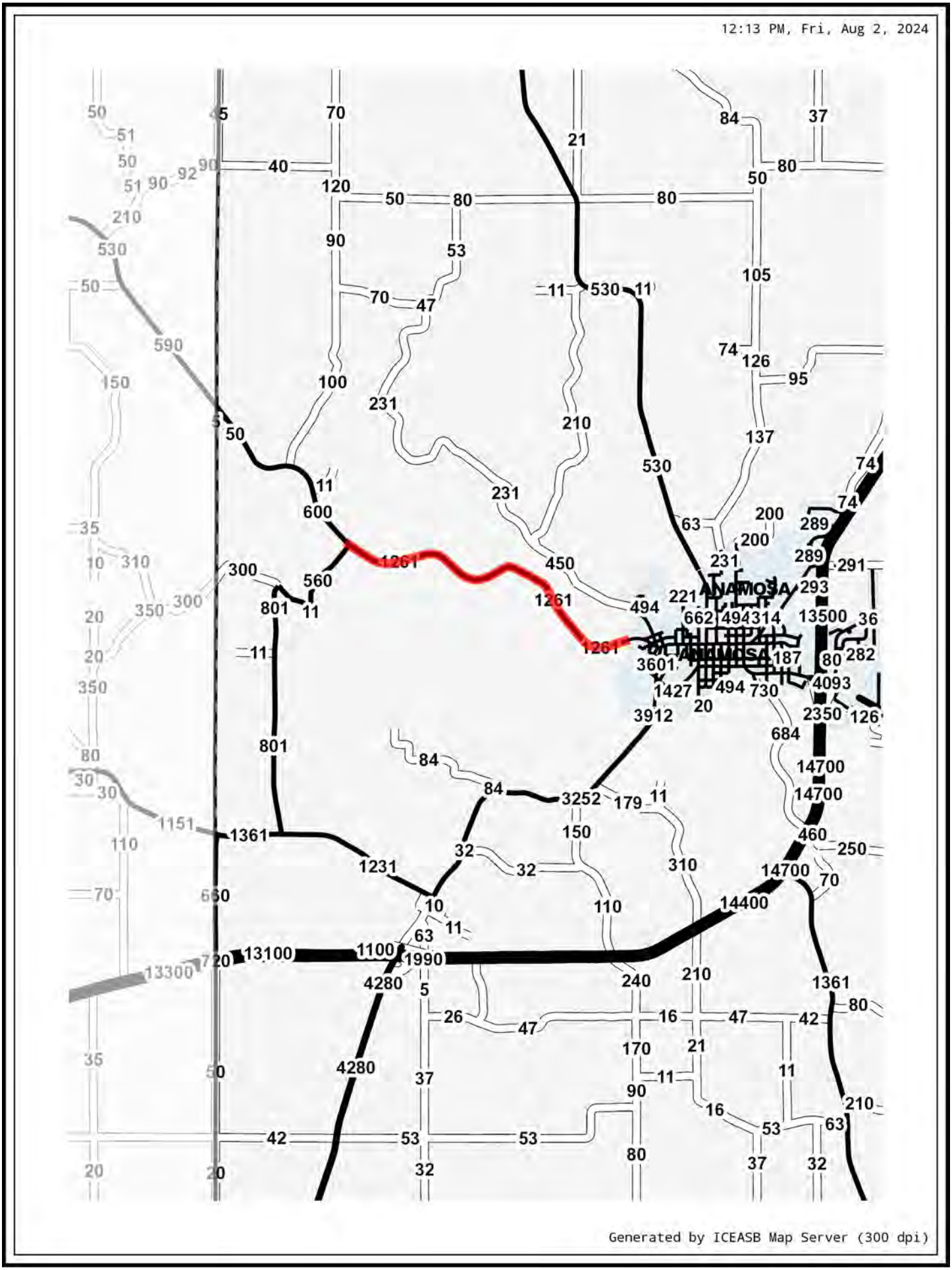
JONES COUNTY HIGH-CRASH LOCATIONS

While the intent of the Safety Action Plan (SAP) is to identify systemic safety improvements at segments, intersections, and curves throughout the county, the following tables provide a list of high-crash locations for reference. The Iowa DOT Safety Improvement Candidate Location (SICL) methodology was followed to identify these high-crash locations. For the purposes of this project, the SICL methodology included 10 years of crash data and was modified and applied to segments and curves to normalize the analysis by crashes per mile. Due to these modifications, the crash locations in the following table will differ from the published Iowa DOT SICL list.

High-crash location table with a list of roadway segments (Table 1) with high-crash frequency were developed for the county. This data is from Iowa Crash Analysis Tool (ICAT) 2014 -2023.

Table 1 – High-Crash Segment Safety Improvement Candidate Locations

Rank	GPS ID	Segment	Length (mi)
1	4848	SHAW ROAD	1.47
2	4842	COUNTY ROAD E34	3.27
3	4839	LINN-JONES ROAD	1.03
4	4862	OLD US 151 SIGNED ROUTE	0.87
5	4851	COUNTY ROAD X40	5.48
6	4859	LANGWORTHY ROAD	1.09
7	4888	RIDGE ROAD E28	4.46
8	4884	FAIRVIEW ROAD	1.96
9	4880	COUNTY ROAD E45	4.82
10	4841	COUNTY ROAD X28	3.01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Safety Benefit-Cost Ratio

County:	Jones	Prepared By:	Derek Snead
Location:	CO RD E28	Date Prepared:	8/2/2024
Proposed Improvements:	Install Centerline and Edgeline/Shoulder Rumble Strips (20 CRF), 6-inch edgeline pavement markings (7 CRF), and Safety Edge (6 CRF)		
Estimated Improvement Cost:	$ 240,000		
Inflation on Crash Costs:	4%	Annual Maintenance: (% of Improvement Cost)	2%
Discount Rate:	4%		
Estimated Service Life:	20	Annual Maintenance Cost:	$ 4,800
Method Choice:	CRF Method		

The Crash Reduction Factor (CRF) Method applies one to three CRFs to historical crashes to estimate reductions in future crashes. Crash Modification Factors (CMFs) can be converted to CRFs. For additional information, click the "Learn More" button.

Crash Reduction Factor (CRF) Method

Traffic Growth Factor:	1%
Number of CRFs:	3
Years of Crash History:	5

Combined CRF (Dominant Common Residuals Method)

Iowa DOT's preferred methodology for combining CRFs is Dominant Common Residuals, since it is more conservative than the other options.

	CRF 1:	CRF 2:	CRF 3:	**Combined CRF**
CRF Value (%)	20	7	6	**24.9**

Crash Severity	Rounded Societal Costs	Crash History (Total):	CRF (from above)	Crash History - Annual Avg	Crashes Saved Annually
Fatal (K)	$ 4,200,000	0	24.9	**0.00**	**0.00**
Serious Injury (A)	$ 4,200,000	0	24.9	**0.00**	**0.00**
Minor Injury (B)	$ 280,000	0	24.9	**0.00**	**0.00**
Possible/Unknown Injury (C)	$ 130,000	0	24.9	**0.00**	**0.00**
Property Damage Only (O)	$ 20,000	9	24.9	**1.80**	**0.45**

Crash Severity	Annual Societal Benefit
Fatal (K)	**$ -**
Serious Injury (A)	**$ -**
Minor Injury (B)	**$ -**
Possible/Unknown Injury (C)	**$ -**
Property Damage Only (O)	**$ 8,956**

Total Benefits and Costs

		Implementation Cost	$ 240,000
		Present Value of Maint.	$ 65,234
Present Value Benefits (Societal Benefits)	$ 132,294	Present Value Costs (Impl. and Maint. Costs)	$ 305,234
Present Value Net Return	$ (172,940)		
Benefit Cost Ratio	**0.43**		

Form continues on next page

County:	Jones	Prepared By:	Derek Snead
Location:	CO RD E28	Date Prepared:	8/2/2024

No Input Necessary - No Custom Values In Use

General Customizations

No change to Crash Costs

No change to Discount Rate

No change to Maintenance Costs

Method-Specific Customizations

No change to Traffic Growth Rate

No change to Crash History

Rev. 5/18

Application for SITE-SPECIFIC TSIP FUNDS

GENERAL INFORMATION **DATE:** 8-14-2024

Location / Title of Project Ellis Road & Covington Rd Intersection Improvements (Roundabout)

Applicant Linn County Secondary Roads Department

Contact Person Garret Reddish, PE Title Assistant Engineer II

Complete Mailing Address 1888 County Home Road

Marion, IA 52302

Phone 319-892-6400 (Area Code) E-Mail garret.reddish@linncountyiowa.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) City of Cedar Rapids

Contact Person Marcus Januario, PE Title Traffic Engineer II

Complete Mailing Address 500 15th Ave SW

Cedar Rapids, IA 52404

Phone 319-286-5729 (Area Code) E-Mail M.Januario@Cedar-Rapids.org

PLEASE COMPLETE THE FOLLOWING PROJECT INFORMATION:

Funding Amount

Total Safety Cost	$ 1,600,277
Total Project Cost	$ 1,655,027
Safety Funds Requested	$ 500,000

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 Linn County Secondary Road Department

Signed: _____ 8-14-2024
Signature Date Signed

Garret Reddish, PE
Printed Name

Attest: _____ 8-14-2024
Signature Date Signed

Brad Ketels, PE
Printed Name

SECONDARY ROADS FIVE YEAR PROGRAM

Iowa Department of Transportation

SECONDARY ROADS FIVE YEAR PROGRAM

County: **Linn County**
Fiscal Year: **2025**
Version: **Original**

COUNTY CERTIFICATION

The detailed construction program for the secondary road system was adopted by the Board of Supervisors on 4-10-24
Date

ATTESTED

Joel Miller by Rebecca Shoop, Deputy — 4-10-24
County Auditor — Date

[illegible] — 4/8/2024
County Engineer — Date

Kirsten Roy-Margrave
Chairperson, Board of Supervisors — Date

IOWA DOT PROGRAM APPROVALS

Recommended Approval: _____ _____
OLS Reviewer — Date

Approval: _____ _____
Director of Local Systems — Date

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SECONDARY ROADS FIVE YEAR PROGRAM

Project Number Project Name Project ID	Location Description of Work Section / Township / Range	AADT Length Federal ID	Status FM Transfer	Day Labor Type of Work Project Type	Fund	Accomp Year FY 2025	Priority Years 1st FY 2026	2nd FY 2027	3rd FY 2028	4th FY 2029	Total
FM-TSF-C057(169)--5B-57 FM-TSF-C057(169)--5B-57 52242	On Covington Rd at Ellis Rd intersection Roundabout at intersection of Covington Rd and Ellis Rd. Participation required from City of Cedar Rapids for project to move forward.	1337 0.000 miles	Previous	$0 352 Excavation Special	Local FM Special FA SWAP		500 1,000				$1,500
FM-C057(BR 762)--55-57 FM-C057(BR 762)-27 47034	On Sutton Rd, Over Wapsipinicon River, S19 T86 R06 Concrete beam bridge replacement. 19 / 86 / 06	138 0.000 miles 223020	Previous	$0 320 Bridges FM	Local FM Special FA SWAP			1,500			$1,500
BROS-C057(BR 2063)--8J-57 BROS-C057(BR 2063)--8J-57 53111	On Durow Rd, Over Blue Creek, S31 T86 R08 Concrete beam bridge replacement. 31 / 86 / 08	151 0.000 miles 223450	Previous	$0 320 Bridges FA	Local FM Special FA SWAP			1,300			$1,300
L-BRIDGE 13--73-57 LOST-BRIDGE 13(27) 53113	On Spanish Rd, Over S Hoosier Creek, S35 T82 R07 Timber bridge replacement. 35 / 82 / 07	140 0.000 miles 220351	Previous	$0 320 Bridges Local	Local FM Special FA SWAP			300			$300

Council Agenda Item Cover Sheet

Submitting Department: Public Works
Director Contact: Brenna Fall – b.fall@cedar-rapids.org – (319) 270-7661

Presenter at Meeting: Cari Pauli, PE

Description of Agenda Item: Purchases, contracts and agreements
Resolution authorizing the application for a Transportation Safety Improvement Program grant from the Iowa Department of Transportation for safety and operational improvements at the intersection of Ellis Road and Covington Road
CIP/DID #60-25-003

Council Priority: Clean and Safe City
EnvisionCR Goal: ConnectCR Goal 4: Improve the function and appearance of our key corridors.

Background: The Iowa Department of Transportation (Iowa DOT) has established the Transportation Safety Program (TSIP), which provides funding for locations where vehicular safety is a concern and documented. The described intersection of Ellis Road and Covington Road does not currently have a significant number of crashes but is within area of high growth. The installation of a roundabout is a proactive measure to avoid high crash incidence as the number of trips continue to increase.

Recommended Action: The Public Works Department recommends approving the application for TSIP grant funding from the Iowa DOT, which will be used to construct a roundabout at the intersection of Ellis Road and Covington Road.

Alternative: Should Council determine not to approve this resolution, the application for TSIP grant funding will not be submitted to the Iowa DOT and the current lane configuration at the intersection of Ellis Road and Covington Road will remain as two-way stop-control.

Time Sensitivity: If approved, the TSIP funds will be available on July 1, 2025.

Resolution Date: July 23, 2024

Budget Information: NA

Local Preference Policy: Not applicable
Explanation: NA

Recommended by Council Committee: Not applicable
Explanation: NA

Background: The intersection of Ellis Road and Covington Road is located on the northwest side of Cedar Rapids. Ellis Road, the east-west road, is a 40-mph, 24' wide roadway that serves as a scenic route east of Covington Road and 45-mph collector road west of Covington Road. Covington Road, the north-south road, is a 55-mph, 24' wide minor arterial roadway that connects the northwest side of the City of Cedar Rapids to Hwy 100. The intersection is a two-way stop-control (TWSC) at the Ellis Road approaches (east and west).

AADTs in 2021 are reported as 5,800 vehicles per day (vpd) and 1,580 vpd on Covington Road and Ellis Road, respectively. The intersection is located in an area that has grown fast in the last 10 years, with an annual growth rate of about 4.6%. This growth rate is expected to maintain the current rate for the near future, especially after the opening of the northwest arch of Highway 100, connecting I-380 to US 30, and making Covington a main connection between Highway 100 and downtown Cedar Rapids.

At the intersection, Ellis Road is a straight east-west road, but Covington Road curves at the intersection, impacting the sight distance, which is worsened by the presence of vegetation on the northwest quadrant, and by Covington Road's crest, which is about a hundred feet farther north.

Crash History: Ellis Road has had 28 reported crashes in the past 10 years, excluding animal-related crashes, with three of them being a suspected serious injury crash, five a minor injury crash, six a possible/unknown injury crash, and fourteen being property-damage only crashes. Eleven crashes had Fail to Yield Right-of-Way (FTYROW) from yield sign as the major cause. The mostly represented manners of collision were broadside (front to side) with fourteen crashes, and rear-end (front to rear) with seven crashes. Most crashes were in dry conditions with twenty-two crashes. The calculated crash rate is 1.04 crashes per 1 million Entering Vehicles (MEV), which is above the statewide average (0.7) for similar intersections.

Project Proposal: The project is a joint effort between the City of Cedar Rapids and Linn County. The proposal includes to replace the existing two-way stop-control intersection with a single-lane roundabout. As part of the roundabout design, the sight distance will also be improved by shifting the approaches to reduce the impact of both vertical and horizontal curves.

Crashes rates are already higher than the statewide average crash rate for similar intersections. Additionally, traffic volumes are expected to more than double until 2025, the design year, which may heavily impact the crash frequency, rate, and severity at the intersection. The installation of a roundabout is expected to substantially reduce crashes at this intersection, providing safer operations standards.

CMFs found for replacing a two-way stop-control intersection with a roundabout lists CMFs varying from 0.12 to 0.42, showing a decrease of 58% to 88% in crashes. In this study, a more optimistic and widely used CMF of 0.12, which corresponds to an 88% crash reduction being used to account for the uncertainty of a region where the traffic volumes are expected to grow at almost 5% annually.

The high rate of crash reduction results in a calculated Benefit/Cost Ratio of 12.08 (calculations included in Exhibit L, using the IDOT-provided spreadsheet).

Covington Rd & Ellis Rd - Roundabout

Item no.	Item	Unit	Unit Price	Quantity	Safety Cost	Non Participating Cost	Total Cost
1	CLEARING AND GRUBBING	LS	$21,500.00	1.0	$21,500.00	$0.00	$21,500.00
2	TOPSOIL, OFF-SITE	CY	$38.00	96.3	$3,659.26	$0.00	$3,659.26
3	EXCAVATION, CLASS 10	CY	$9.00	4636.9	$41,732.32	$0.00	$41,732.32
4	SUBGRADE PREPARATION	LS	$41,000.00	1.0	$41,000.00	$0.00	$41,000.00
5	SUBBASE, MODIFIED, 12-INCH	SY	$7.00	8897.4	$62,282.01	$0.00	$62,282.01
6	SANITARY SEWER IMPROVEMENTS	LS	$25,500.00	1.0	$25,500.00	$0.00	$25,500.00
7	STORM SEWER IMPROVEMENTS	LS	$131,250.00	1.0	$131,250.00	$0.00	$131,250.00
8	WATER MAIN IMPROVEMENTS	LS	$90,500.00	1.0	$90,500.00	$0.00	$90,500.00
9	REMOVAL OF PAVEMENT	SY	$11.00	6430.4	$70,734.28	$0.00	$70,734.28
10	PAVEMENT, PCC, 9-INCH, CLASS C	SY	$77.00	8897.4	$685,102.11	$0.00	$685,102.11
11	REMOVAL OF SIDEWALK	SY	$12.00	0.0	$0.00	$0.00	$0.00
12	SIDEWALK, PCC, 5-INCH	SY	$55.00	0.0	$0.00	$0.00	$0.00
13	SIDEWALK, PCC, 6-INCH	SY	$60.00	3212.3	$192,736.60	$0.00	$192,736.60
14	DETECTABLE WARNING	SF	$25.00	320.0	$8,000.00	$0.00	$8,000.00
15	DECORATIVE PAVERS WITH PCC PAVER BASE	LS	$60,000.00	0.0	$0.00	$0.00	$0.00
16	REMOVAL OF DRIVEWAY	SY	$12.00	86.1	$1,033.04	$0.00	$1,033.04
17	DRIVEWAY, PAVED, PCC, 6-INCH	SY	$65.00	86.1	$5,595.63	$0.00	$5,595.63
18	TEMPORARY DRIVEWAY, GRANULAR	SY	$25.00	86.1	$2,152.17	$0.00	$2,152.17
19	PAVEMENT MARKINGS AND SIGNAGE	LS	$25,000.00	1.0	$25,000.00	$0.00	$25,000.00
20	TRAFFIC CONTROL	LS	$15,000.00	1.0	$15,000.00	$0.00	$15,000.00
21	RECTANGULAR RAPID FLASHING BEACON	EA	$7,500.00	8.0	$60,000.00	$0.00	$60,000.00
22	SWPPP PREPARATION / COMPLIANCE	LS	$22,500.00	1.0	$22,500.00	$0.00	$22,500.00
23	CONSTRUCTION SURVEY	LS	$20,000.00	1.0	$0.00	$20,000.00	$20,000.00
24	MOBILIZATION	LS	$95,000.00	1.0	$95,000.00	$0.00	$95,000.00
25	RIGHT OF WAY ACQUISITION	AC	$291,098.00	0.1	$0.00	$34,749.99	$34,749.99
					----------	----------	----------
			TOTAL:		$1,600,277.42	$54,749.99	$1,655,027.41
			CONTINGENCY (10%)		$160,027.74	$5,475.00	$165,502.74
			TOTAL COST OPINION		**$1,760,305.16**	**$60,224.99**	**$1,820,530.15**

Time Schedule for Proposed Project

Ellis Road NW Guardrail Improvements

August 15, 2024	**--**	**TSIP application deadline**
January 15, 2025	**--**	**TSIP approval**
July 2, 2025	**--**	**City Council approval**
October 16, 2025		**Local Bid Letting for Project**
April 7, 2026	**--**	**Early Start Date**
June 2, 2026	**--**	**Begin roundabout construction.**
October 31, 2026	**--**	**Project complete.**

Ellis Road & Covington Road Intersection

TSIP Application

EXHIBIT E - LOCATION MAP

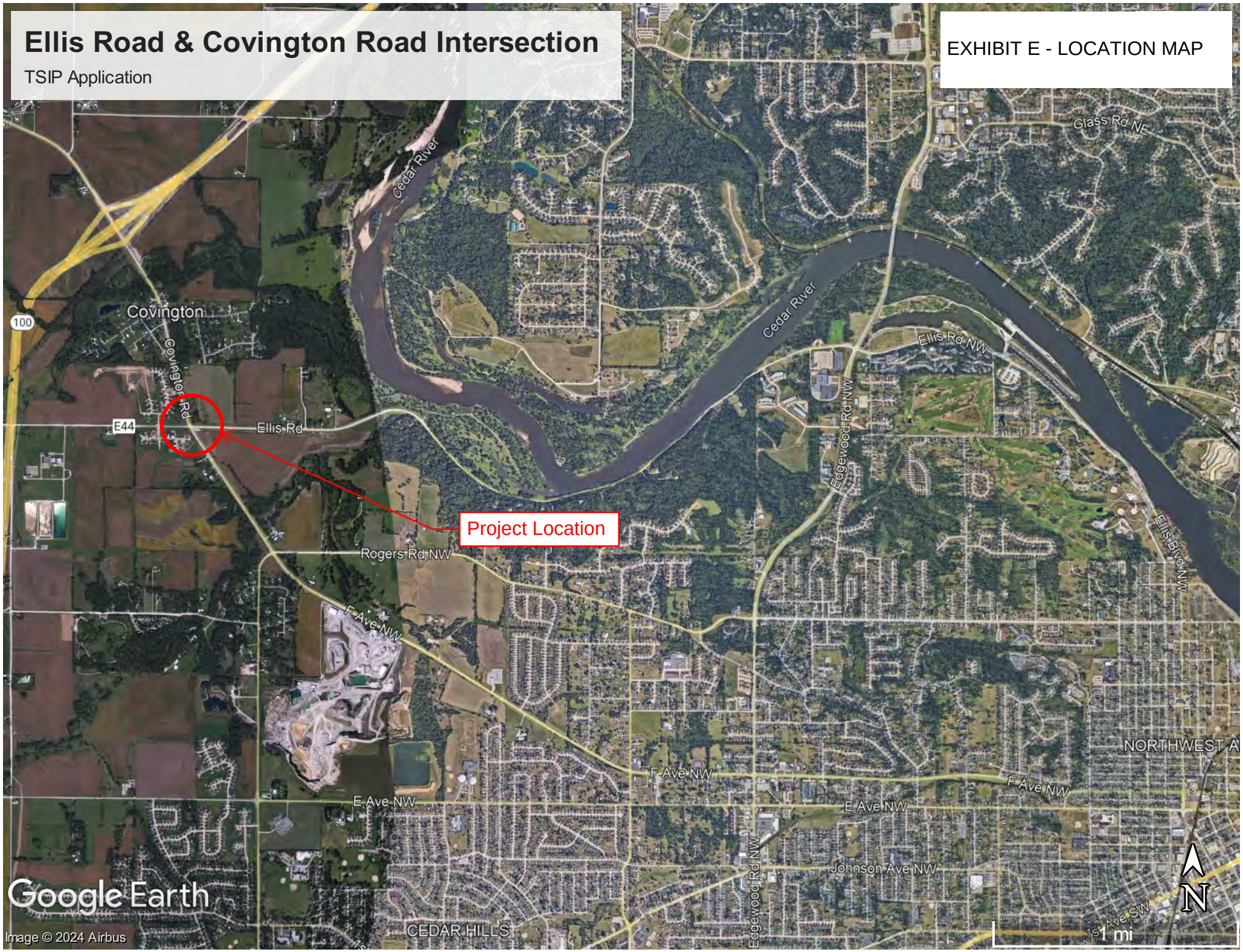


Figure 1 – Looking west from Ellis Road

Figure 2- Looking east from Ellis Road

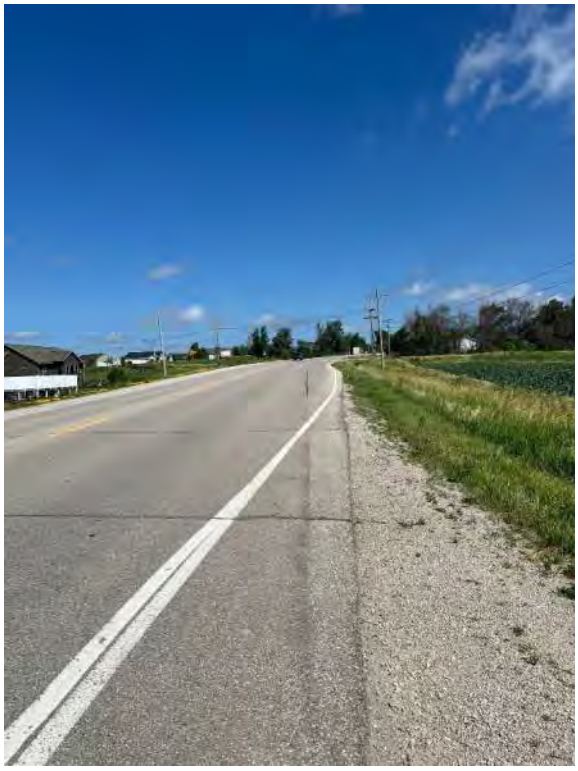
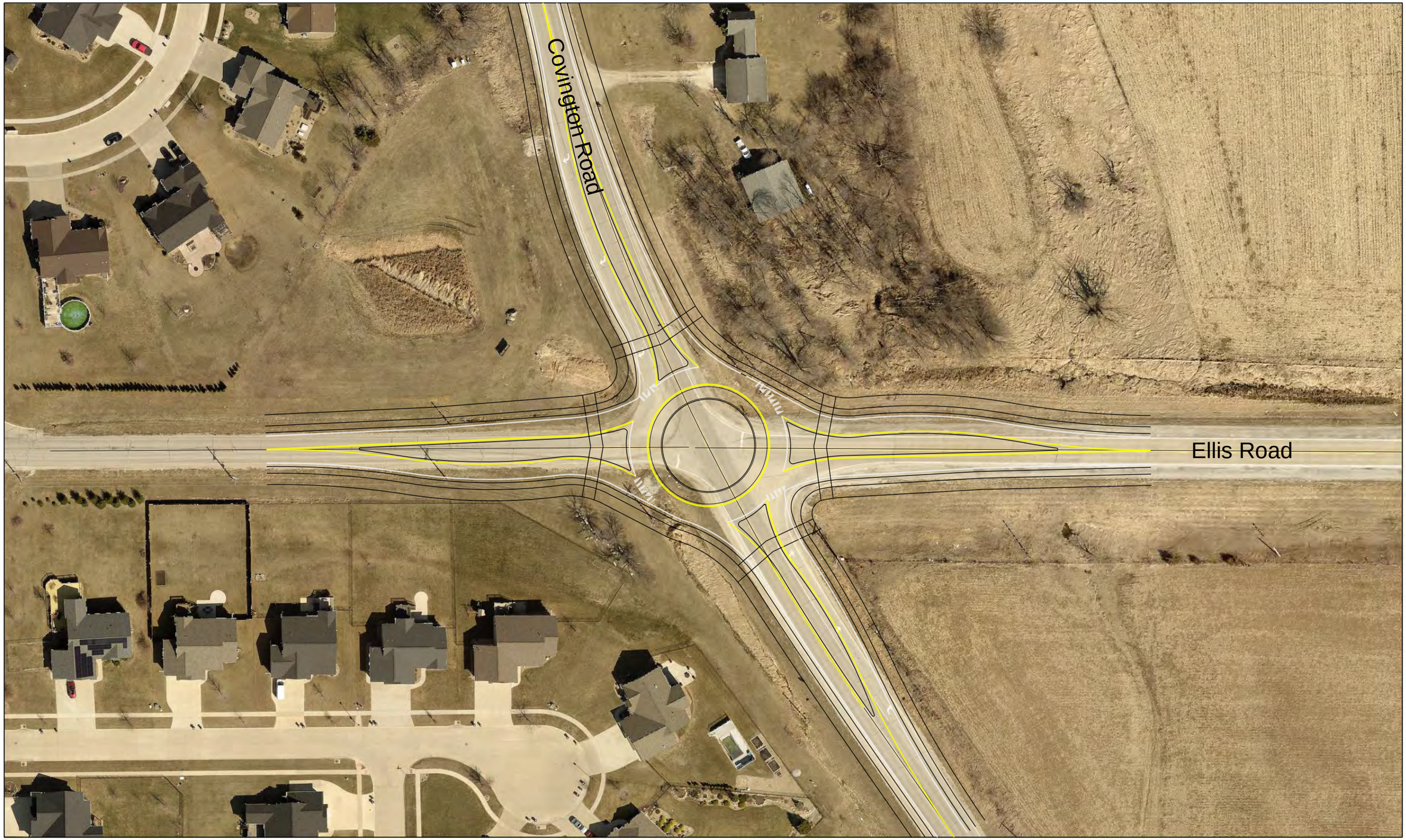


Figure 3 – Looking north from Covington Rd

Figure 4 – Looking south from Covington Rd

Figure 5 – Looking west from Ellis Road

Figure 6 – Looking south from Covington Rd



PREPARED BY:

CITY OF CEDAR RAPIDS, PUBLIC WORKS
500 15TH AVENUE SW, CEDAR RAPIDS, IA 52404
PHONE: 319-286-5802

No.	REVISION DESCRIPTION	APPROVED	DATE
XX	DESCRIPTION	XXX	MM/DD/YYYY

CEDAR RAPIDS
City of Five Seasons

Date:	05/02/2024
Drawn By:	MBoyer
Approved By:	RGGriffith
CIP No:	

Covington Road at Ellis Boulevard

PROPOSED ROUNDABOUT LAYOUT

SHEET No.
EX.1
EX.1

Plot Date: ---
File Name: \\cityor.local\sharedocs\pwtraffic\locations\nw\covington rd at ellis rd\cad\dgn\covington border.dgn

Proposed Intersection Improvement
Ellis Road & Covington Road

Exhibit H - Aerial View

Iowa Crash Analysis Tool
Quick Report
2014-2023

Crash Severity	28
Fatal Crash	0
Suspected Serious Injury Crash	3
Suspected Minor Injury Crash	5
Possible/Unknown Injury Crash	6
Property Damage Only	14

Injury Status Summary	20
Fatalities	0
Suspected serious/incapacitating	4
Suspected minor/non-incapacitating	6
Possible (complaint of pain/injury)	9
Uninjured	0
Unknown	0
Not Reported	1

Property/Vehicles/Occupants	
Property Damage Total (dollars):	305,500.00
Average (per crash dollars):	10,910.71
Total Vehicles:	52.00
Average (per crash):	1.86
Total Occupants:	72.00
Average (per crash):	2.57

Average Severity	
Fatalities/Fatal Crash:	0.00
Fatalities/Crash:	0.00
Injuries/Crash:	0.68
Major Injuries/Crash:	0.14
Minor Injuries/Crash:	0.21
Possible/Unknown Injuries/Crash:	0.32

Major Cause			28
Animal	0	Ran traffic signal	0
Ran stop sign	2	Failed to yield to emergency vehicle	0
FTYROW: At uncontrolled intersection	0	FTYROW: Making right turn on red signal	0
FTYROW: From stop sign	11	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	1	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	2
Exceeded authorized speed	0	Improper or erratic lane changing	0
Operating vehicle in an reckless/erratic/care...	0	Followed too close	4
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	1	Ran off road - right	1
Ran off road - straight	0	Ran off road - left	3
Lost control	0	Swerving/Evasive Action	1
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	1	Not reported	0
Other: No improper action	1		

Iowa Crash Analysis Tool
Quick Report
2014-2023

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	1	1	0	0	0	0	0	2
Monday	0	0	0	2	0	0	0	1	1	0	0	0	0	4
Tuesday	0	0	0	1	0	0	0	1	1	0	1	0	0	4
Wednesday	0	0	0	1	1	1	1	0	5	0	0	0	0	9
Thursday	0	0	0	1	0	0	1	2	0	0	0	0	0	4
Friday	0	0	0	0	0	0	0	0	1	0	1	0	0	2
Saturday	0	0	0	1	0	0	0	0	1	0	1	0	0	3
Total	0	0	0	6	1	1	3	5	9	0	3	0	0	28

Manner of Crash Collision	**28**
Non-collision (single vehicle)	6
Head-on (front to front)	0
Rear-end (front to rear)	7
Angle (oncoming left turn)	0
Broadside (front to side)	14
Sideswipe (same direction)	0
Sideswipe (opposite direction)	0
Rear to rear	0
Rear to side	0
Not reported	1
Other	0
Unknown	0

Surface Conditions	**28**
Dry	22
Wet	4
Ice/frost	1
Snow	0
Slush	0
Mud/dirt	0
Water (standing or moving)	0
Sand	0
Oil	0
Gravel	0
Not reported	1
Other	0
Unknown	0

Fixed Object Struck			**52**
Bridge overhead structure	0	Bridge pier or support	0
Bridge/bridge rail parapet	0	Curb/island/raised median	0
Ditch	6	Embankment	0
Ground	0	Culvert/pipe opening	2
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	1
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)	43

Driver Age/Driver Gender					
Driver Age - 5 year Bins	Female	Male	Not reported	Unknown	**Total**
< 14	0	0	0	0	0
= 14	0	1	0	0	1
= 15	0	0	0	0	0
= 16	0	0	0	0	0
= 17	0	0	0	0	0
= 18	1	0	0	0	1
= 19	0	3	0	0	3
= 20	0	0	0	0	0
>= 21 and <= 24	1	1	0	0	2
>= 25 and <= 29	4	4	0	0	8
>= 30 and <= 34	3	3	0	0	6
>= 35 and <= 39	3	0	0	0	3
>= 40 and <= 44	4	4	0	0	8
>= 45 and <= 49	3	1	0	0	4
>= 50 and <= 54	0	0	0	0	0
>= 55 and <= 59	2	4	0	0	6
>= 60 and <= 64	2	3	0	0	5
>= 65 and <= 69	0	1	0	0	1
>= 70 and <= 74	0	2	0	0	2
>= 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	23	28	1	0	52

Drug/Alcohol Related	28
Drug	1
Alcohol (< Statutory)	0
Alcohol (Statutory)	1
Drug and Alcohol (< Statutory)	0
Drug and Alcohol (Statutory)	0
Refused	1
Under Influence of Alcohol/Drugs/Medications	0
None Indicated	25

Alcohol Test Given	52
None	49
Blood	0
Urine	0
Breath	1
Vitreous	0
Refused	1
Not reported	1

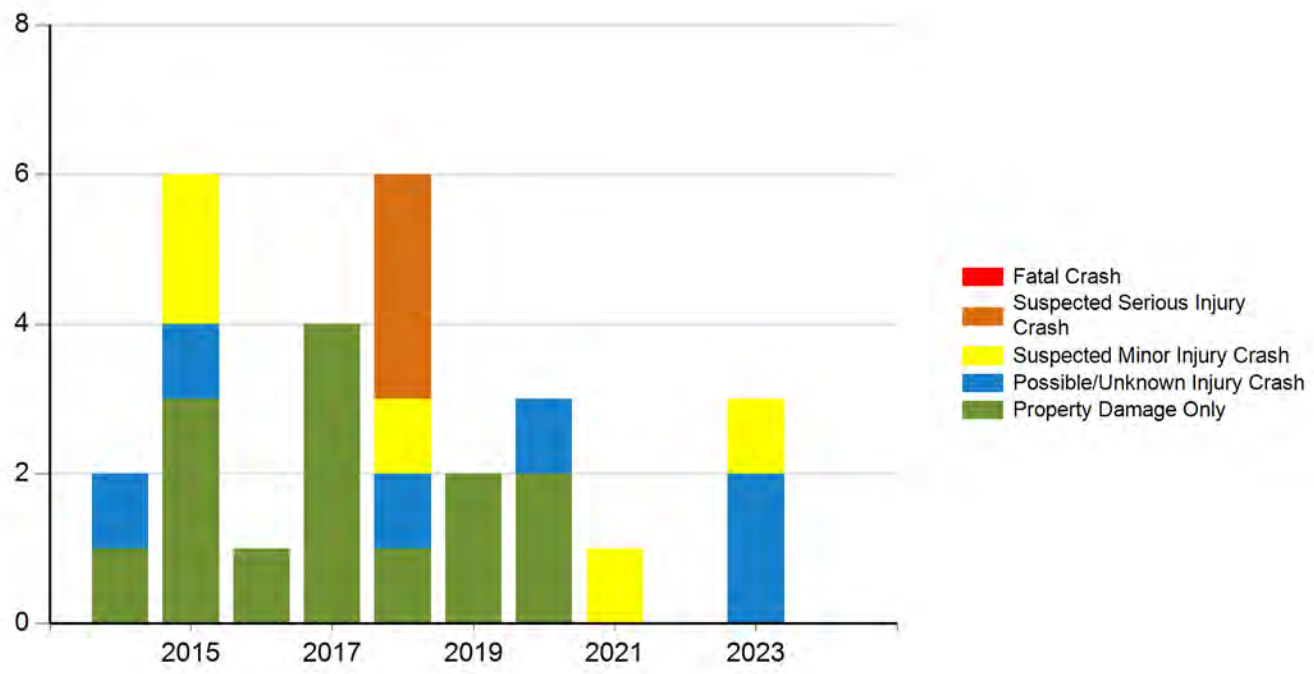
Drug Test Given	52
None	49
Blood	0
Urine	2
Breath	0
Vitreous	0
Refused	0
Not reported	1

Drug Test Result	42
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	42
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**
2014	0	0	0	1	1	2
2015	0	0	2	1	3	6
2016	0	0	0	0	1	1
2017	0	0	0	0	4	4
2018	0	3	1	1	1	6
2019	0	0	0	0	2	2
2020	0	0	0	1	2	3
2021	0	0	1	0	0	1
2022	0	0	0	0	0	0
2023	0	0	1	2	0	3
2024	0	0	0	0	0	0
Total	0	3	5	6	14	28

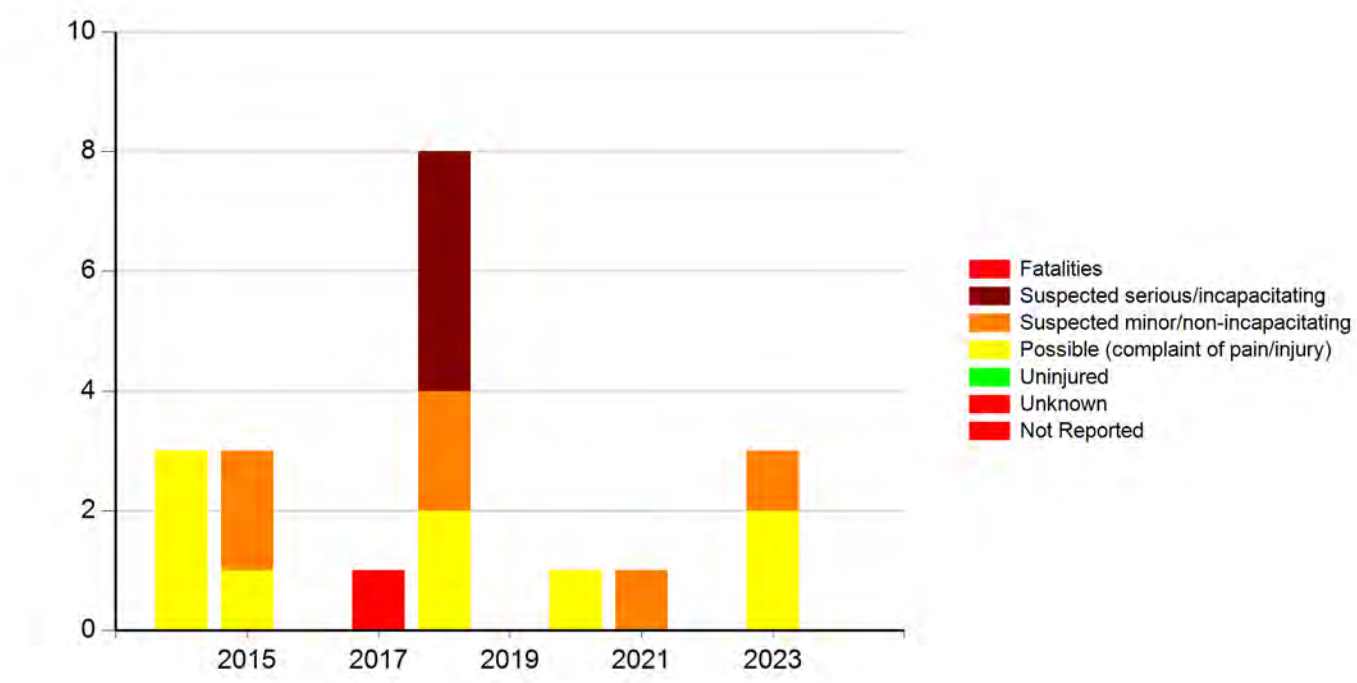
Severity/Year



Injury Status - Annual

Crash Year	Fatalities	Suspected serious/incapacitating	Suspected minor/non-incapacitating	Possible (complaint of pain/injury)	Uninjured	Unknown	Not Reported	**Total**
2014	0	0	0	3	0	0	0	3
2015	0	0	2	1	0	0	0	3
2016	0	0	0	0	0	0	0	0
2017	0	0	0	0	0	0	1	1
2018	0	4	2	2	0	0	0	8
2019	0	0	0	0	0	0	0	0
2020	0	0	0	1	0	0	0	1
2021	0	0	1	0	0	0	0	1
2022	0	0	0	0	0	0	0	0
2023	0	0	1	2	0	0	0	3
2024	0	0	0	0	0	0	0	0
Total	0	4	6	9	0	0	1	20

Injury Status/Year



Meeting the following criteria

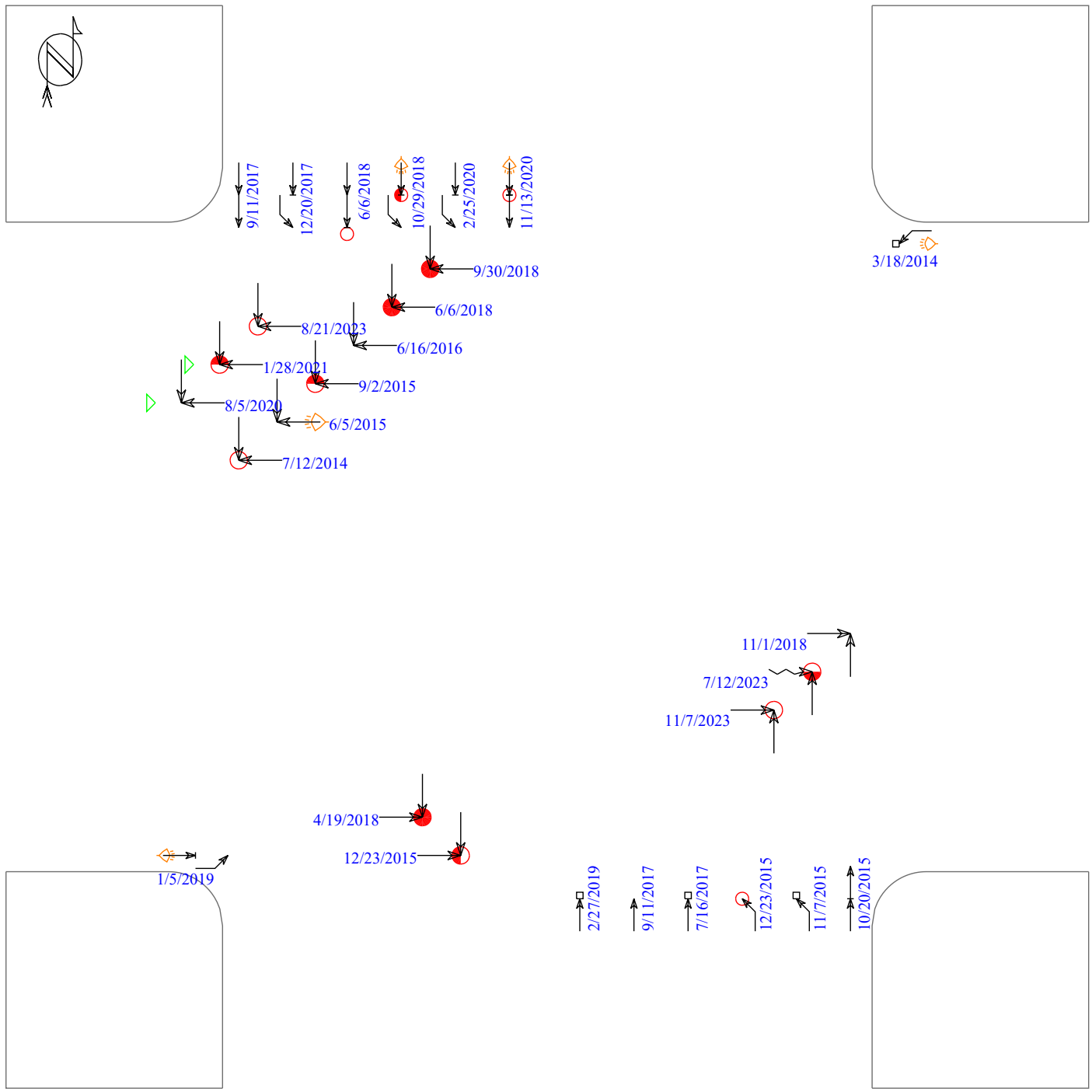
Jurisdiction: Statewide
Year: 2014, 2015, 2016, 2017, 2018, 2019, 2020, 2021, 2022, 2023
Map Selection: Yes
Filter: Non Animal-related

Analyst Information

Collision Diagram

28 Crashes

Clear



Straight
Stopped
Unknown
Backing
Overtaking
Sideswipe

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

Fatal
Major
Minor
Injury
Pedestrian
Bicycle

Fixed objects:
General
Signal
Tree
Pole
Curb
Animal

DUI
3rd vehicle
Nighttime

Crash Magic Online 8/8/2024

City of Cedar Rapids (IA)
101 First Street SE
PO Box 2148
Cedar Rapids, Iowa, United States 52406
319 286 5176 l.miller2@cedar-rapids.org

Count Name: Ellis Blvd NW at Covington Road
Site Code:
Start Date: 04/09/2024
Page No: 1

Turning Movement Data

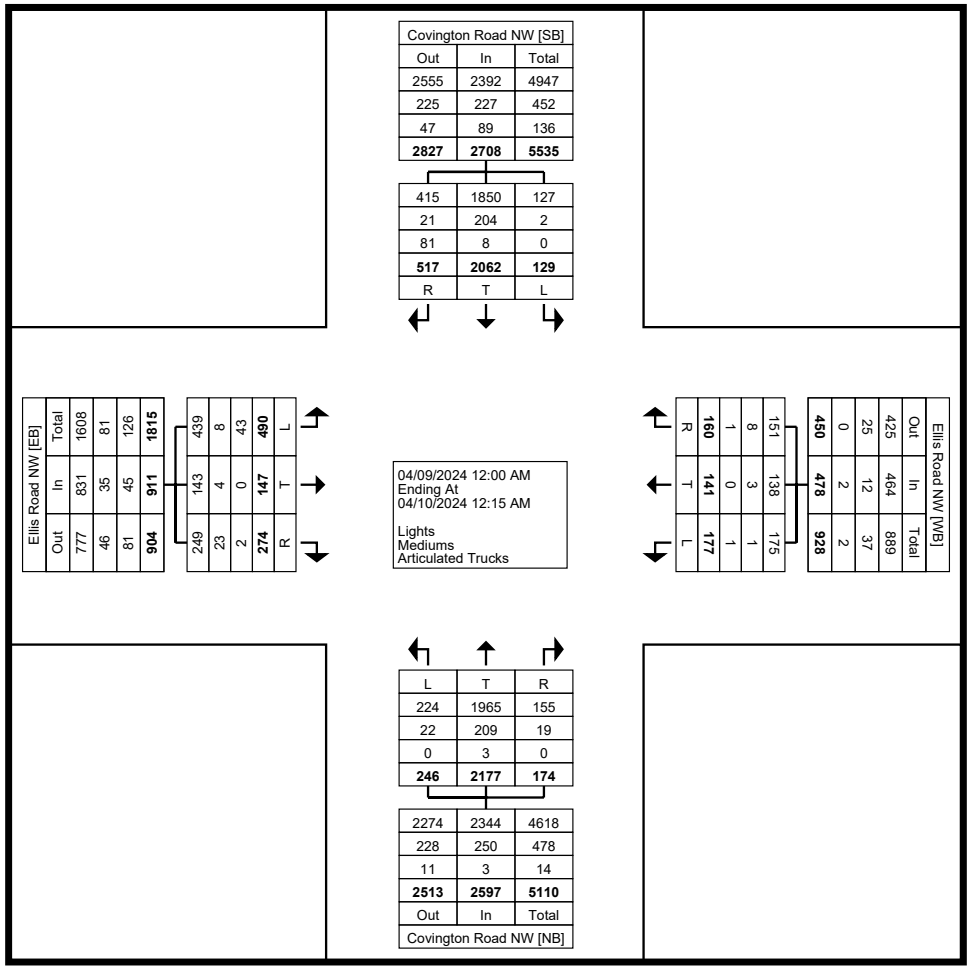
Start Time	Ellis Road NW Eastbound				Ellis Road NW Westbound				Covington Road NW Northbound				Covington Road NW Southbound				
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
12:00 AM	1	1	0	2	0	0	0	0	1	2	0	3	0	2	0	2	7
12:15 AM	2	0	2	4	0	1	0	1	0	0	0	0	0	1	0	1	6
12:30 AM	1	0	1	2	0	0	0	0	0	1	0	1	0	1	2	3	6
12:45 AM	0	1	0	1	0	0	0	0	0	1	0	1	0	1	1	2	4
Hourly Total	4	2	3	9	0	1	0	1	1	4	0	5	0	5	3	8	23
1:00 AM	0	0	0	0	0	0	0	0	0	1	0	1	0	2	0	2	3
1:15 AM	0	0	0	0	1	0	0	1	1	0	0	1	0	1	0	1	3
1:30 AM	0	0	0	0	0	0	0	0	1	2	0	3	0	1	0	1	4
1:45 AM	1	1	0	2	0	0	0	0	1	0	0	1	0	0	0	0	3
Hourly Total	1	1	0	2	1	0	0	1	3	3	0	6	0	4	0	4	13
2:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2:15 AM	0	0	2	2	0	0	0	0	0	2	0	2	0	0	0	0	4
2:30 AM	1	0	0	1	0	0	0	0	0	0	0	0	0	1	0	1	2
2:45 AM	0	0	0	0	0	0	0	0	0	1	0	1	0	2	0	2	3
Hourly Total	1	0	2	3	0	0	0	0	0	3	0	3	0	3	0	3	9
3:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3:15 AM	0	0	0	0	0	0	0	0	1	0	0	1	0	1	0	1	2
3:30 AM	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0	1
3:45 AM	0	0	0	0	0	0	0	0	0	1	0	1	0	2	0	2	3
Hourly Total	0	0	0	0	0	0	0	0	1	2	0	3	0	3	0	3	6
4:00 AM	1	0	0	1	0	0	0	0	0	0	0	0	0	2	0	2	3
4:15 AM	0	0	0	0	0	0	0	0	0	2	0	2	0	2	0	2	4
4:30 AM	5	0	1	6	0	0	2	2	0	2	0	2	0	1	0	1	11
4:45 AM	1	0	0	1	0	0	0	0	1	2	0	3	0	2	0	2	6
Hourly Total	7	0	1	8	0	0	2	2	1	6	0	7	0	7	0	7	24
5:00 AM	2	0	1	3	0	0	0	0	0	2	0	2	1	4	1	6	11
5:15 AM	2	2	2	6	0	0	1	1	0	5	1	6	1	6	0	7	20
5:30 AM	5	0	2	7	0	0	1	1	1	11	1	13	2	4	1	7	28
5:45 AM	4	1	2	7	0	0	1	1	0	13	1	14	2	8	4	14	36
Hourly Total	13	3	7	23	0	0	3	3	1	31	3	35	6	22	6	34	95
6:00 AM	5	2	2	9	1	0	0	1	1	21	3	25	3	14	3	20	55
6:15 AM	5	1	6	12	1	0	4	5	0	42	0	42	0	18	2	20	79
6:30 AM	10	3	4	17	1	1	3	5	2	47	2	51	3	45	5	53	126
6:45 AM	10	2	3	15	1	3	4	8	2	37	1	40	0	31	8	39	102
Hourly Total	30	8	15	53	4	4	11	19	5	147	6	158	6	108	18	132	362
7:00 AM	25	2	8	35	2	2	2	6	2	40	1	43	1	43	4	48	132

7:15 AM	24	5	10	39	1	3	1	5	3	59	3	65	5	46	9	60	169
7:30 AM	15	9	17	41	3	0	2	5	2	57	10	69	1	39	8	48	163
7:45 AM	17	3	9	29	1	2	4	7	5	40	5	50	3	49	4	56	142
Hourly Total	81	19	44	144	7	7	9	23	12	196	19	227	10	177	25	212	606
8:00 AM	11	2	12	25	1	5	2	8	0	38	5	43	3	42	5	50	126
8:15 AM	17	3	8	28	3	3	2	8	3	42	1	46	3	31	6	40	122
8:30 AM	5	2	7	14	2	1	0	3	5	42	3	50	1	23	9	33	100
8:45 AM	10	1	5	16	3	2	1	6	5	44	4	53	2	35	4	41	116
Hourly Total	43	8	32	83	9	11	5	25	13	166	13	192	9	131	24	164	464
9:00 AM	7	4	3	14	3	2	3	8	1	34	9	44	2	24	5	31	97
9:15 AM	3	4	5	12	2	4	3	9	0	23	4	27	0	27	6	33	81
9:30 AM	3	3	3	9	2	0	1	3	4	37	1	42	1	22	6	29	83
9:45 AM	8	1	3	12	1	1	1	3	1	20	2	23	2	23	4	29	67
Hourly Total	21	12	14	47	8	7	8	23	6	114	16	136	5	96	21	122	328
10:00 AM	6	3	4	13	2	5	1	8	1	25	1	27	1	19	4	24	72
10:15 AM	6	2	3	11	1	2	2	5	2	29	1	32	1	27	2	30	78
10:30 AM	4	2	1	7	1	1	3	5	3	32	1	36	1	22	1	24	72
10:45 AM	4	3	5	12	3	1	5	9	3	22	0	25	3	25	2	30	76
Hourly Total	20	10	13	43	7	9	11	27	9	108	3	120	6	93	9	108	298
11:00 AM	9	3	5	17	3	0	2	5	5	23	4	32	3	32	5	40	94
11:15 AM	3	3	3	9	4	3	2	9	3	30	2	35	1	30	5	36	89
11:30 AM	12	1	2	15	4	4	2	10	5	38	3	46	0	21	3	24	95
11:45 AM	7	1	0	8	5	3	1	9	3	27	3	33	4	29	10	43	93
Hourly Total	31	8	10	49	16	10	7	33	16	118	12	146	8	112	23	143	371
12:00 PM	7	2	5	14	2	2	6	10	2	26	5	33	0	32	6	38	95
12:15 PM	4	2	1	7	5	3	5	13	7	35	2	44	1	35	9	45	109
12:30 PM	7	0	1	8	1	3	2	6	6	26	1	33	1	31	12	44	91
12:45 PM	2	2	5	9	3	4	1	8	2	25	4	31	1	28	10	39	87
Hourly Total	20	6	12	38	11	12	14	37	17	112	12	141	3	126	37	166	382
1:00 PM	10	3	2	15	5	0	4	9	3	29	5	37	3	28	9	40	101
1:15 PM	9	2	4	15	4	3	1	8	2	28	3	33	3	30	4	37	93
1:30 PM	6	1	1	8	2	5	1	8	4	37	2	43	2	24	6	32	91
1:45 PM	2	3	3	8	2	2	3	7	3	23	5	31	2	28	9	39	85
Hourly Total	27	9	10	46	13	10	9	32	12	117	15	144	10	110	28	148	370
2:00 PM	1	1	2	4	2	1	2	5	1	26	5	32	4	25	11	40	81
2:15 PM	4	3	4	11	3	1	2	6	4	25	1	30	1	33	9	43	90
2:30 PM	5	5	0	10	2	3	2	7	2	29	4	35	3	30	5	38	90
2:45 PM	5	2	4	11	1	1	1	3	3	37	2	42	3	37	8	48	104
Hourly Total	15	11	10	36	8	6	7	21	10	117	12	139	11	125	33	169	365
3:00 PM	8	2	9	19	6	1	5	12	5	44	2	51	2	58	10	70	152
3:15 PM	6	5	3	14	4	2	9	15	7	53	1	61	1	43	17	61	151
3:30 PM	8	2	5	15	3	2	4	9	5	47	1	53	2	54	11	67	144
3:45 PM	15	3	5	23	2	5	3	10	6	66	0	72	5	51	9	65	170
Hourly Total	37	12	22	71	15	10	21	46	23	210	4	237	10	206	47	263	617
4:00 PM	12	1	9	22	3	5	3	11	14	62	2	78	1	37	13	51	162
4:15 PM	11	5	7	23	8	5	2	15	8	58	5	71	3	41	16	60	169
4:30 PM	5	2	2	9	3	3	3	9	10	61	5	76	5	45	22	72	166
4:45 PM	9	3	4	16	6	8	4	18	5	49	6	60	4	58	19	81	175
Hourly Total	37	11	22	70	20	21	12	53	37	230	18	285	13	181	70	264	672
5:00 PM	12	0	10	22	4	5	8	17	5	56	3	64	3	48	16	67	170
5:15 PM	16	2	3	21	5	2	3	10	13	44	3	60	7	75	14	96	187
5:30 PM	10	2	3	15	9	5	3	17	4	31	2	37	0	45	15	60	129

5:45 PM	9	1	2	12	3	2	1	6	5	36	5	46	2	37	7	46	110
Hourly Total	47	5	18	70	21	14	15	50	27	167	13	207	12	205	52	269	596
6:00 PM	7	3	5	15	4	2	5	11	4	29	2	35	1	45	11	57	118
6:15 PM	6	3	5	14	3	1	0	4	4	36	6	46	3	32	16	51	115
6:30 PM	4	0	3	7	4	1	2	7	3	22	7	32	1	31	9	41	87
6:45 PM	5	2	1	8	4	0	2	6	3	21	2	26	1	28	8	37	77
Hourly Total	22	8	14	44	15	4	9	28	14	108	17	139	6	136	44	186	397
7:00 PM	5	0	6	11	0	2	4	6	5	15	1	21	2	21	10	33	71
7:15 PM	3	2	2	7	2	2	0	4	4	22	1	27	0	23	9	32	70
7:30 PM	1	1	2	4	3	2	0	5	2	19	0	21	2	22	10	34	64
7:45 PM	4	1	3	8	2	3	5	10	4	11	2	17	1	24	8	33	68
Hourly Total	13	4	13	30	7	9	9	25	15	67	4	86	5	90	37	132	273
8:00 PM	3	1	1	5	1	1	0	2	2	20	2	24	0	23	4	27	58
8:15 PM	4	2	1	7	1	1	2	4	5	14	1	20	1	11	6	18	49
8:30 PM	0	2	3	5	3	1	1	5	4	16	0	20	0	11	3	14	44
8:45 PM	0	0	0	0	3	0	0	3	4	17	1	22	1	10	5	16	41
Hourly Total	7	5	5	17	8	3	3	14	15	67	4	86	2	55	18	75	192
9:00 PM	2	0	0	2	2	2	0	4	2	15	0	17	2	16	1	19	42
9:15 PM	2	0	0	2	0	0	1	1	1	14	1	16	0	11	5	16	35
9:30 PM	0	1	0	1	2	1	2	5	0	10	0	10	0	3	5	8	24
9:45 PM	1	1	0	2	2	0	0	2	0	10	0	10	0	10	3	13	27
Hourly Total	5	2	0	7	6	3	3	12	3	49	1	53	2	40	14	56	128
10:00 PM	0	1	0	1	1	0	1	2	0	8	0	8	0	4	0	4	15
10:15 PM	2	1	3	6	0	0	0	0	3	6	0	9	1	5	2	8	23
10:30 PM	3	1	2	6	0	0	0	0	1	2	0	3	0	6	2	8	17
10:45 PM	0	0	0	0	0	0	0	0	0	4	0	4	0	3	0	3	7
Hourly Total	5	3	5	13	1	0	1	2	4	20	0	24	1	18	4	23	62
11:00 PM	0	0	2	2	0	0	1	1	0	6	1	7	1	3	0	4	14
11:15 PM	1	0	0	1	0	0	0	0	0	3	1	4	1	5	2	8	13
11:30 PM	1	0	0	1	0	0	0	0	0	4	0	4	0	0	1	1	6
11:45 PM	1	0	0	1	0	0	0	0	1	2	0	3	2	1	1	4	8
Hourly Total	3	0	2	5	0	0	1	1	1	15	2	18	4	9	4	17	41
12:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Grand Total	490	147	274	911	177	141	160	478	246	2177	174	2597	129	2062	517	2708	6694
Approach %	53.8	16.1	30.1	-	37.0	29.5	33.5	-	9.5	83.8	6.7	-	4.8	76.1	19.1	-	-
Total %	7.3	2.2	4.1	13.6	2.6	2.1	2.4	7.1	3.7	32.5	2.6	38.8	1.9	30.8	7.7	40.5	-
Lights	439	143	249	831	175	138	151	464	224	1965	155	2344	127	1850	415	2392	6031
% Lights	89.6	97.3	90.9	91.2	98.9	97.9	94.4	97.1	91.1	90.3	89.1	90.3	98.4	89.7	80.3	88.3	90.1
Mediums	8	4	23	35	1	3	8	12	22	209	19	250	2	204	21	227	524
% Mediums	1.6	2.7	8.4	3.8	0.6	2.1	5.0	2.5	8.9	9.6	10.9	9.6	1.6	9.9	4.1	8.4	7.8
Articulated Trucks	43	0	2	45	1	0	1	2	0	3	0	3	0	8	81	89	139
% Articulated Trucks	8.8	0.0	0.7	4.9	0.6	0.0	0.6	0.4	0.0	0.1	0.0	0.1	0.0	0.4	15.7	3.3	2.1

City of Cedar Rapids (IA)
101 First Street SE
PO Box 2148
Cedar Rapids, Iowa, United States 52406
319 286 5176 l.miller2@cedar-rapids.org

Count Name: Ellis Blvd NW at Covington Road
Site Code:
Start Date: 04/09/2024



Turning Movement Data Plot

City of Cedar Rapids (IA)
101 First Street SE
PO Box 2148
Cedar Rapids, Iowa, United States 52406
319 286 5176 l.miller2@cedar-rapids.org

Count Name: Ellis Blvd NW at Covington Road
Site Code:
Start Date: 04/09/2024

Turning Movement Peak Hour Data (7:00 AM)

Start Time	Ellis Road NW Eastbound				Ellis Road NW Westbound				Covington Road NW Northbound				Covington Road NW Southbound				
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
7:00 AM	25	2	8	35	2	2	2	6	2	40	1	43	1	43	4	48	132
7:15 AM	24	5	10	39	1	3	1	5	3	59	3	65	5	46	9	60	169
7:30 AM	15	9	17	41	3	0	2	5	2	57	10	69	1	39	8	48	163
7:45 AM	17	3	9	29	1	2	4	7	5	40	5	50	3	49	4	56	142
Total	81	19	44	144	7	7	9	23	12	196	19	227	10	177	25	212	606
Approach %	56.3	13.2	30.6	-	30.4	30.4	39.1	-	5.3	86.3	8.4	-	4.7	83.5	11.8	-	-
Total %	13.4	3.1	7.3	23.8	1.2	1.2	1.5	3.8	2.0	32.3	3.1	37.5	1.7	29.2	4.1	35.0	-
PHF	0.810	0.528	0.647	0.878	0.583	0.583	0.563	0.821	0.600	0.831	0.475	0.822	0.500	0.903	0.694	0.883	0.896
Lights	80	19	41	140	7	7	8	22	10	170	18	198	10	153	20	183	543
% Lights	98.8	100.0	93.2	97.2	100.0	100.0	88.9	95.7	83.3	86.7	94.7	87.2	100.0	86.4	80.0	86.3	89.6
Mediums	0	0	3	3	0	0	0	0	2	26	1	29	0	22	1	23	55
% Mediums	0.0	0.0	6.8	2.1	0.0	0.0	0.0	0.0	16.7	13.3	5.3	12.8	0.0	12.4	4.0	10.8	9.1
Articulated Trucks	1	0	0	1	0	0	1	1	0	0	0	0	0	2	4	6	8
% Articulated Trucks	1.2	0.0	0.0	0.7	0.0	0.0	11.1	4.3	0.0	0.0	0.0	0.0	0.0	1.1	16.0	2.8	1.3

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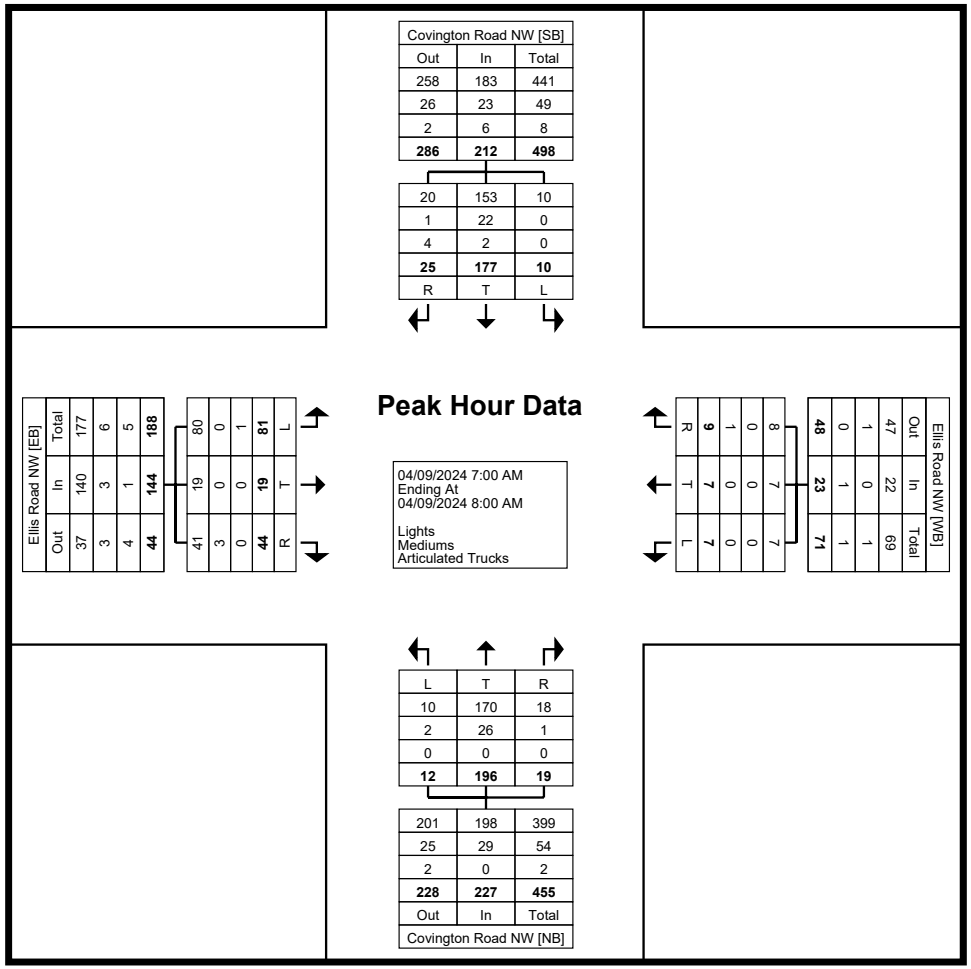
Count Name: Ellis Blvd NW at Covington Road
Site Code:
Start Date: 04/09/2024
Page No: 6



Turning Movement Peak Hour Data Plot (7:00 AM)

City of Cedar Rapids (IA)
101 First Street SE
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Cedar Rapids, Iowa, United States 52406
319 286 5176 l.miller2@cedar-rapids.org

Count Name: Ellis Blvd NW at Covington Road
Site Code:
Start Date: 04/09/2024

Turning Movement Peak Hour Data (4:30 PM)

Start Time	Ellis Road NW Eastbound				Ellis Road NW Westbound				Covington Road NW Northbound				Covington Road NW Southbound				
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
4:30 PM	5	2	2	9	3	3	3	9	10	61	5	76	5	45	22	72	166
4:45 PM	9	3	4	16	6	8	4	18	5	49	6	60	4	58	19	81	175
5:00 PM	12	0	10	22	4	5	8	17	5	56	3	64	3	48	16	67	170
5:15 PM	16	2	3	21	5	2	3	10	13	44	3	60	7	75	14	96	187
Total	42	7	19	68	18	18	18	54	33	210	17	260	19	226	71	316	698
Approach %	61.8	10.3	27.9	-	33.3	33.3	33.3	-	12.7	80.8	6.5	-	6.0	71.5	22.5	-	-
Total %	6.0	1.0	2.7	9.7	2.6	2.6	2.6	7.7	4.7	30.1	2.4	37.2	2.7	32.4	10.2	45.3	-
PHF	0.656	0.583	0.475	0.773	0.750	0.563	0.563	0.750	0.635	0.861	0.708	0.855	0.679	0.753	0.807	0.823	0.933
Lights	38	7	19	64	18	18	18	54	33	209	15	257	17	225	62	304	679
% Lights	90.5	100.0	100.0	94.1	100.0	100.0	100.0	100.0	100.0	99.5	88.2	98.8	89.5	99.6	87.3	96.2	97.3
Mediums	0	0	0	0	0	0	0	0	0	1	2	3	2	1	2	5	8
% Mediums	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.5	11.8	1.2	10.5	0.4	2.8	1.6	1.1
Articulated Trucks	4	0	0	4	0	0	0	0	0	0	0	0	0	0	7	7	11
% Articulated Trucks	9.5	0.0	0.0	5.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	9.9	2.2	1.6

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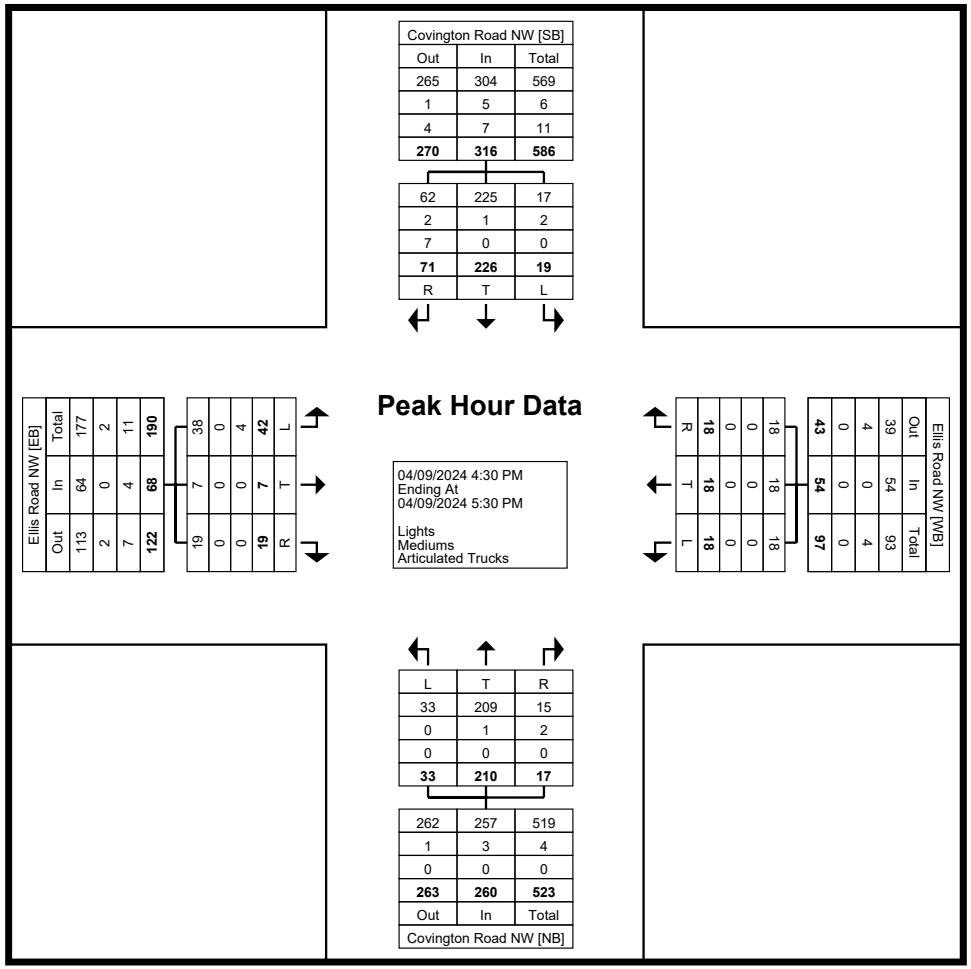
Count Name: Ellis Blvd NW at Covington Road
Site Code:
Start Date: 04/09/2024
Page No: 8



Turning Movement Peak Hour Data Plot (4:30 PM)

EXHIBIT K: If signals are proposed, include information on TRAFFIC SIGNAL LAYOUT, TYPE, PROPOSED PHASING, AND DETECTOR LOCATIONS. If there is an existing traffic signal, include signal layout, phasing, timing and detector locations, if available.

No signals are proposed with this safety improvement project.

County:	Linn	Prepared By:	MHJ
Location:	Ellis Road & Covington Road	Date Prepared:	7/25/2023
Proposed Improvements:	Construction of a roundabout		
Estimated Improvement Cost:	$ 1,655,027		
Inflation on Crash Costs:	4%	Annual Maintenance:	2%
Discount Rate:	4%	(% of Improvement Cost)	
Estimated Service Life:	20	Annual Maintenance Cost:	$ 33,101

Method Choice: CRF Method

The Crash Reduction Factor (CRF) Method applies one to three CRFs to historical crashes to estimate reductions in future crashes. Crash Modification Factors (CMFs) can be converted to CRFs. For additional information, click the "Learn More" button.

Crash Reduction Factor (CRF) Method

Traffic Growth Factor:	5%
Number of CRFs:	1
Years of Crash History:	10

Combined CRF (Dominant Common Residuals Method)

Iowa DOT's preferred methodology for combining CRFs is Dominant Common Residuals, since it is more conservative than the other options.

	CRF 1:	Combined CRF	
CRF Value (%)	88	**88.0**	
Equivalent CMF	0.12		Is Dom. Com. Resd.
Combined CMF, if # used (DR)	0.12	0.12	TRUE
Combined CMF, if # used (Mult)	0.12		Is data entered befc
Pick Dom Com. Resd. Or Mult. Fo	0.12	0.12	FALSE

Crash Severity	Rounded Societal Costs	Crash History (Total):	CRF (from above)	Crash History - Annual Avg	Crashes Saved Annually
Fatal (K)	$ 4,000,000		88.0	**0.00**	**0.00**
Serious Injury (A)	$ 4,000,000	3	88.0	**0.30**	**0.26**
Minor Injury (B)	$ 265,000	5	88.0	**0.50**	**0.44**
Possible/Unknown Injury (C)	$ 125,000	6	88.0	**0.60**	**0.53**
Property Damage Only (O)	$ 20,000	14	88.0	**1.40**	**1.23**

Crash Severity	Annual Societal Benefit
Fatal (K)	**$ -**
Serious Injury (A)	**$ 1,056,000**
Minor Injury (B)	**$ 116,600**
Possible/Unknown Injury (C)	**$ 66,000**
Property Damage Only (O)	**$ 24,640**

Total Benefits and Costs

		Implementation Cost	$ 1,655,027
		Present Value of Maint.	$ 449,847
Present Value Benefits (Societal Benefits)	$ 25,435,287	Present Value Costs (Impl. and Maint. Costs)	$ 2,104,874

County:	Linn	Prepared By:	MHJ
Location:	Ellis Road & Covington Road	Date Prepared:	7/25/2023
Present Value Net Return	$ 23,330,412		
Benefit Cost Ratio	**12.08**		

Form continues on next page

County:	Linn	Prepared By:	MHJ
Location:	Ellis Road & Covington Road	Date Prepared:	7/25/2023

User Input Required - Custom Values Used

General Customizations

No change to Crash Costs

No change to Discount Rate

No change to Maintenance Costs Roundabouts have historially low maintenance costs, reprepsented mostly by pavement markings and signs, only. The percent maintenace cost shouldn't be above 0.5% a year, for this kind of roundabout being proposed. We are using 0.25%

Method-Specific Customizations

Rev. 07/23

Application for SITE-SPECIFIC TSIP FUNDS

GENERAL INFORMATION **DATE:** July 30, 2024

Location / Title of Project P53 Curve Improvements

Applicant Madison County Secondary Road Department

Contact Person Cole Kearns Title Assistant to the Engineer

Complete Mailing Address 1105 E. Court Avenue

Winterset, IA 50273

Phone 515-462-1136 (Area Code) E-Mail ckearns@madisoncounty.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) Dallas County Secondary Road Department

Contact Person Alan A. Miller Title County Engineer

Complete Mailing Address 415 River Street

Adel, IA 50003

Phone (515)993-4289 (Area Code) E-Mail al.miller@dallascountyiowa.gov

PLEASE COMPLETE THE FOLLOWING PROJECT INFORMATION:

Funding Amount

Total Safety Cost	$	432,300
Total Project Cost	$	432,300
Safety Funds Requested	**$**	432,300

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 Madison County

Signed: _____ 8/13/2024
Signature Date Signed

Mike Hackett
Printed Name

Attest: _____ 8/13/2024
Signature Date Signed

Cole Kearns
Printed Name

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 Dallas County

Signed: Alan A. Miller 8/6/2024

Signature Date Signed

Alan A. Miller

Printed Name

Attest: Asst. 8/6/2024

Signature Date Signed

Jared Higley, Asst.

Printed Name

A

SR – RESOLUTION - 7-23-2024 D

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, Madison County recommends application for funding of Paved Shoulder, Safety Edge, Rumble Strips, Painted Pavement Markings, and sign improvements on a portion of P53 (Pitzer Road) west of Earlham, Iowa.

BE IT HEREBY RESOLVED:

1. The Madison County Board of Supervisors supports and approves the attached application for Iowa Department of Transportation Traffic Safety Improvement Program funding; and

2. The Madison County Board of Supervisors hereby commits to accepting and maintaining these improvements

MADISON COUNTY BOARD OF SUPERVISORS

AYE	NAY
Phillip Clifton, Chairman	Phillip Clifton, Chairman
Diane Fitch, Supervisor	Diane Fitch, Supervisor
Heather Stancil, Supervisor	Heather Stancil, Supervisor

ATTEST: Shelley D. Kaster, Madison County Auditor

DATE 7/23/24

A

Motion by Supervisor Hanson and seconded by Supervisor Chapman to approve the following:

RESOLUTION 2024-0087

WHEREAS, the Iowa Department of Transportation 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 Madison County Secondary Road Department plans to submit a joint application for TSIP funding for safety improvements on a portion of P53 (Pitzer Road) west of Earlham, Iowa which includes a portion of P53 in section 33 of Union Township in Dallas County; and

WHEREAS, the Madison County Board of Supervisors passed Resolution - 7-23-2024 supporting and approving the TSIP funding application; and

WHEREAS, the Dallas County Local Road Safety Plan identifies this portion of P53 as a priority safety improvement project and recommends implementing the safety countermeasures included in the TSIP application; and

WHEREAS, the Dallas County Engineer recommends approval of the application for Site-Specific TSIP Funds; and

NOW THEREFORE BE IT RESOLVED that the Board of Supervisors supports and approves the attached Traffic Safety Improvement Program (TSIP) funding application and authorizes the County Engineer to Certify the Application on behalf of Dallas County.

AYE	NAY
Brad Golightly, Chairman	Brad Golightly, Chairman
Kim Chapman, Member	Kim Chapman, Member
Mark A. Hanson, Member	Mark A. Hanson, Member

Dated this 6th day of August, 2024

ATTEST: Julia Helm, Dallas County Auditor

Narrative

Madison and Dallas County Secondary Road Departments are applying for the Transportation Safety Improvement Program funds for safety improvements. The proposed location is made up of three curves within 0.64 mile stretch of county road P53. Safety improvements will include lane widening, shoulder rumble strips, 6 inch pavement markings, safety edge, and installation of chevron and advisory speed signs.

Project Location

The proposed project is located on major collector route County Road P53, also known as Pitzer Road. The segment of road is located in the Northwest corner of Madison County and continues into the Southwest corner of Dallas County. This section of road lies between Earlham and Dexter with an I-80 interchange just north of the project location. The most recent traffic study shows an Annual Average Daily Traffic (AADT) of 1,170 vehicles per day as of the most recent traffic study in 2016. The route is vital for our local and state economy as it connects the towns of Dexter and Earlham, also provides access to Interstate 80 for residents of Macksburg, Earlham and rural residents.

Existing Conditions

County road P53 is a 22-foot-wide pavement originally graded in 1952. The highway has since had improvements including a 6 inch PCC pavement in 1978 and most recently a 7 inch PCC overlay in 1993. The location consists of three curves within the 0.64 mile project boundaries. Throughout the project the existing fore slopes are generally 5:1. The current speed limit is 55 MPH.

Following the route from State highway 92 North, P53 is a straight road with no curves or stops for 14 miles until the road enters a curve with a radius of 818 feet with super elevation of 5.6 %, midway through the curve is an entrance for a rock road (Pitzer Ln.). Immediately after, enters a second curve with a radius of 1,432 feet and no super elevation. The final curve is approximately 900 feet after the second curve with a radius of 716 feet and 5.6 % of super elevation, midway through the curve is an entrance for a rock road (100th St.). Two of the three curves do not meet super elevation design standards for the current horizontal alignment. Currently the road is posted at 55 MPH, however, the AASHTO design guidelines recommends design speed of 45 MPH.

Per the MUTCD the Chevron Alignment (W1-8) signs and speed limit advisory (W13-1P) signs are recommended however they are currently not in place on any of the referenced curves within the project limits. All signs and other traffic control devices are currently installed according to MUTCD requirements, including 30” x 30” Horizontal Alignment Warning signs (W1-2).

Crash History and Discussion

The 5 year crash history (2019-2023) shows there has been one fatal, two suspected minor and one property damage crashes at this location. This results in a B/C ratio of 7.37, however this does not include the three crashes that have occurred in 2024. As seen in Figure 1, there have been an additional 3 crashes in 2024, including one fatality.

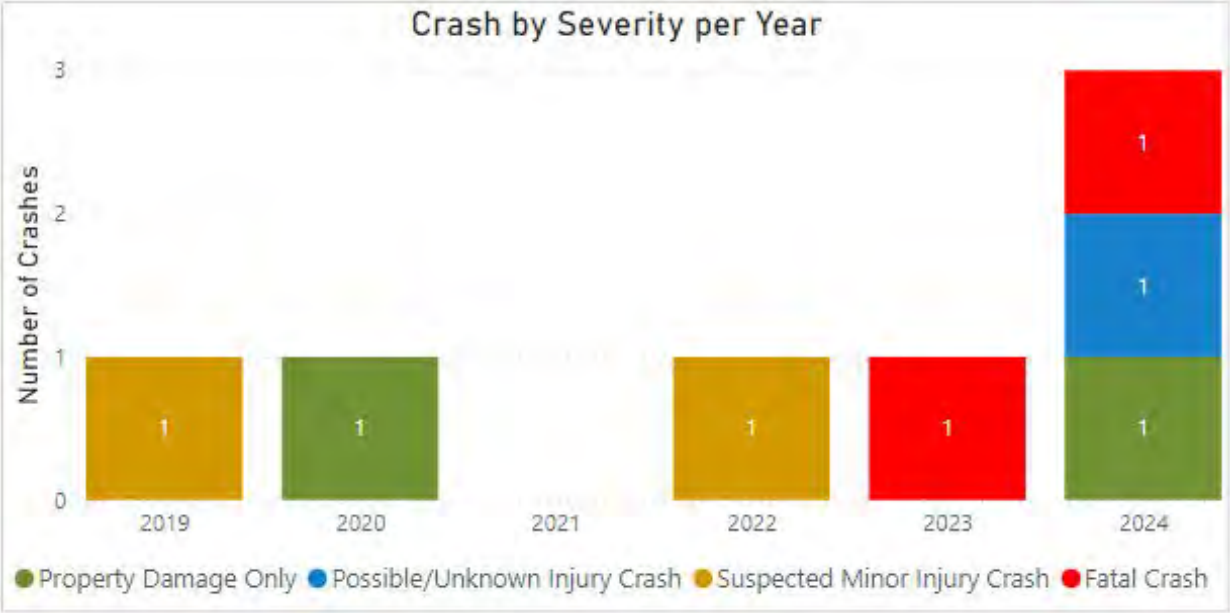


Figure 1: Crash by Severity per Year

The location of the curves provides for unfavorable circumstances especially for north bound motorists. The long stretch of straight roadway that leads into a rather sharp double curve has shown to catch motorists off guard as a majority of the incidents occur with motorists either taking the curve to fast or not being prepared for the abrupt change in road alignment.

Proposed Concept

Madison County proposes to improve the referenced section of road utilizing TSIP funds to provide as many updates as possible to improve the current safety conditions of the road. This will be accomplished by constructing four-foot paved shoulders with a safety edge with rumble strip, and six inch pavement markings to prevent accidents and maintain a safe shoulder. Improved signage will also be implemented on this project to draw more attention and warning to passing motorists. The sign improvements include Chevrons (W1-8), 45 MPH advisory speed limit signs (W13-1P), and 48” x 48” Horizontal Alignment Warning Sign (W1-2). Based on the Iowa DOT provided Planning Level Crash Reduction Factor (CRF) List, this analysis includes:

- RS-11 Install edgeline rumble strips (15% CRF)
- CS-02 Install chevron signs when warranted (15% CRF)
- RS-02 Install 6-inch edgeline pavement markings (7%)

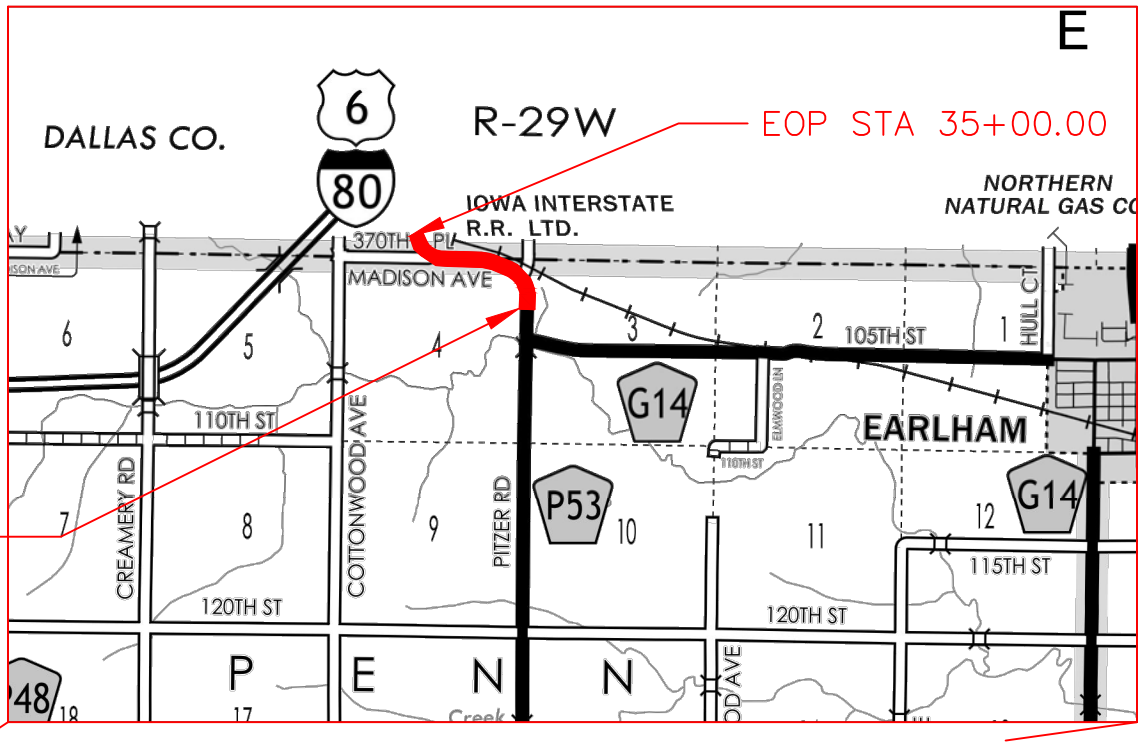
C

Item Code	Item	Unit	$/Unit	Total Quantity	Total Cost ($)
2121-7425020	GRANULAR SHOULDERS, TYPE B	TON	33.6	521.64	17527.104
2213-8201060	BASE WIDENING, 6 IN. HOT MIX ASPHALT MIXTURE	TON	64.05	1509.3	96670.665
2303-1032500	HOT MIX ASPHALT STANDARD TRAFFIC, INTERMEDIATE COURSE, 1/2 IN. MIX	TON	64.05	526.4	33715.92
2303-1033500	HOT MIX ASPHALT STANDARD TRAFFIC, SURFACE COURSE, 1/2 IN. MIX, NO SPECIAL FRICTION REQUIREMENT	TON	64.05	482.6	30910.53
2303-1258283	ASPHALT BINDER, PG 58-28S, STANDARD TRAFFIC	TON	582.75	151.098	88052.3595
2303-6911000	HOT MIX ASPHALT PAVEMENT SAMPLES	LS	5250	1	5000
2527-9263209	PAINTED PAVEMENT MARKINGS, WATERBORNE OR SOLVENT-BASED	STA	63	119	7497
2213-2713300	EXCAVATION, CLASS 13, FOR WIDENING	CY	42	1031.6	43327.2
2528-8445110	TRAFFIC CONTROL	LS	10500	1	10500
2528-8445113	FLAGGERS	EACH	525	40	21000
2533-4980005	MOBILIZATION	LS	15750	1	15750
2548-0000100	MILLED SHOULDER RUMBLE STRIPS, HMA SURFACE	STA	73.5	83.56	6141.66
2524-9130011	GUIDANCE MARKER, CHEVRON W1-8 (SPECIAL)	EACH	35.7	440	15708
2524-9325001	TYPE A SIGNS, SHEET ALUMINUM	SF	15	80	1200
					393000
			10% Contigency		39300
			Total ($)		432300

Timeline

P53 Curve Improvements Tentative Time Schedule	
August 2024	TSIP application submittal
January 2025	Notice of Approval
October 2025	Letting
August 2026	Late Start Date
October 2026	Project Completion

E



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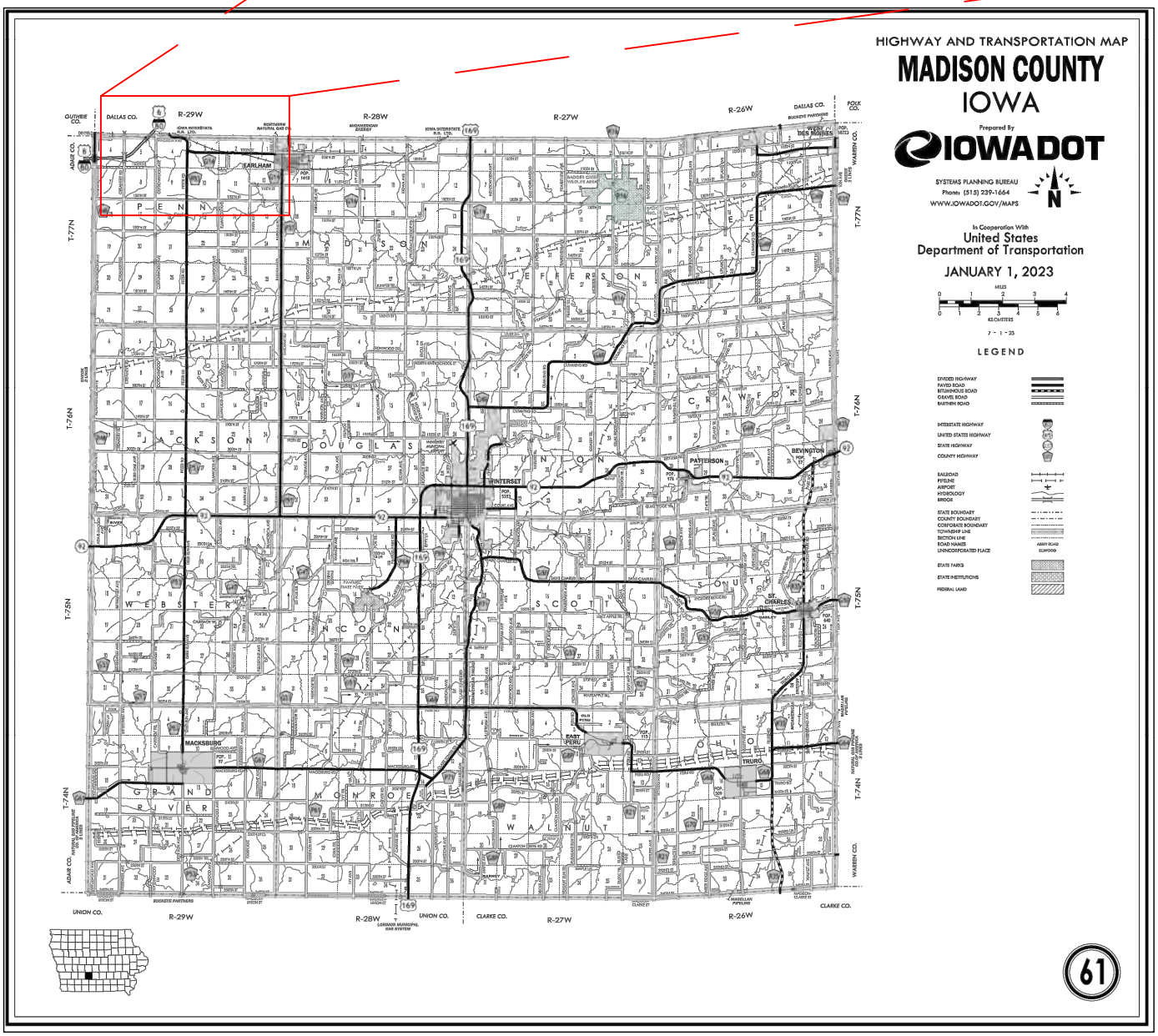
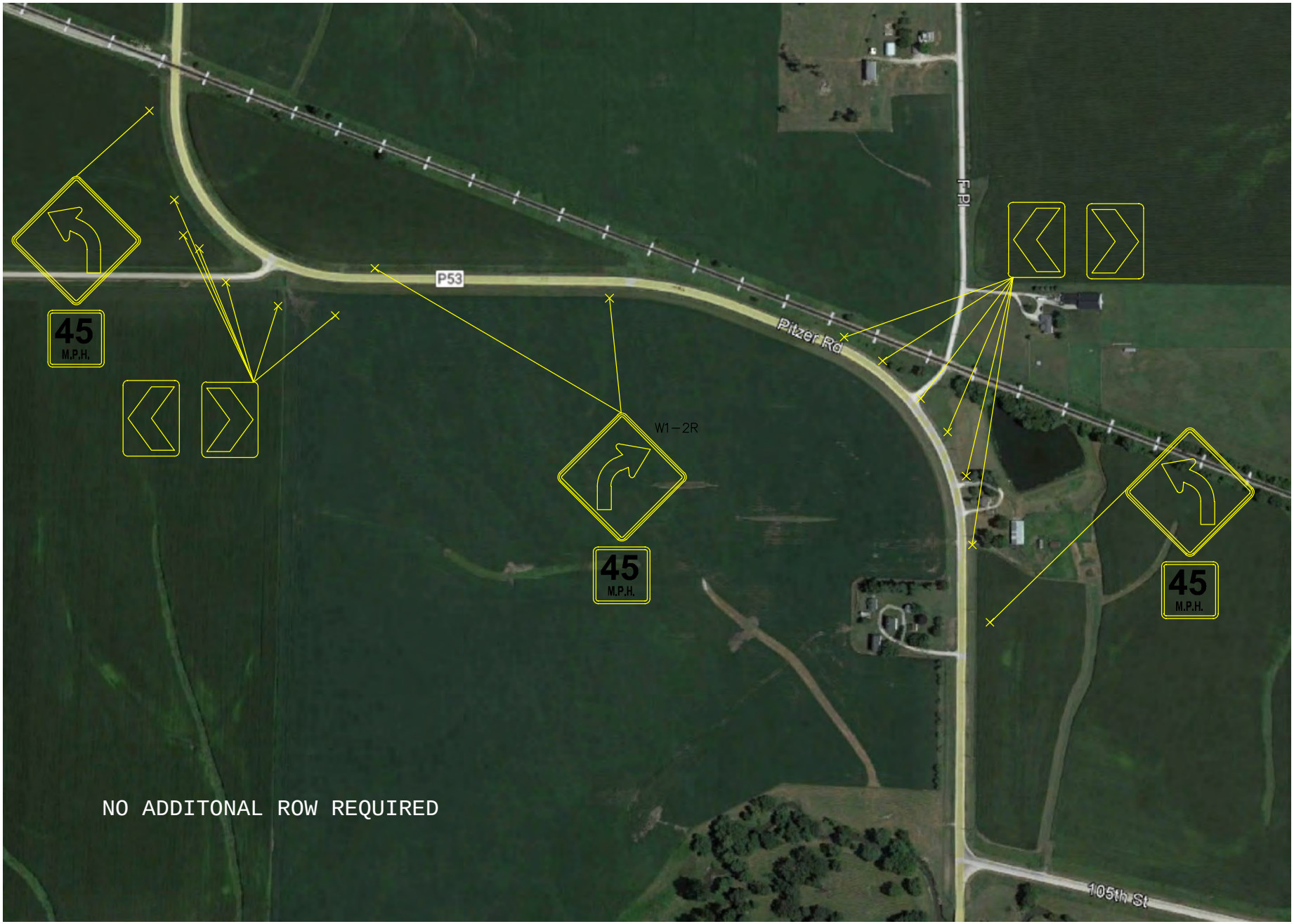


Color Pictures

Initial Curve Looking to the North

3rd curve facing Northwest

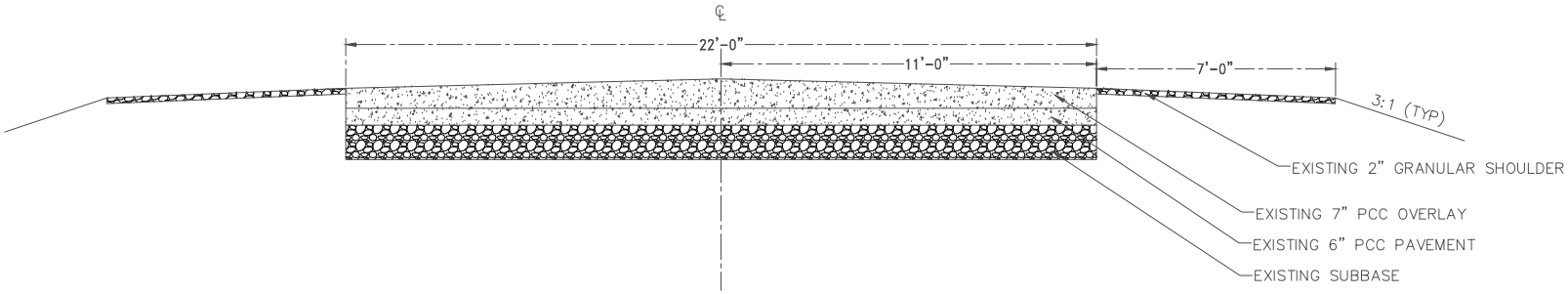
3rd curve looking Southeast



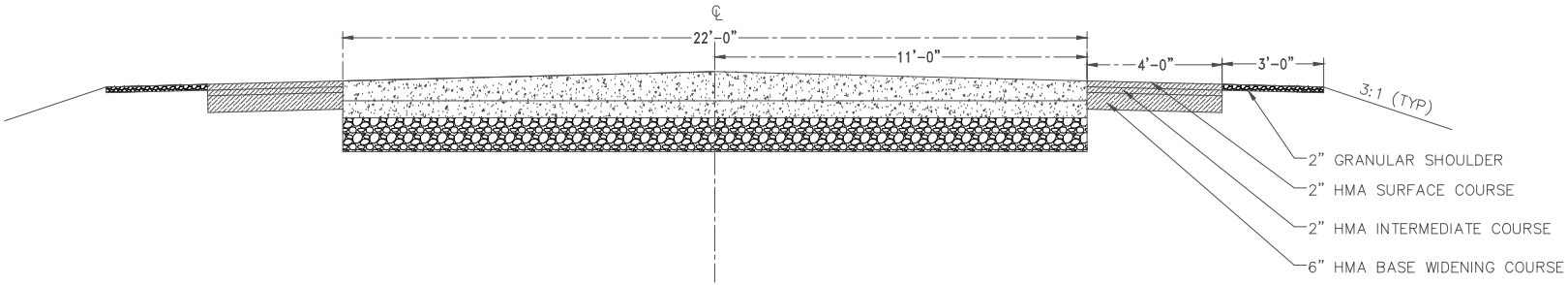
NO ADDITONAL ROW REQUIRED

G

EXISTING CROSS SECTION



PROPOSED CROSS SECTION



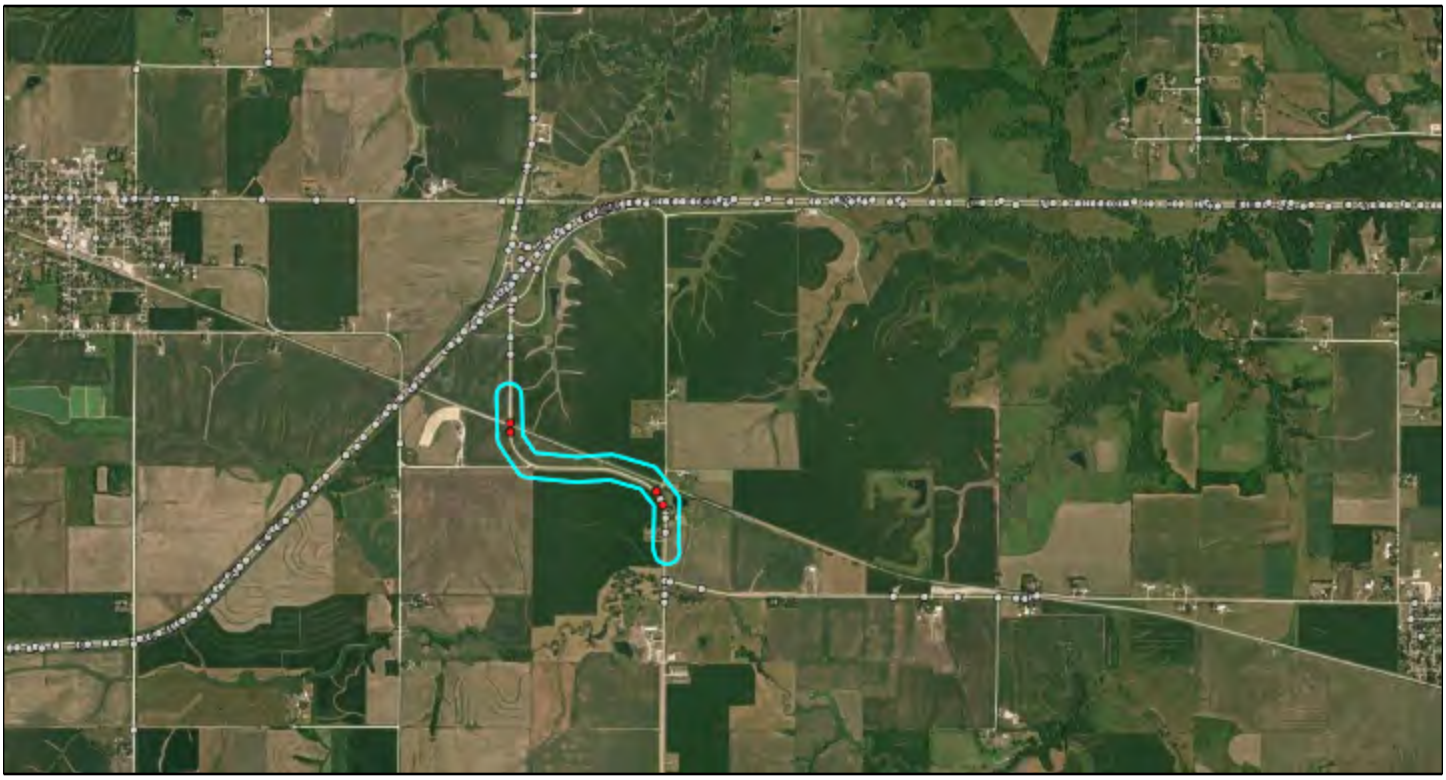
Iowa Crash Analysis Tool
Quick Report
2019-2023

Crash Severity	4
Fatal Crash	1
Suspected Serious Injury Crash	0
Suspected Minor Injury Crash	2
Possible/Unknown Injury Crash	0
Property Damage Only	1

Injury Status Summary	3
Fatalities	1
Suspected serious/incapacitating	0
Suspected minor/non-incapacitating	2
Possible (complaint of pain/injury)	0
Uninjured	0
Unknown	0
Not Reported	0

Property/Vehicles/Occupants	
Property Damage Total (dollars):	38,500.00
Average (per crash dollars):	9,625.00
Total Vehicles:	4.00
Average (per crash):	1.00
Total Occupants:	4.00
Average (per crash):	1.00

Average Severity	
Fatalities/Fatal Crash:	1.00
Fatalities/Crash:	0.25
Injuries/Crash:	0.50
Major Injuries/Crash:	0.00
Minor Injuries/Crash:	0.50
Possible/Unknown Injuries/Crash:	0.00



Iowa Crash Analysis Tool
Quick Report
2019-2023

Major Cause			**4**
Animal	0	Ran traffic signal	0
Ran stop sign	0	Failed to yield to emergency vehicle	0
FTYROW: At uncontrolled intersection	0	FTYROW: Making right turn on red signal	0
FTYROW: From stop sign	0	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	1	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	0
Exceeded authorized speed	0	Improper or erratic lane changing	0
Operating vehicle in an reckless/erratic/care...	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	3
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		

Iowa Crash Analysis Tool
Quick Report
2019-2023

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	0	0	0	0	0	0	0	0	0	0	0
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	0	0	0	0	0	0	0	0	0	0
Friday	0	0	1	0	0	0	0	0	0	0	1	0	0	2
Saturday	1	0	0	0	0	0	0	0	0	0	0	0	0	1
Total	1	0	1	0	0	0	0	0	1	0	1	0	0	4

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

Surface Conditions	4
Dry	4
Wet	0
Ice/frost	0
Snow	0
Slush	0
Mud/dirt	0
Water (standing or moving)	0
Sand	0
Oil	0
Gravel	0
Not reported	0
Other	0
Unknown	0

Fixed Object Struck			4
Bridge overhead structure	0	Bridge pier or support	0
Bridge/bridge rail parapet	0	Curb/island/raised median	0
Ditch	1	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	1	Traffic sign support	1
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)	1

Iowa Crash Analysis Tool
Quick Report
2019-2023

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	0	0	0	0	0
= 18	0	0	0	0	0
= 19	0	1	0	0	1
= 20	0	1	0	0	1
>= 21 and <= 24	0	0	0	0	0
>= 25 and <= 29	0	0	0	0	0
>= 30 and <= 34	0	0	0	0	0
>= 35 and <= 39	0	0	0	0	0
>= 40 and <= 44	0	0	0	0	0
>= 45 and <= 49	0	0	0	0	0
>= 50 and <= 54	0	0	0	0	0
>= 55 and <= 59	0	0	0	0	0
>= 60 and <= 64	0	2	0	0	2
>= 65 and <= 69	0	0	0	0	0
>= 70 and <= 74	0	0	0	0	0
>= 75 and <= 79	0	0	0	0	0
>= 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	0	0	0
Total	0	4	0	0	4

Drug/Alcohol Related	4
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	4

Alcohol Test Given	4
None	4
Blood	0
Urine	0
Breath	0
Vitreous	0
Refused	0
Not reported	0

Drug Test Given	4
None	4
Blood	0
Urine	0
Breath	0
Vitreous	0
Refused	0
Not reported	0

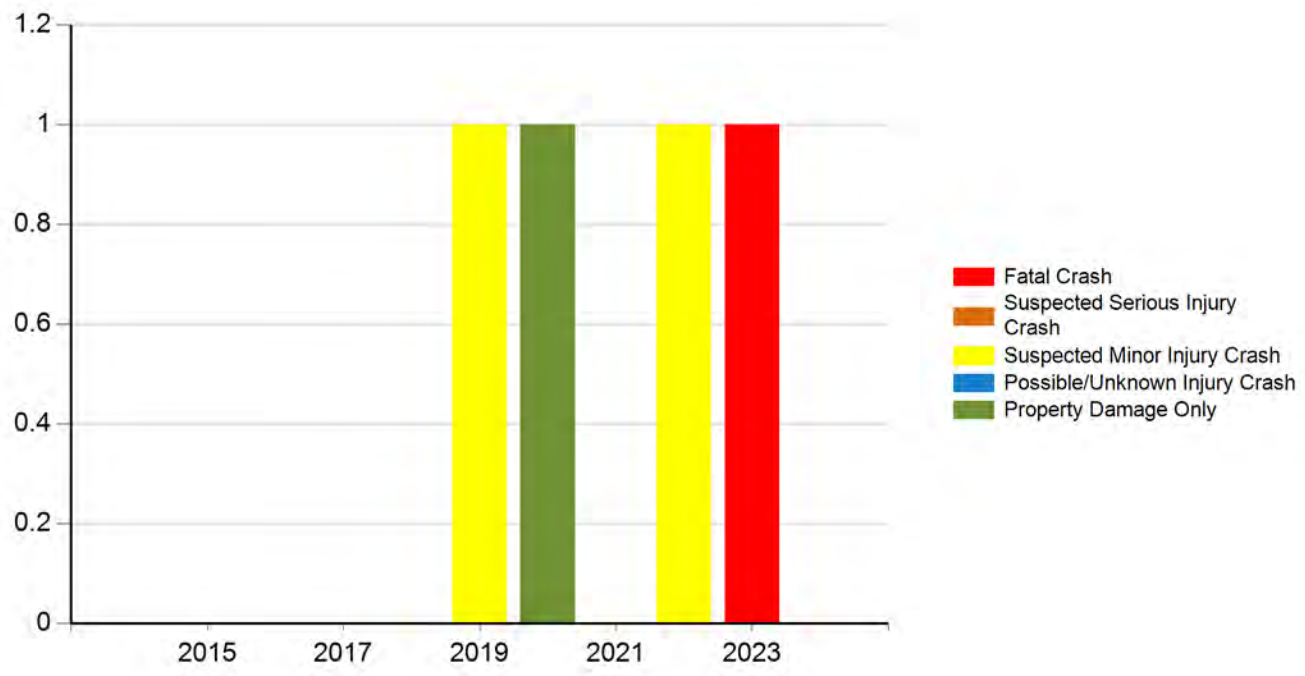
Drug Test Result	4
Negative	0
Cannabis	0
Central Nervous System depressants	0
Central Nervous System stimulants	0
Hallucinogens	0
Inhalants	0
Narcotic Analgesics	0
Dissociative Anesthetic (PCP)	0
Prescription Drug	0
Not reported	4
Other	0

Iowa Crash Analysis Tool
Quick Report
2019-2023

Crash Severity - Annual

Crash Year	Fatal Crash	Suspected Serious Injury Crash	Suspected Minor Injury Crash	Possible/Unknown Injury Crash	Property Damage Only	**Total**
2014	0	0	0	0	0	0
2015	0	0	0	0	0	0
2016	0	0	0	0	0	0
2017	0	0	0	0	0	0
2018	0	0	0	0	0	0
2019	0	0	1	0	0	1
2020	0	0	0	0	1	1
2021	0	0	0	0	0	0
2022	0	0	1	0	0	1
2023	1	0	0	0	0	1
2024	0	0	0	0	0	0
Total	1	0	2	0	1	4

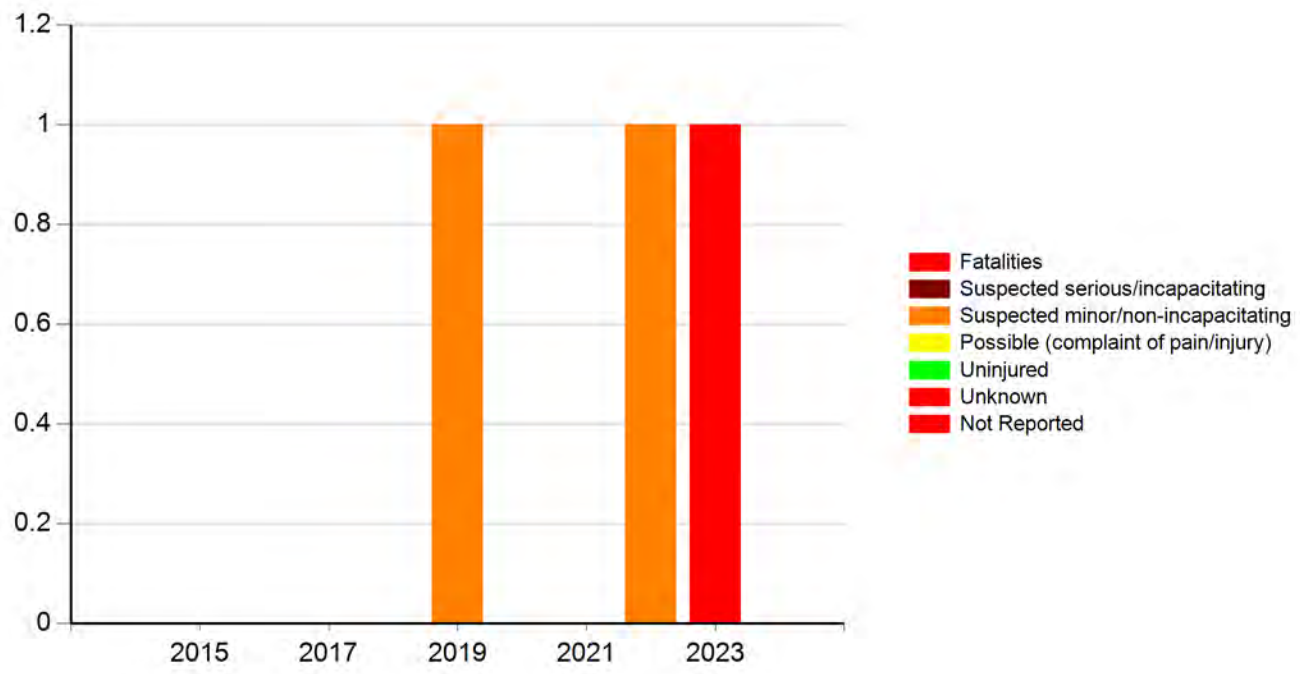
Severity/Year



Injury Status - Annual

Crash Year	Fatalities	Suspected serious/incapacitating	Suspected minor/non-incapacitating	Possible (complaint of pain/injury)	Uninjured	Unknown	Not Reported	**Total**
2014	0	0	0	0	0	0	0	0
2015	0	0	0	0	0	0	0	0
2016	0	0	0	0	0	0	0	0
2017	0	0	0	0	0	0	0	0
2018	0	0	0	0	0	0	0	0
2019	0	0	1	0	0	0	0	1
2020	0	0	0	0	0	0	0	0
2021	0	0	0	0	0	0	0	0
2022	0	0	1	0	0	0	0	1
2023	1	0	0	0	0	0	0	1
2024	0	0	0	0	0	0	0	0
Total	1	0	2	0	0	0	0	3

Injury Status/Year



Iowa Crash Analysis Tool
Quick Report
2019-2023

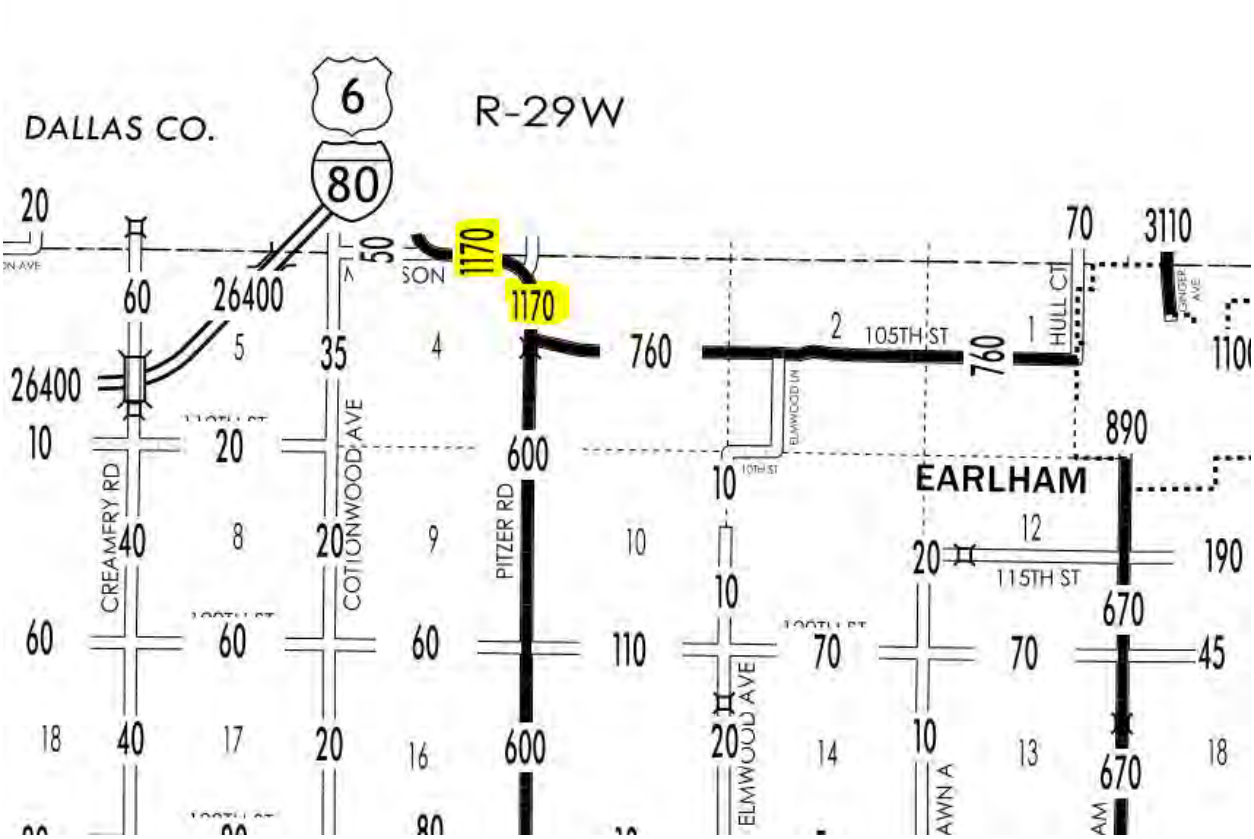
Meeting the following criteria

Jurisdiction: Statewide
Year: 2019, 2020, 2021, 2022, 2023
Map Selection: Yes
Filter: None

Analyst Information

2019-2023, No Animal

Traffic Volume Map



L

County:	Madison / Dallas	Prepared By:	Cole Kearns
Location:	P53 North of G14	Date Prepared:	7/9/2024
Proposed Improvements:	Install edgeline rumble strips (15% CRF), Install chevron signs when warrented (15% CRF), Install 6-inch Edgeline Pavement Markings (7%)		
Estimated Improvement Cost:	$ 432,300		
Inflation on Crash Costs:	4%	Annual Maintenance: (% of Improvement Cost)	2%
Discount Rate:	4%		
Estimated Service Life:	20	Annual Maintenance Cost:	$ 8,646
Method Choice:	CRF Method		

The Crash Reduction Factor (CRF) Method applies one to three CRFs to historical crashes to estimate reductions in future crashes. Crash Modification Factors (CMFs) can be converted to CRFs. For additional information, click the "Learn More" button.

Crash Reduction Factor (CRF) Method

Traffic Growth Factor:	1%
Number of CRFs:	3
Years of Crash History:	5

Combined CRF (Dominant Common Residuals Method)

Iowa DOT's preferred methodology for combining CRFs is Dominant Common Residuals, since it is more conservative than the other options.

	CRF 1:	CRF 2:	CRF 3:	Combined CRF
CRF Value (%)	15	15	7	**28.7**

Crash Severity	Rounded Societal Costs	Crash History (Total):	CRF (from above)	Crash History - Annual Avg	Crashes Saved Annually
Fatal (K)	$ 4,200,000	1	28.7	**0.20**	**0.06**
Serious Injury (A)	$ 4,200,000	0	28.7	**0.00**	**0.00**
Minor Injury (B)	$ 280,000	2	28.7	**0.40**	**0.11**
Possible/Unknown Injury (C)	$ 130,000	0	28.7	**0.00**	**0.00**
Property Damage Only (O)	$ 20,000	1	28.7	**0.20**	**0.06**

Crash Severity	Annual Societal Benefit
Fatal (K)	**$ 240,896**
Serious Injury (A)	**$ -**
Minor Injury (B)	**$ 32,120**
Possible/Unknown Injury (C)	**$ -**
Property Damage Only (O)	**$ 1,147**

Total Benefits and Costs

		Implementation Cost	$ 432,300
		Present Value of Maint.	$ 117,502
Present Value Benefits (Societal Benefits)	$ 4,049,581	Present Value Costs (Impl. and Maint. Costs)	$ 549,802
Present Value Net Return	$ 3,499,779		
Benefit Cost Ratio	**7.37**		

Form continues on next page

Marion County Road Department
402 Willets Drive, Knoxville, IA 50138
Tel (641) 828-2225
Fax (641) 828-7349

MARION COUNTY TSIP APPLICATION – FY ’26 DESTINATION LIGHTING

FY 2026

*Marion County will be applying for Traffic Safety Improvement Program funds for destination lighting in the **site-specific** category for various secondary/secondary and secondary/primary paved road intersections.*

A. Application

Rev. 07/23

IOWA DOT

Application for SITE-SPECIFIC TSIP FUNDS

GENERAL INFORMATION **DATE:** 8/13/24

Location / Title of Project: Destination Lighting at various intersections

Applicant: Marion County

Contact Person: Tyler Christian, P.E. Title: Marion County Engineer

Complete Mailing Address: 402 Willetts Dr.
Knoxville, IA 50138

Phone: 641-828-2225 (Area Code) E-Mail: tchristian@marioncountyiowa.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	$	231,000
Total Project Cost	$	231,000
Safety Funds Requested	**$**	**231,000**

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
2017054216	IA 14/G76	☐	☒	0.22	0.104189
2017054254	IA 92/T17	☐	☒	0.46	0.201520

A. Certification

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 Marion County Road Department

Signed: _____ 8/13/24
Signature Date Signed

Tyler Christian, P.E.
Printed Name

Attest: _____ 8/13/24
Signature Date Signed

Mark Raymie, Board Chair
Printed Name

B. Narrative

Marion County is applying for Site-Specific Transportation Safety Improvement Program (TSIP) funds in an amount estimated to be 100% of the cost for purchase and installation of destination lighting at various secondary/secondary and primary/secondary intersections. In many rural settings intersections can be difficult to identify, the primary purpose of the lights would be to reduce crash potential by increasing the conspicuity, enhance visibility, and inform drivers from of distance of the intersection location.

Intersection locations throughout Marion County for which we are applying consist of various paved road intersections, many of which have high volumes of stopping and turning traffic. These intersections are all located in areas with 45-55 mph approaches with a couple of exceptions for intersections with a severe skew where lighting would be beneficial. All are in a rural setting with minimal to no ambient light to identify the location or geometrics of the intersection, many of which are at a skew or have an uncharacteristic feature making it difficult to determine the travel path. Therefore, Marion County is proposing the installation of destination and/or intersection lighting in accordance with the Iowa DOT Traffic and Safety Manual, Chapter 6A-2, Chapter 6B-1, and Iowa Administrative Code 761, Chapter 136 Lighting.

A table has been provided below to detail each intersections characteristics, the proposed lighting improvement, as well as a summary of any available crash data in the form of PCR or B/C. The intersection warrants have been vetted per Iowa Department of Transportation Policy 630.01 Rural Intersection and Destination Lighting for intersection and destination criteria. If eligible for intersection lighting, it is listed in the table, all others are listed as destination lighting and meet that criterion. Design and layout of the lighting is per this document as well and detailed in Section G. Funding priority is also listed in this table with the lowest number (1) being the highest priority.

When practical and available we will utilize an existing wood pole to mount a luminaire and mast arm. This is in an effort to limit the overall cost of the project. All other locations will have a breakaway style metal post with mast arm installed at an appropriate location. In general, the location of the destination light will be placed adjacent to the sideroad (minor leg) of the intersection on the side of the road opposite of the stop sign location. All other design requirements are per IDOT policy 630.01.

Appropriate application will be submitted to District 5 IDOT contacts for Application for Use of Highway Right-of-Way (form 810025) where applicable. Additionally, Marion County will work with District 5 personnel to appropriately place lighting at the T17/IA 92 and Old Hwy 163/IA 163 intersections that are currently under reconstruction to verify that any proposed lighting coincides with the new intersection geometrics.

Marion County Road Department
Tyler Christian, P.E.
402 Willetts Dr.
Knoxville, IA 50138

Phone: 641-828-2225
FAX: 641-828-7349
E-mail: marcoeng@co.marion.ia.us

FY 2026 TSIP - Site Specific Application

Intersection Summary - Destination Lighting

Created by: Tyler Christian

8/14/2024

Location-Intersection (Type)	Intersection Characteristics					Proposed Improvement			Crash Analysis			Funding Priority
Major Road Minor Road	Roadway Type	Speed Limit (mph)	Lighting Warrants	AADT (2022)	Required Clear Zone	Lateral Clearance	Exisitng Pole	New Pole	PCR All Value	PCR Severe	Benefit Cost Ratio	
Location 1-IA 14/G76 (Skewed 4-way)												
IA 14	Primary	55	Intersection	2,920	30	48		x2	0.22	0.104189	82.04	1
G76	Secondary	55		1,100	24	10						
Location 2-IA 92/T17 (4-way)												
IA 92	Primary	55	Intersection	3,940	30	48		x2	0.46	0.201520	74.94	2
T17	Secondary	55		2,640	30	10						
Location 3-T17/G46 (T)												
T17	Secondary	55	Destination	3,270	30	48		x			1.29	3
G46	Secondary	55		950	24	16						
Location 4-T17/T17 (T)												
T17	Secondary	55	Destination	3,550	30	34	x				0.00	4
T17 (Elevator Rd)	Secondary	55		3,270	30	22						
Location 5-IA 5/G76 (Skewed T)												
IA 5	Primary	55	Destination	3,640	30	48		x			0.00	5
G76	Secondary	25		400	10	10						
Location 6-IA 5/Orange St. (Skewed T)												
IA 5	Primary	55	Destination	3,640	30	16	x				58.14	6
Orange St.	Secondary	25		300	10	16						
Location 7-IA 14/103rd (Skewed T)												
IA 14	Primary	55	Destination	1,980	30	36	x				0.00	7
103rd Ave.	Secondary	55		400	18	12						
Location 8-IA 163/Old 163 (T w/4 lane)												
IA 163 (4-lane divided)	Primary	65	Destination	11,500	46	48		x			1.29	8
Old Hwy 163	Secondary	55		280	18	13						
Location 9-IA 163/Elk Horn (T w/4 lane)												
IA 163 (4-lane divided)	Primary	65	Destination	11,500	46	48		x			0.00	9
Elk Horn Dr.	Secondary	55		440	18	10						
Location 10-T15/Old Hwy 92 (T)												
T15	Secondary	55	Destination	2,960	30	48		x			0.00	10
Old Hwy 92	Secondary	55		770	24	16						
Location 11-T15/G46 (T w/ Mod. Skew)												
T15	Secondary	55	Destination	3,140	30	48		x2			0.00	11
G46	Secondary	55		950	24	10						
Location 12-T15/Jewel (T)												
T15	Secondary	55	Destination	3,140	30	48		x			0.00	12
Jewell Dr.	Secondary	55		190	18	12						
Location 13-G46/198th Pl.(T)												
G46	Secondary	55	-	950	24	48		x			0.00	13
198th	Secondary	55		70	18	10						

C. Itemized Breakdown of Cost

Marion County anticipates working with the local power company Mid American Energy for all but one of the light installations. They can perform the installation of a mast arm and light on an existing pole and also install new breakaway metal poles. The cost estimate from them for the mounting of a light on an existing pole is free of charge, however, the powering of this will depend on the site, therefore, we have estimated this cost to be $5,000 per location. The Mid American estimate to install a new breakaway metal pole is $15,000 plus an estimated $5,000 per location for power supply.

The final location for installation is in the jurisdiction of Pella Cooperative Electric and is estimated for the purpose of this grant to be the same as a new installation by Mid American Energy. See table below for a summary of the costs and types of installations.

FY 2026 TSIP - Site Specific Application

Lighting Cost Estimate

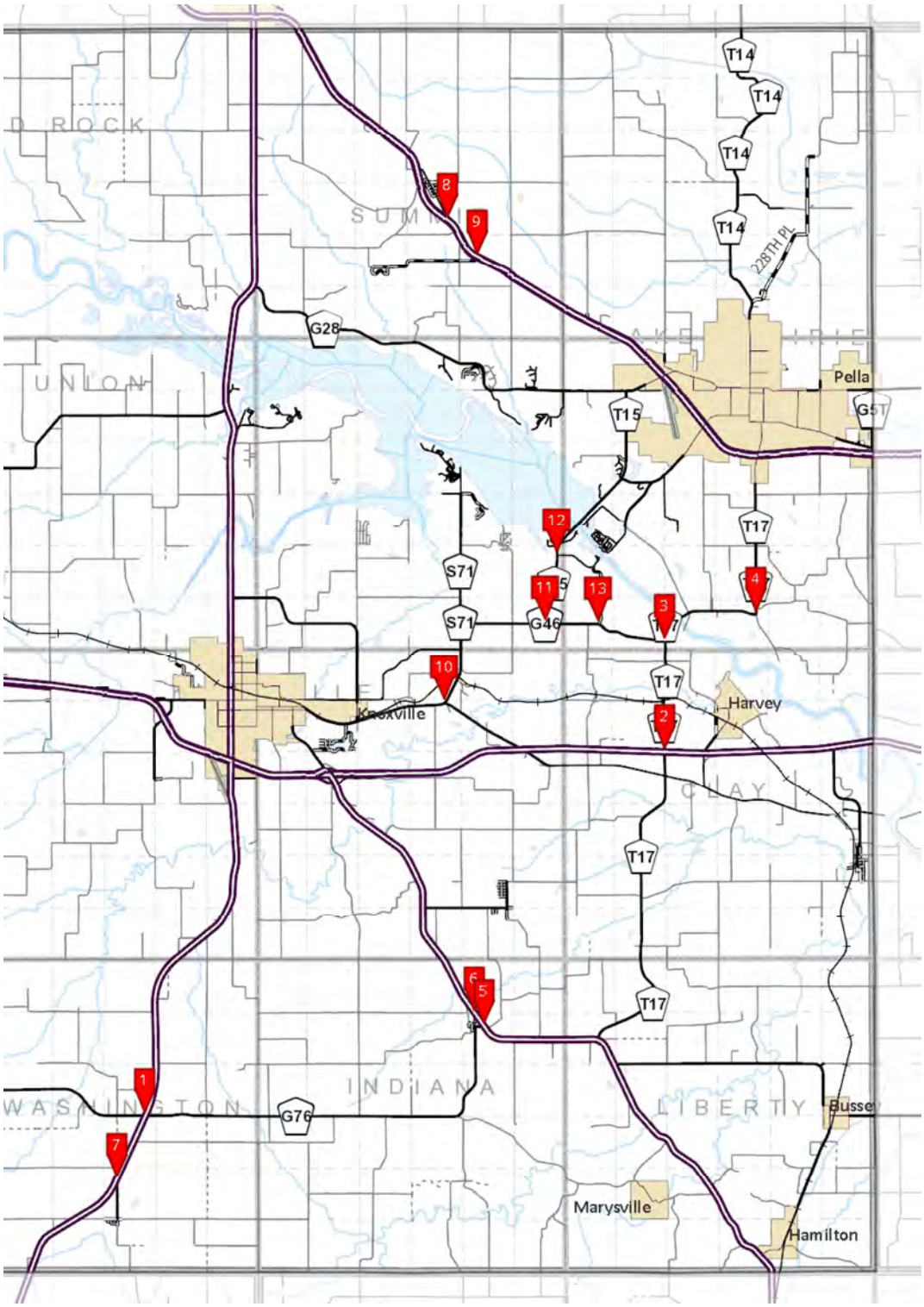
Created by: Tyler Christian 8/14/2024

	Quantity	Unit Price	Total
Breakaway Metal Pole w/ Installation	13	$15,000	$195,000
Electric Service & Wiring Only	3	$5,000	$15,000
Contingency (10%)	1	$21,000	$21,000
		Total	**$231,000**

D. Time Schedule

TSIP Application Due	August 15, 2024
TSIP Award Notification	January, 2025
TSIP Funding Available	July 1, 2025
Final Quote/Estimate	August 2025 (est.)
Commence Installation	Fall 2025 (est.)
Installation Complete	June 2026 (est.)

E. Map

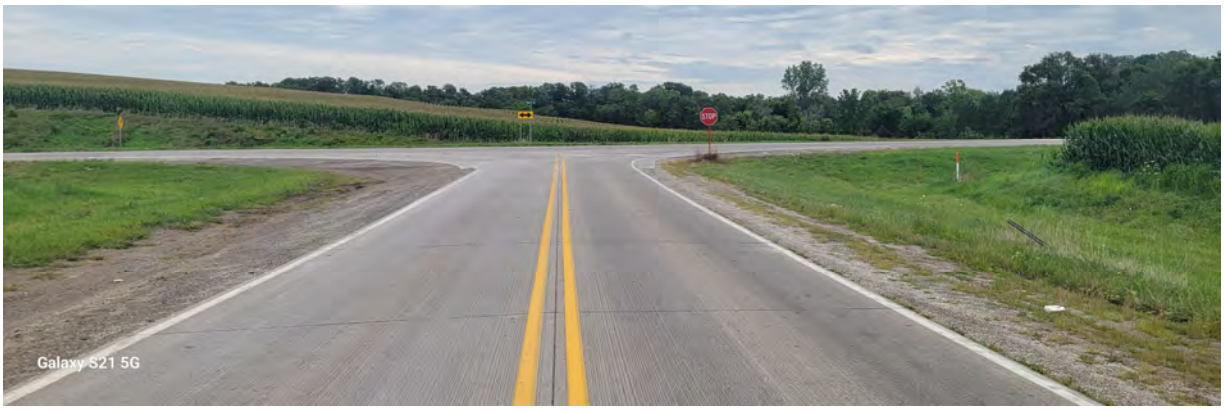

T14
T14
T14
T14
228TH PL
8
9
G28
UNION
Pella
G5T
T15
12
T17
S71
11
13
3
4
S71
G46
T17
10
Knoxville
Harvey
2
T17
T17
6
5
T17
1
INDIANA
WASHINGTON
G76
LIBERTY
Busse
7
Marysville
Hamilton

F. Pictures

Location 1:

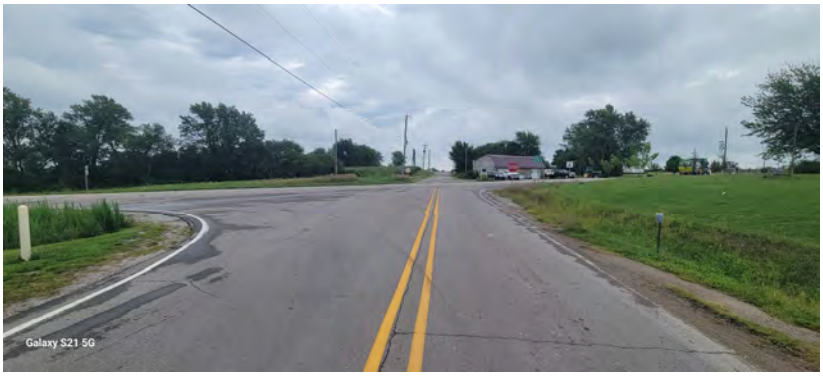
Location 2:

Location 3:



Location 4:

Location 5:



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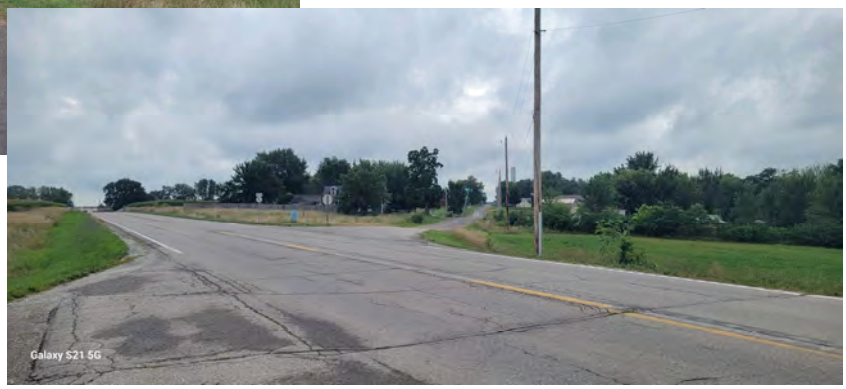
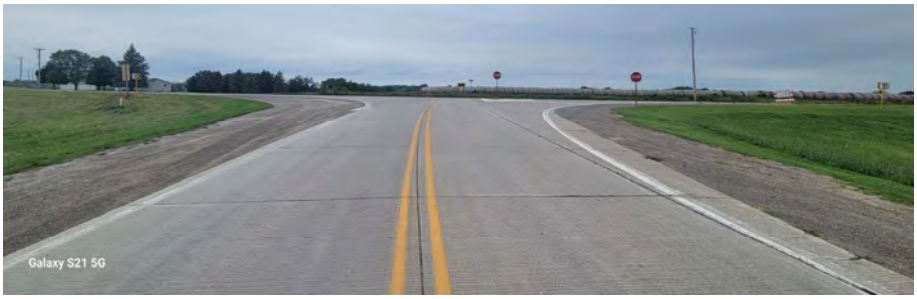


Location 7:

Location 8:

Location 9:

Location 10:



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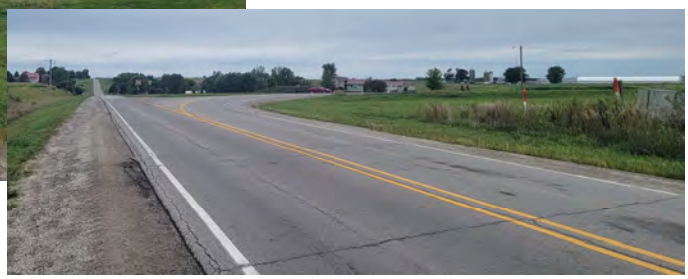


Location 12:

Location 13:

G & H Plan View w/ Aerial:

A PDF document is attached in the Appendix section of this application including an aerial plan view of each project location and showing the layout and laterial offset of each proposed or existing pole for which a light would be placed.

I. ICAT Crash Summary of Motor Vehicle Accidents

A PDF document is attached in the Appendix section of this application including ICAT data for each location, listed in or of the locations as shown the in table in the Narrative.

J. Traffic Volumes and Turning Movements

Traffic volumes represented at the various intersection locations are from the Iowa DOT 2022 counts interactive map. Volumes for each leg of the intersections are listed in the table provided in the narrative. No turning movement counts or diagrams avialable from within the last 22 years, so this information was excluded.

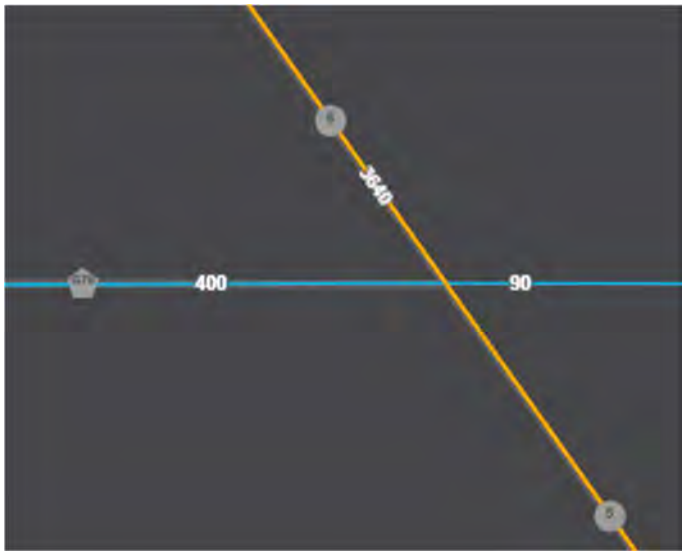
Location 1:

Location 2:

Location 3:

Location 4:

Location 5:



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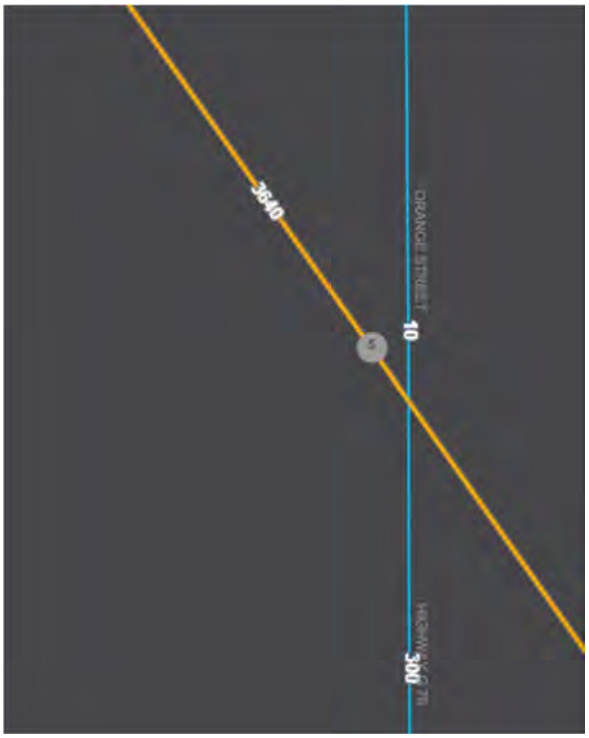
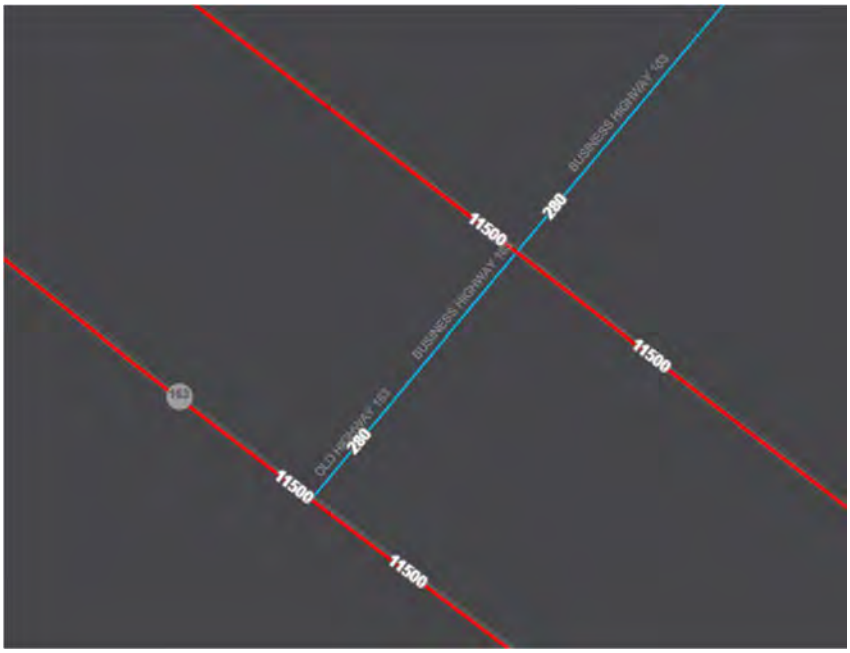


Location 7:

Location 8:



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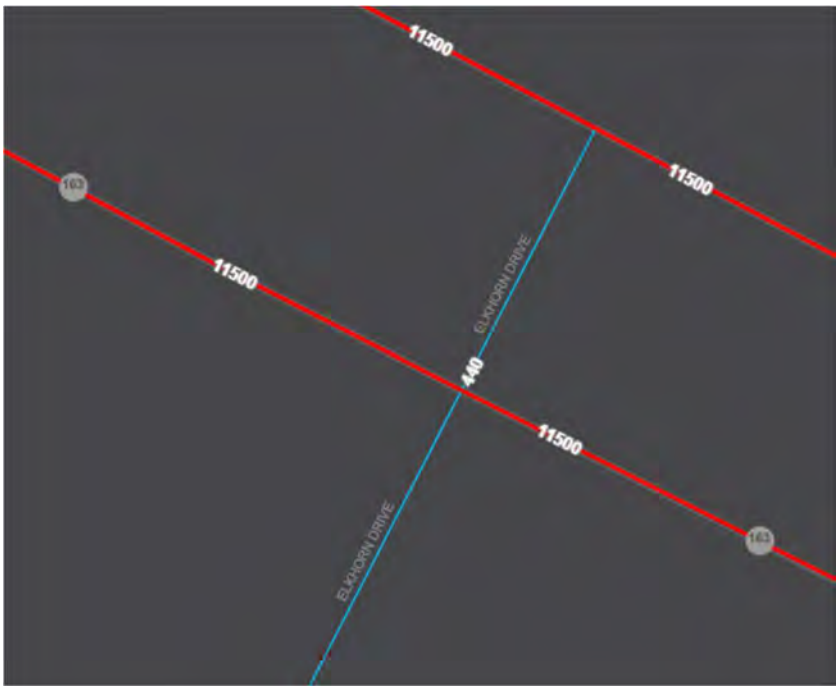
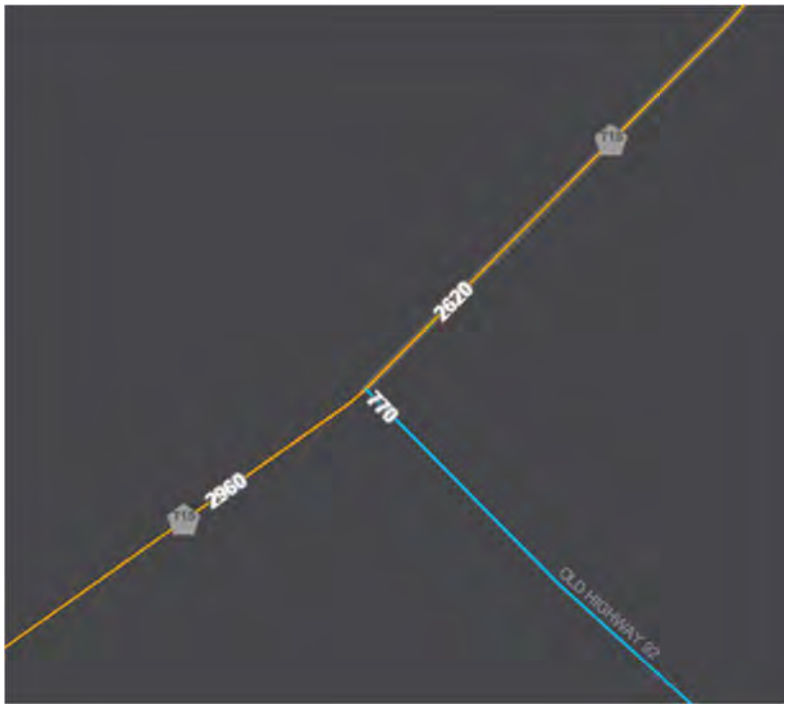
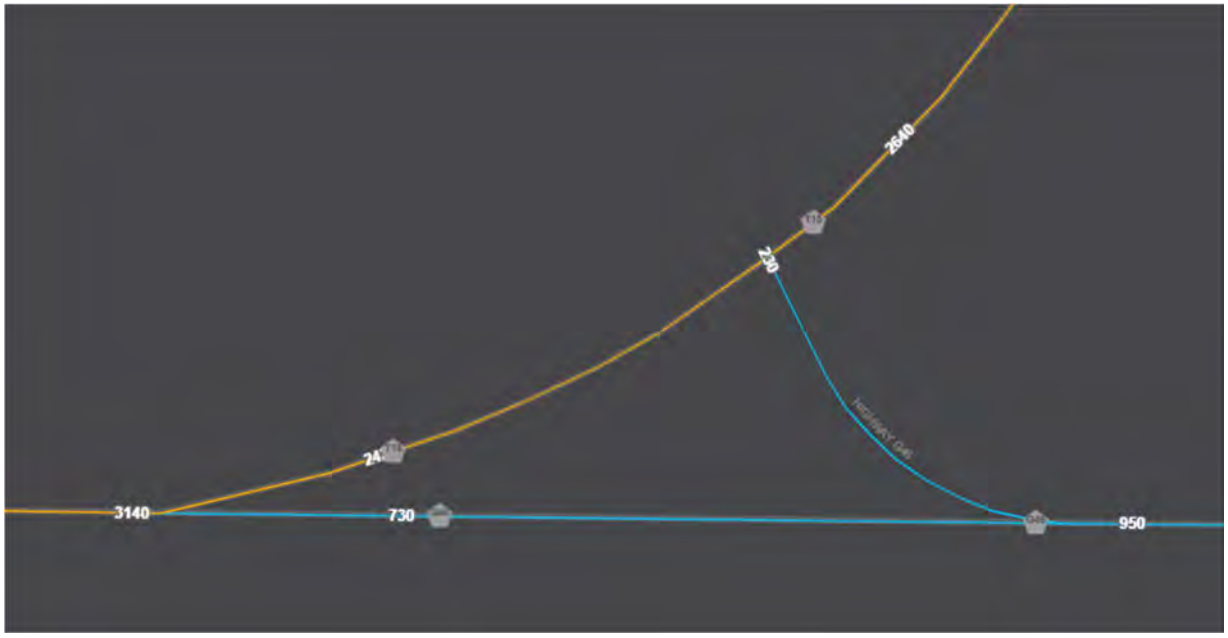


Location 10:



Location 11:



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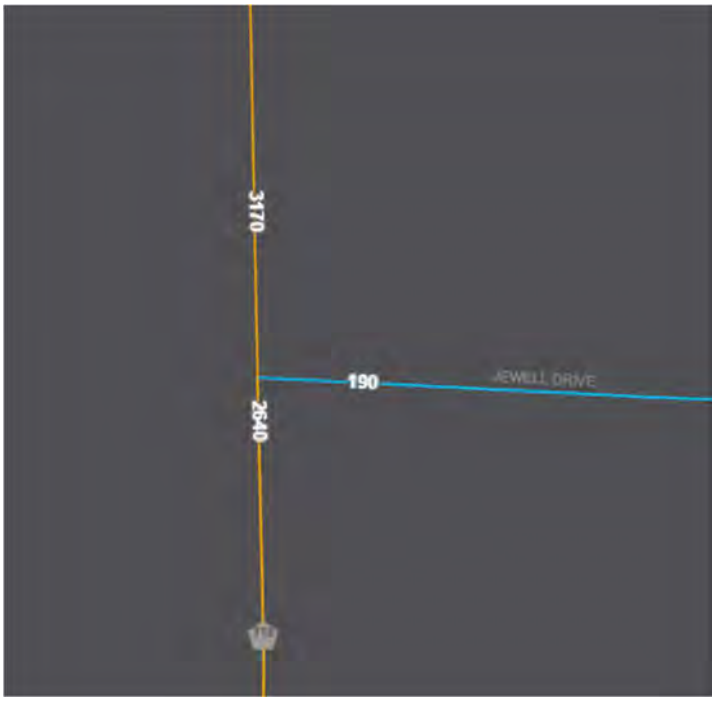
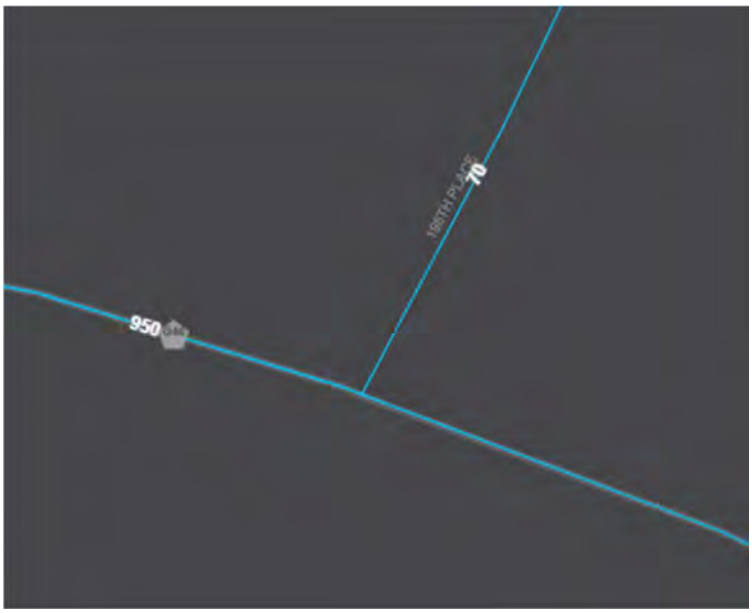


Location 13:



L. Benefit Cost Ratio Worksheet

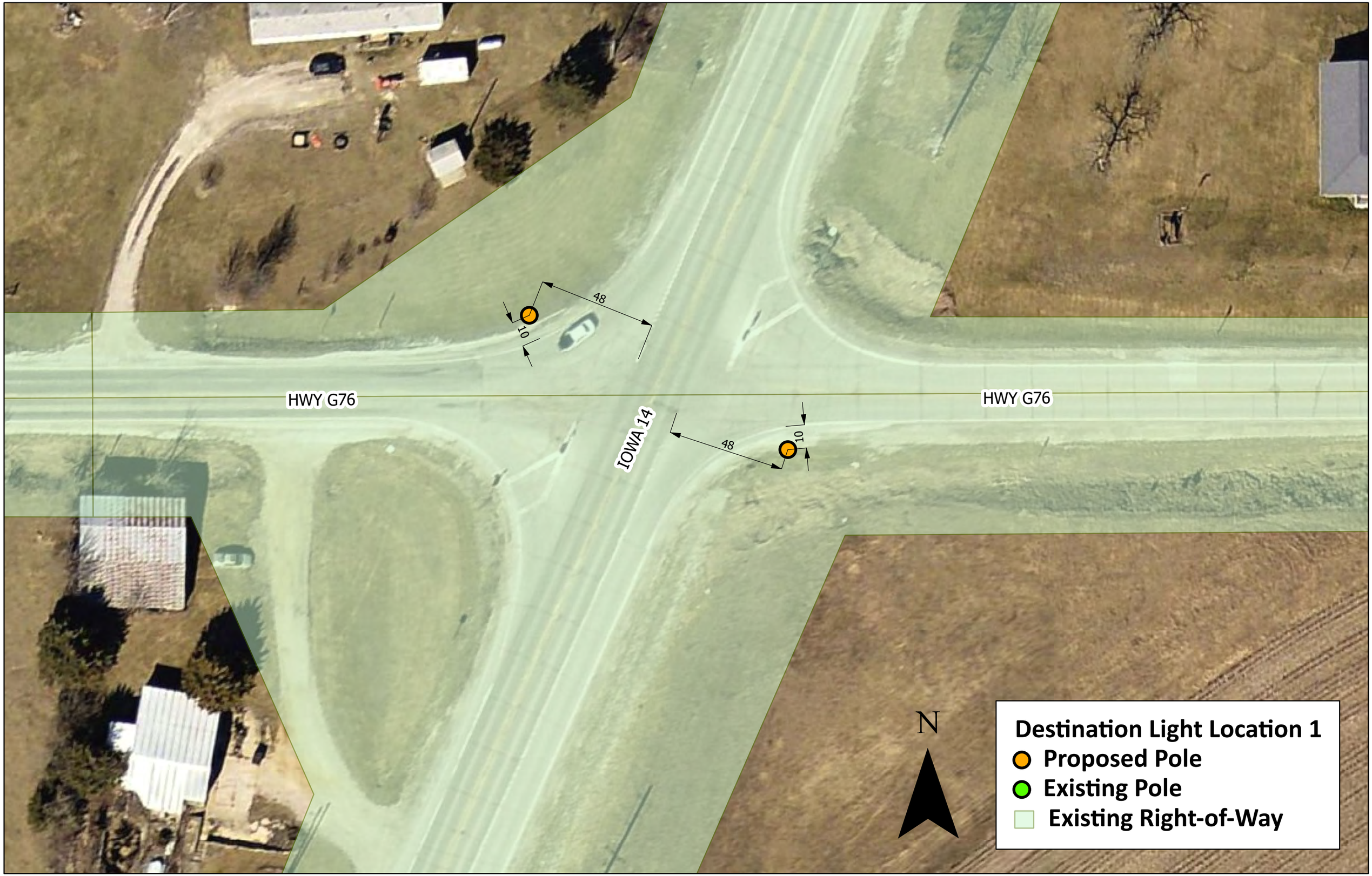
Per Site Specific application instructions, a Benefit/Cost worksheet has been provided. A PDF document is attached in the Appendix section of this application including the Cost Benefit sheets for each location.

Principal Contact/ Company Information

Tyler Christian, P.E.
Marion County Engineer
tchristian@marioncountyiowa.gov

Marion County Road Department
402 Willets Drive, Knoxville, IA 50138
Tel (641) 828-2225
Fax (641) 828-7349

Appendix – Included in Separate PDF


HWY G76
HWY G76
IOWA 14
48
10
48
10
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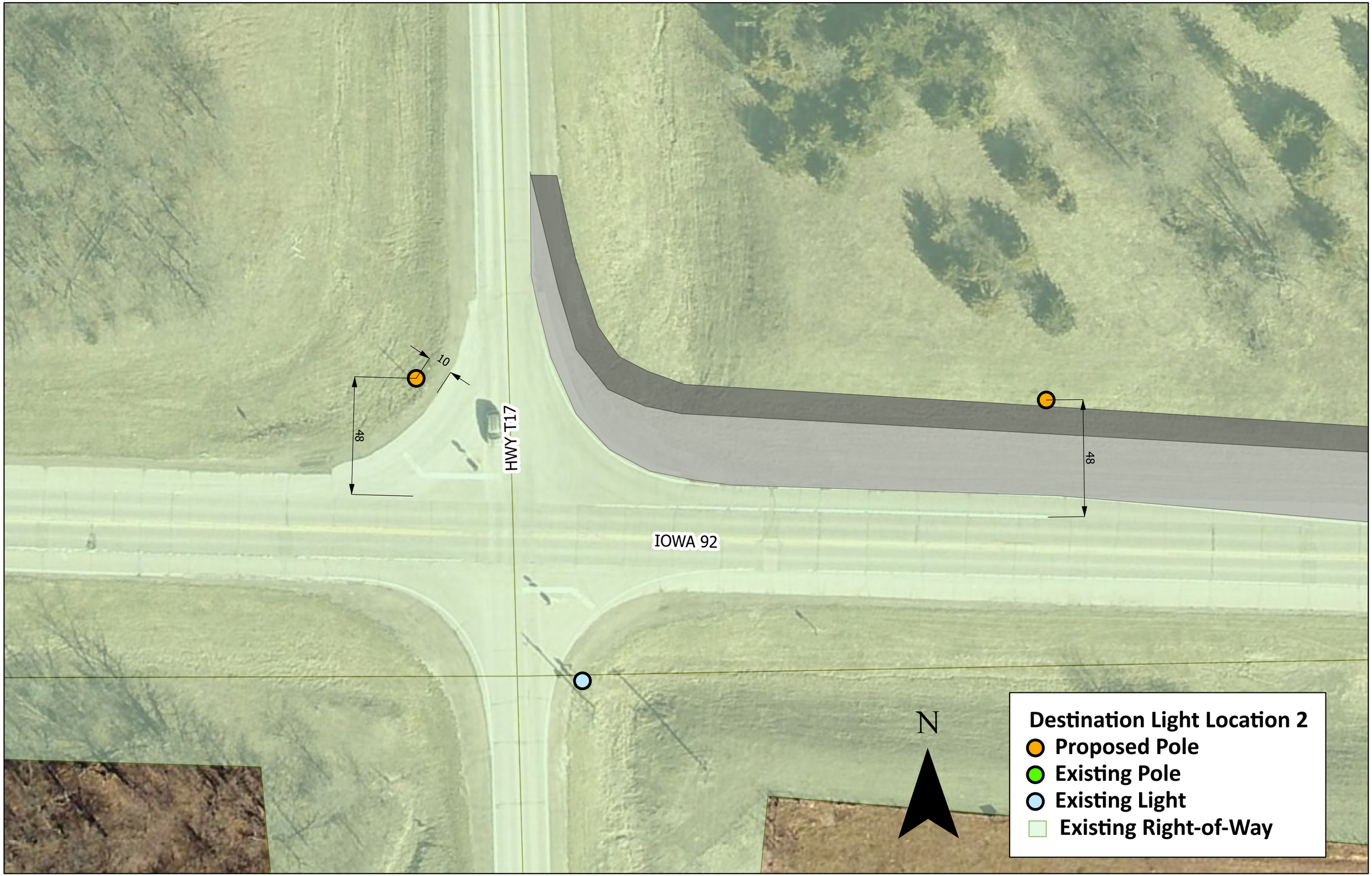
Destination Light Location 1
Proposed Pole
Existing Pole
Existing Right-of-Way


10
48
HWY T17
48
IOWA 92
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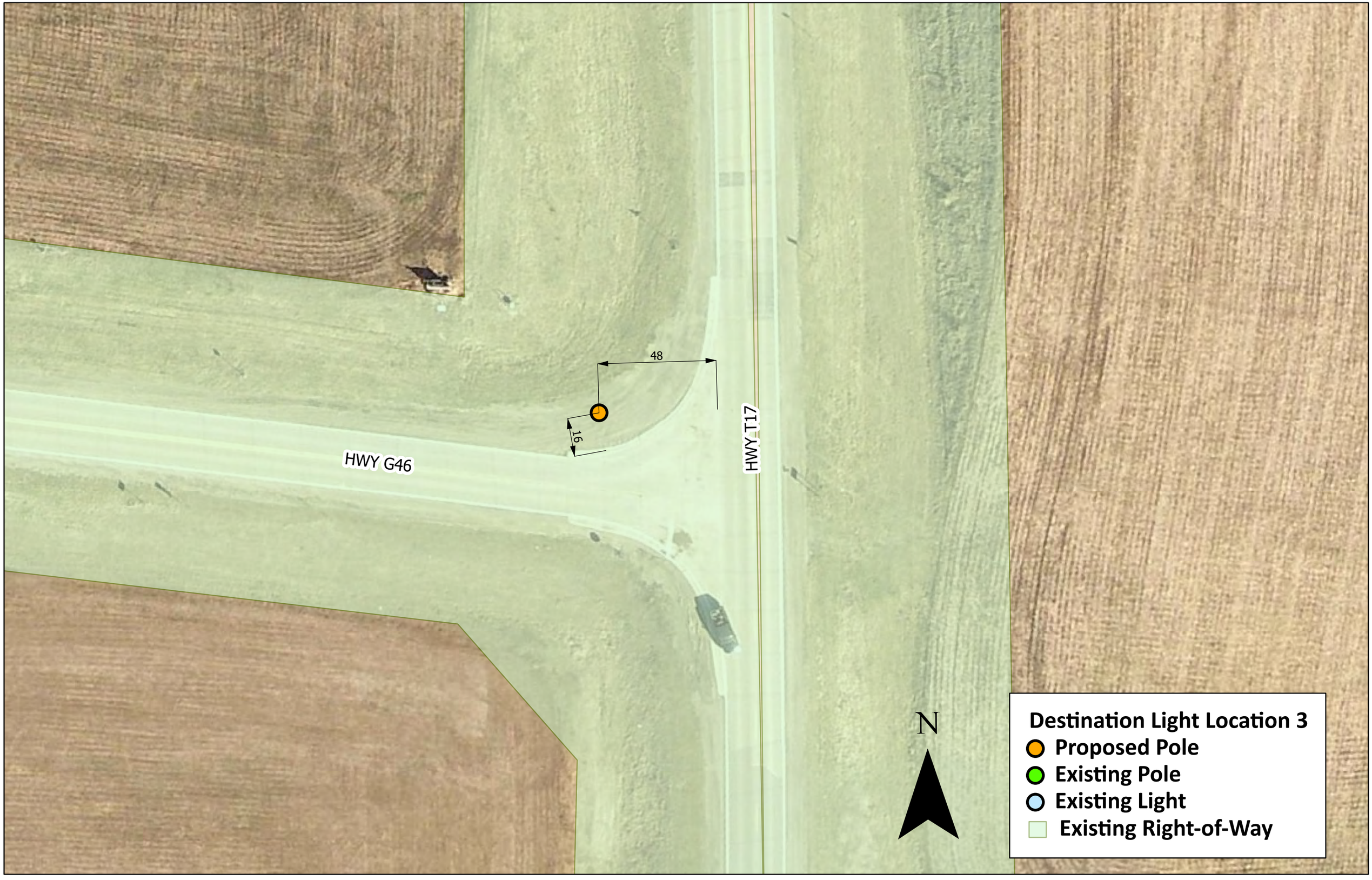
Proposed Pole
Existing Pole
Existing Light
Existing Right-of-Way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16
HWY G46
HWY T17
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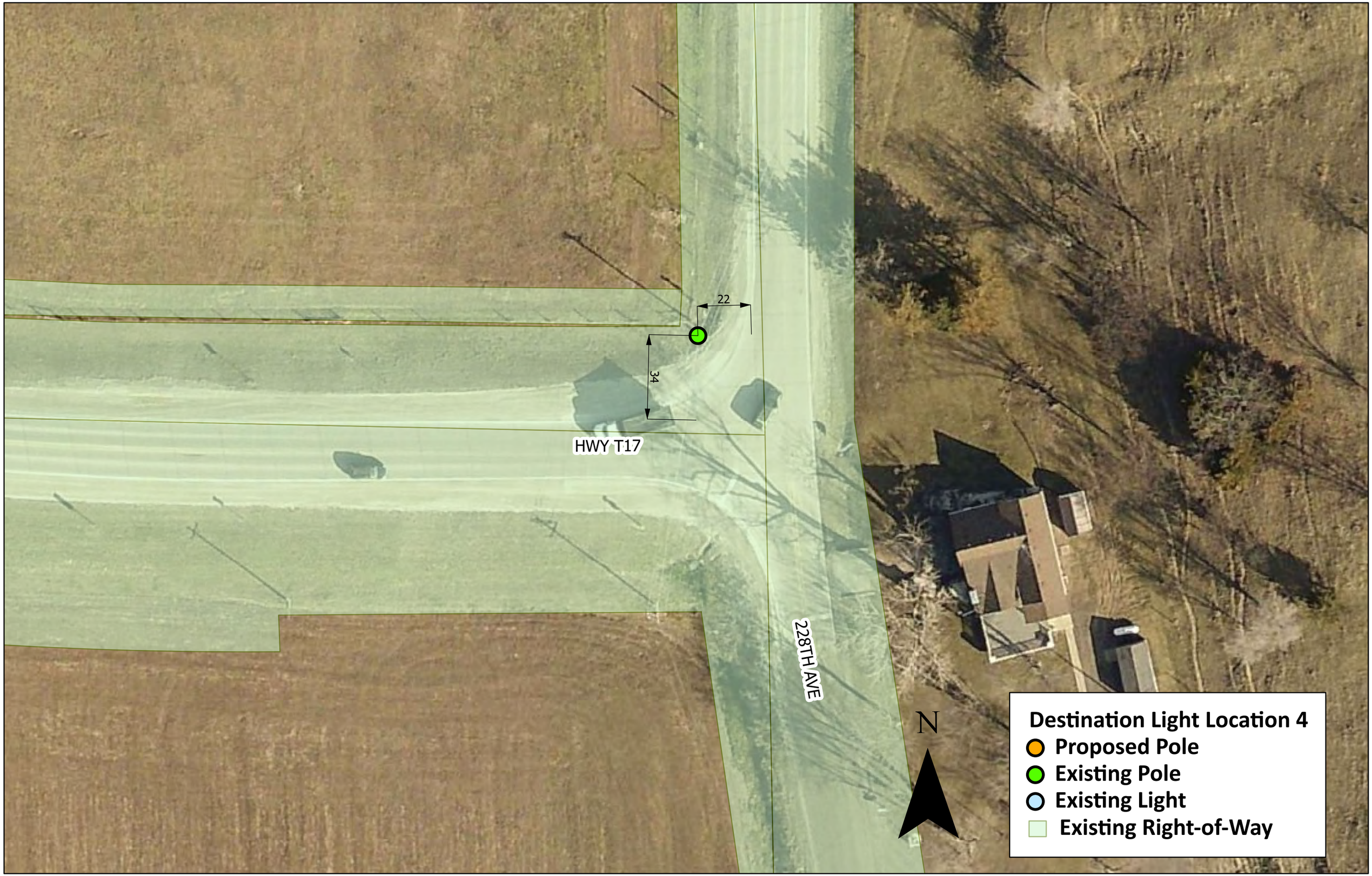
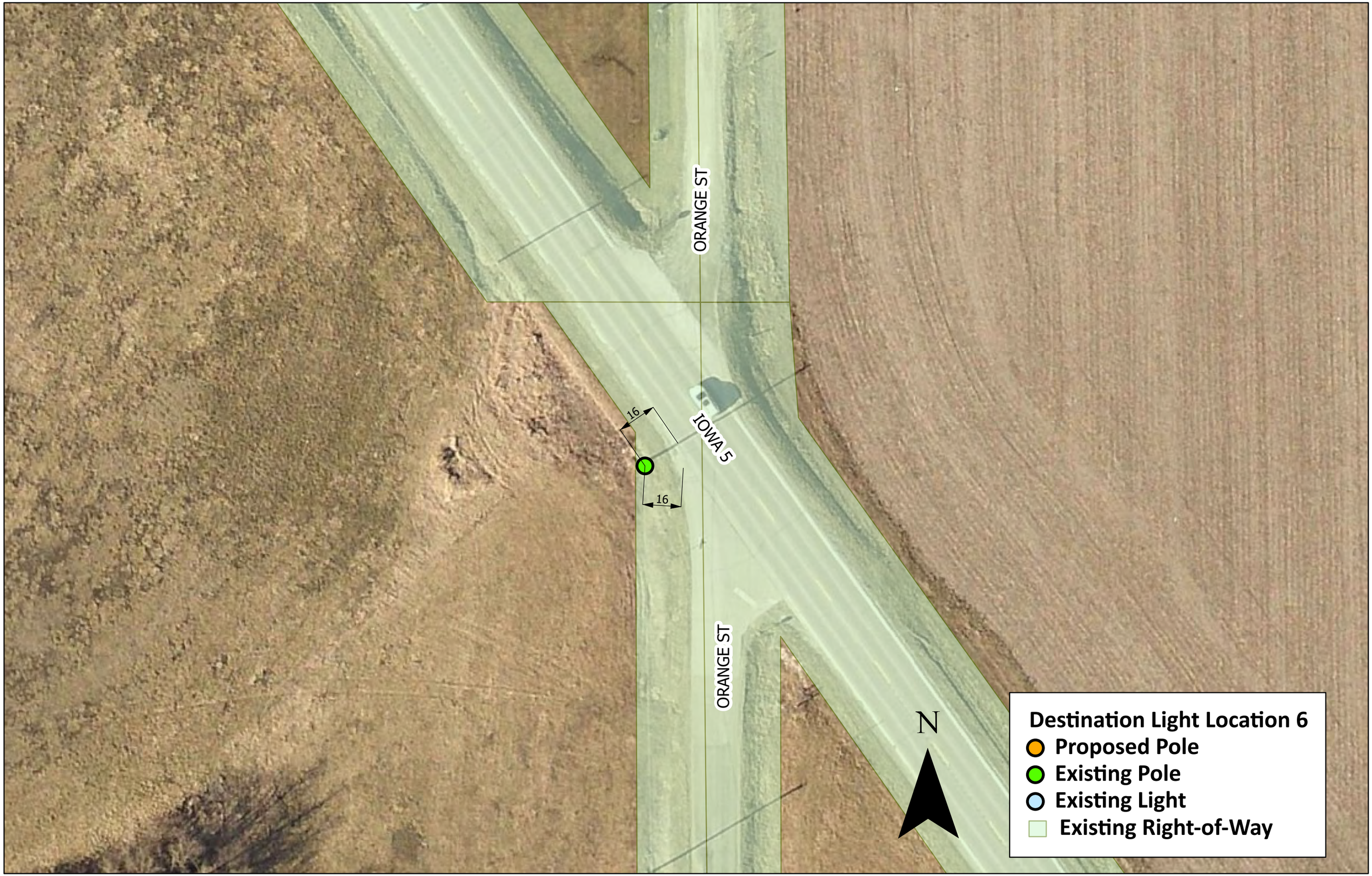
Proposed Pole
Existing Pole
Existing Light
Existing Right-of-Way


22
34
HWY T17
228TH AVE
N
Destination Light Location 4
Proposed Pole
Existing Pole
Existing Light
Existing Right-of-Way

48
10
IOWA 5
HWY G76
176TH PL
N
Destination Light Location 5
Proposed Pole
Existing Pole
Existing Light
Existing Right-of-Way


ORANGE ST
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ORANGE ST
16
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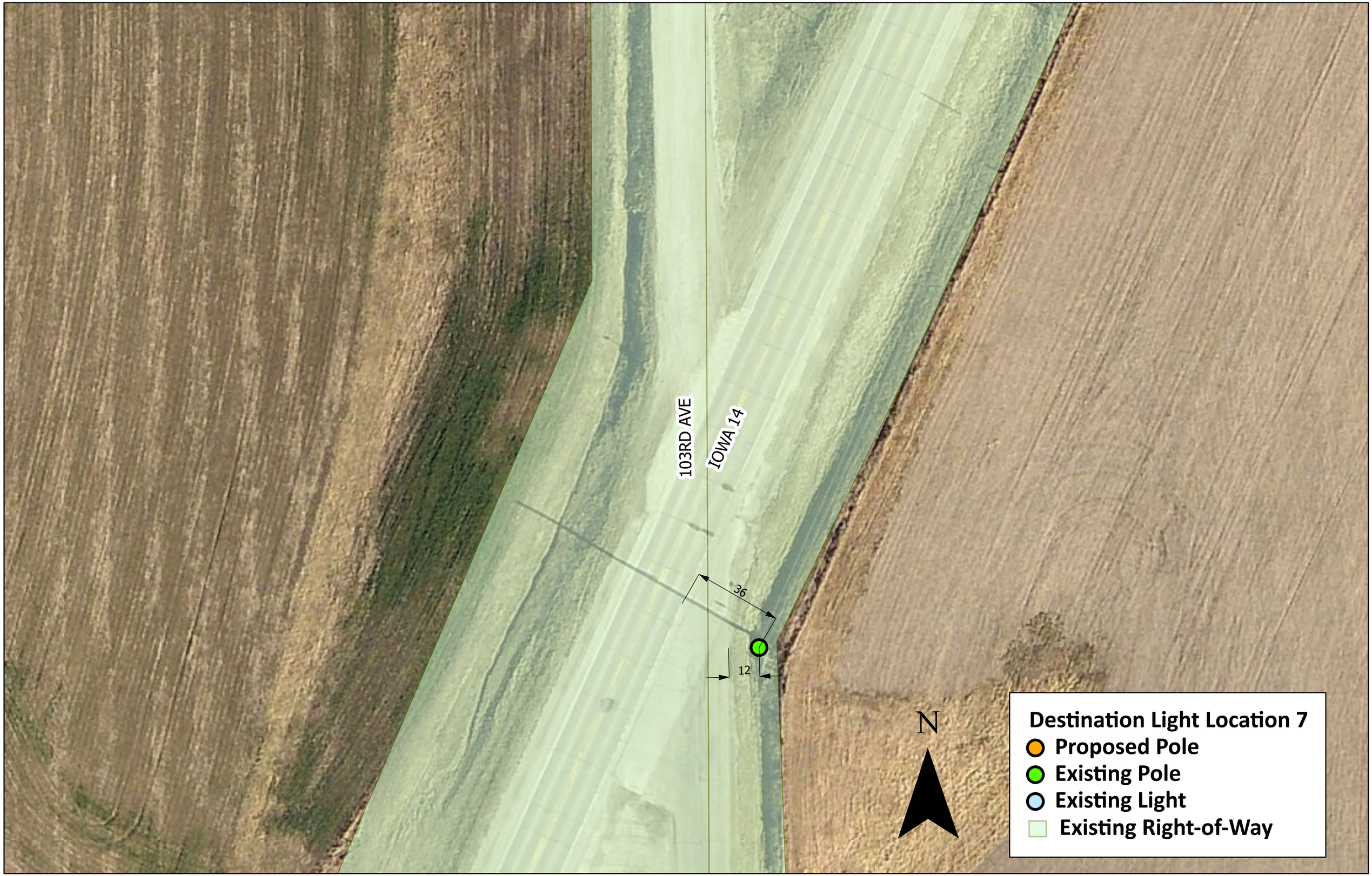
Proposed Pole
Existing Pole
Existing Light
Existing Right-of-Way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IOWA 14
36
12
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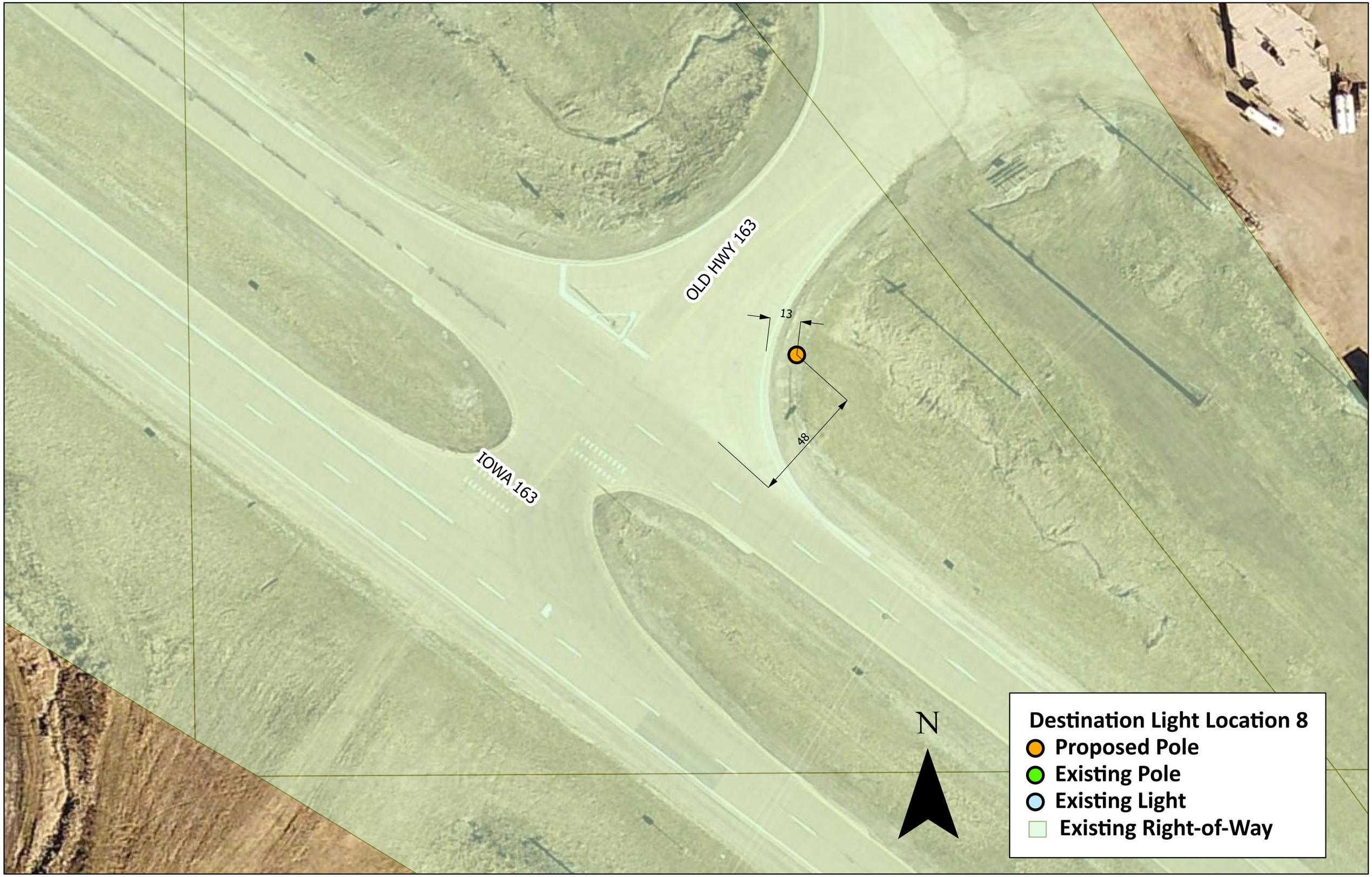
Existing Pole
Existing Light
Existing Right-of-Way


OLD HWY 163
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13
48
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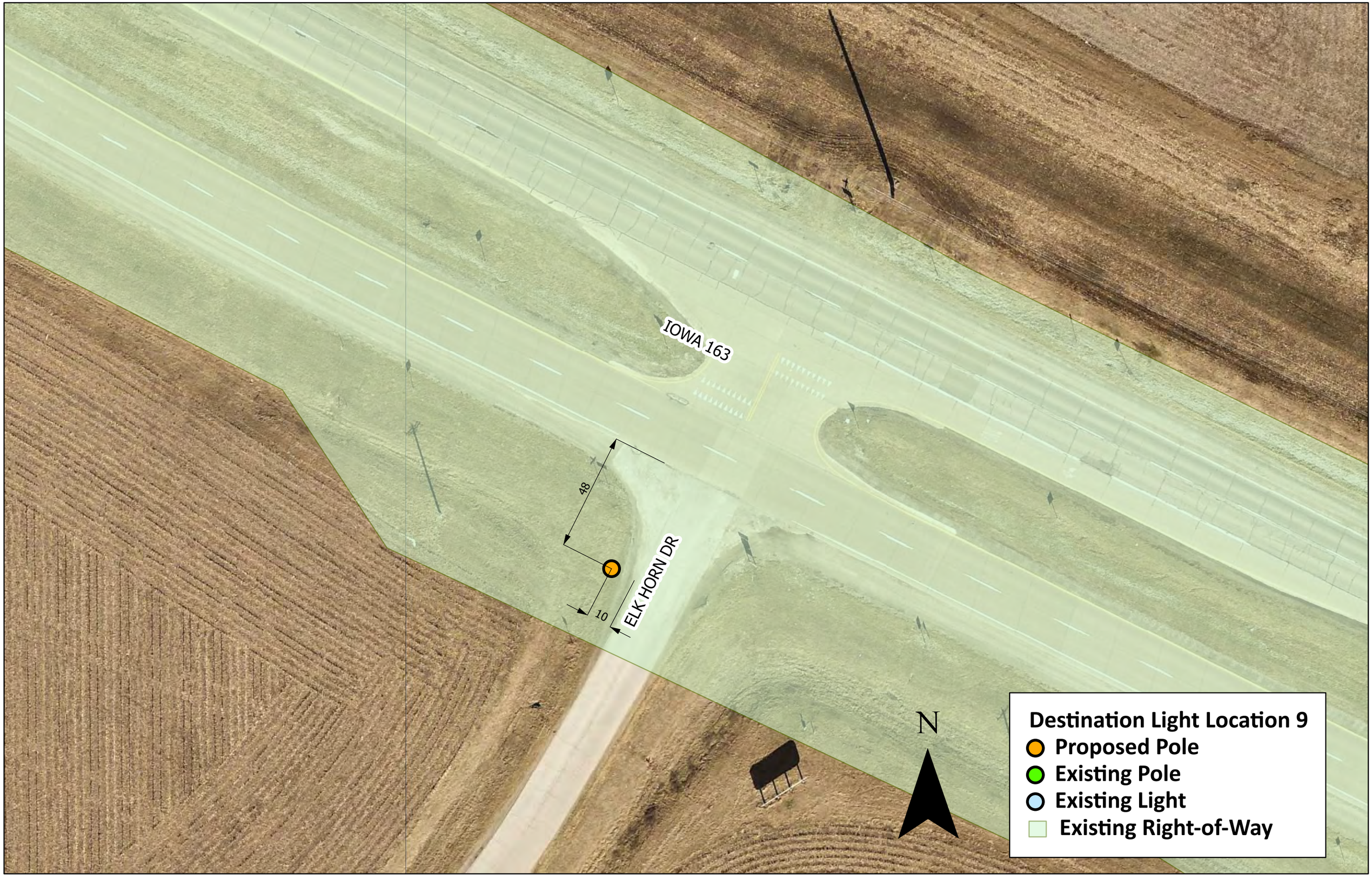
Proposed Pole
Existing Pole
Existing Light
Existing Right-of-Way


IOWA 163
48
10
ELK HORN DR
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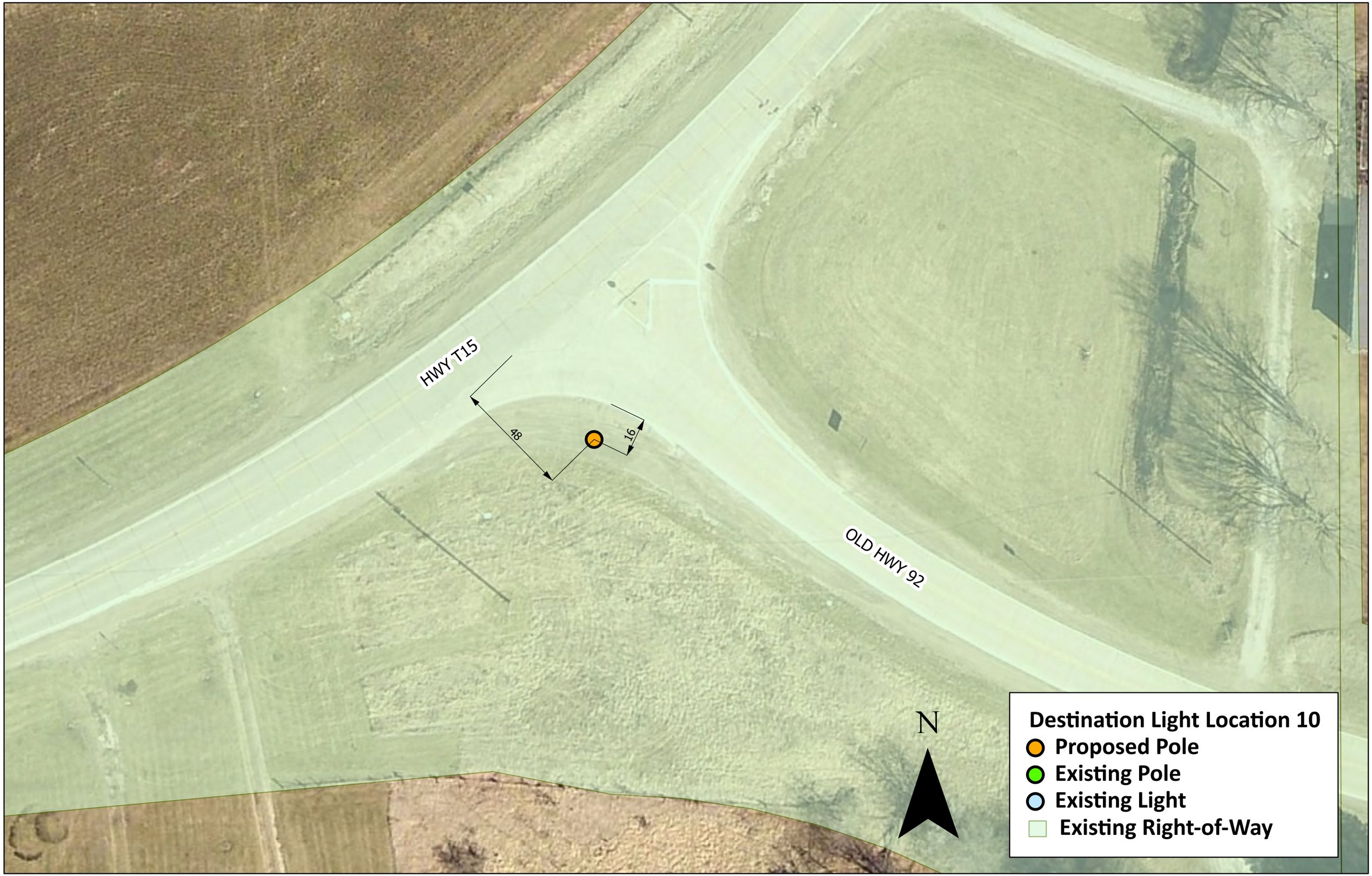
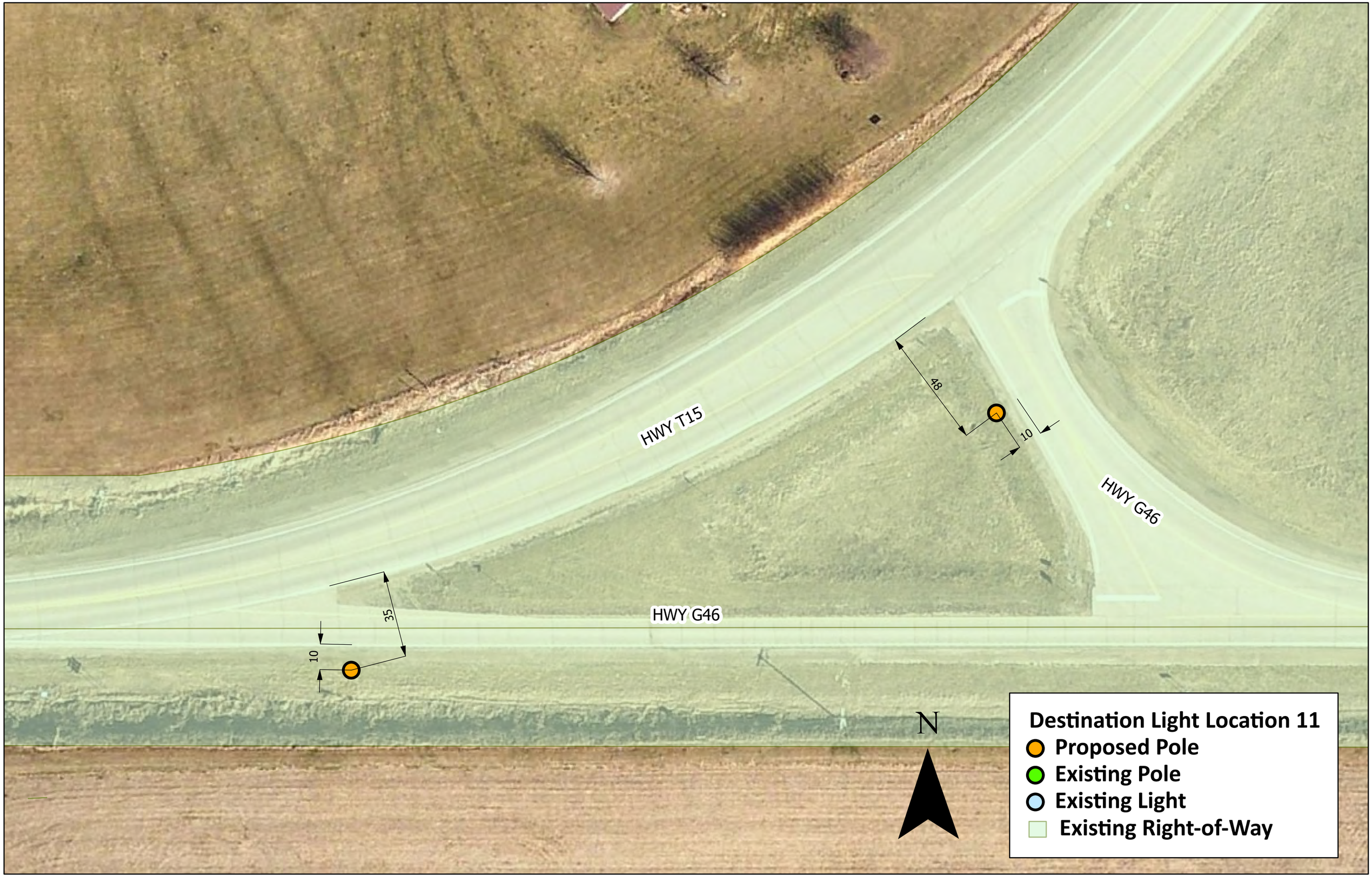
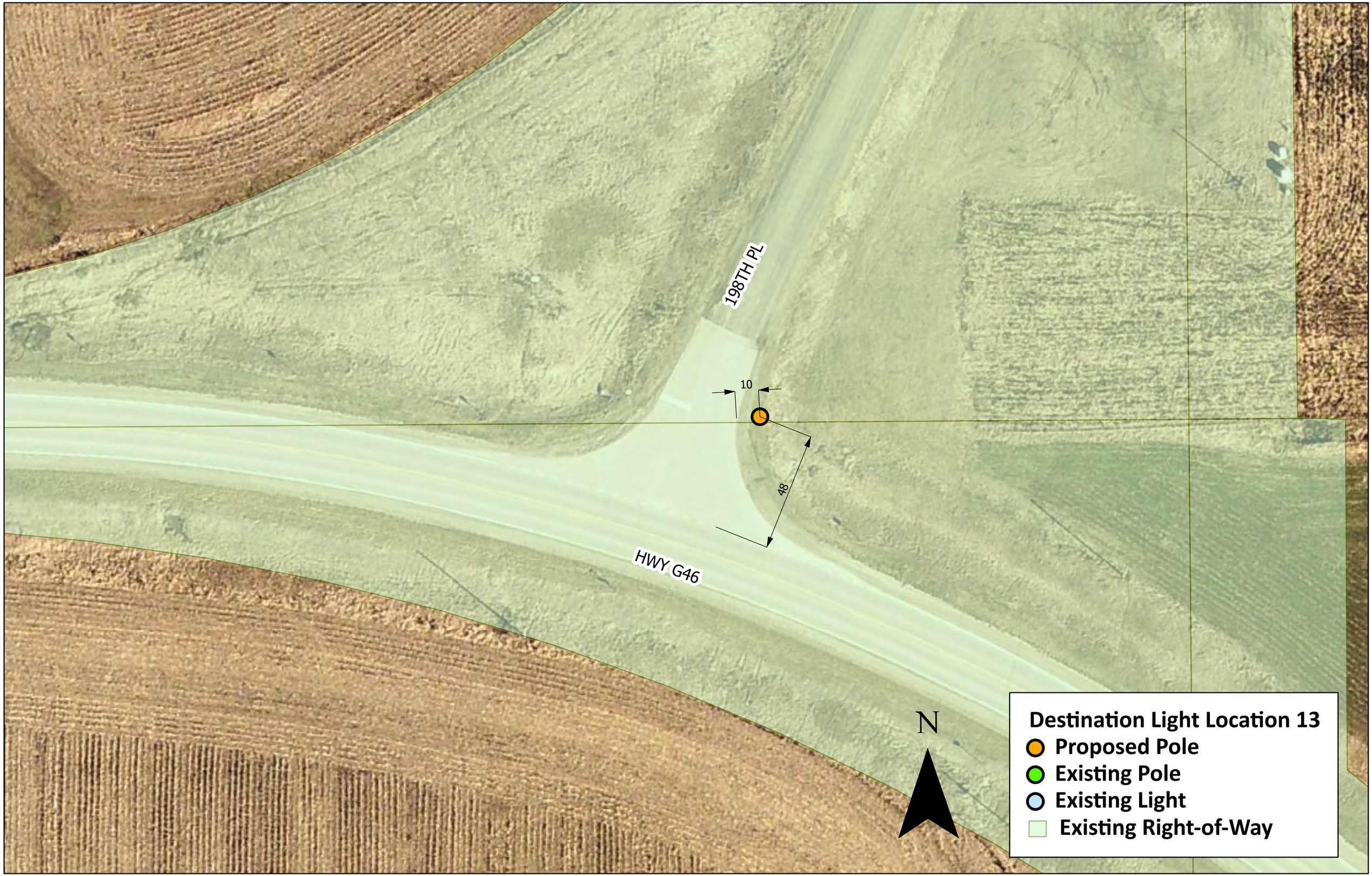
Proposed Pole
Existing Pole
Existing Light
Existing Right-of-Way


HWY T15
48
16
OLD HWY 92
N
Destination Light Location 10
Proposed Pole
Existing Pole
Existing Light
Existing Right-of-Way


HWY T15
HWY G46
HWY G46
48
10
35
10
N
Destination Light Location 11
Proposed Pole
Existing Pole
Existing Light
Existing Right-of-Way

JEWELL DR
HWY T15
12
48
N
Destination Light Location 12
Proposed Pole
Existing Pole
Existing Light
Existing Right-of-Way


198TH PL
10
48
HWY G46
N
Destination Light Location 13
Proposed Pole
Existing Pole
Existing Light
Existing Right-of-Way

Iowa Crash Analysis Tool
Quick Report
2019-2023

Crash Severity	6
Fatal Crash	0
Suspected Serious Injury Crash	0
Suspected Minor Injury Crash	4
Possible/Unknown Injury Crash	1
Property Damage Only	1

Injury Status Summary	7
Fatalities	0
Suspected serious/incapacitating	0
Suspected minor/non-incapacitating	5
Possible (complaint of pain/injury)	2
Uninjured	0
Unknown	0
Not Reported	0

Property/Vehicles/Occupants	
Property Damage Total (dollars):	94,500.00
Average (per crash dollars):	15,750.00
Total Vehicles:	12.00
Average (per crash):	2.00
Total Occupants:	18.00
Average (per crash):	3.00

Average Severity	
Fatalities/Fatal Crash:	0.00
Fatalities/Crash:	0.00
Injuries/Crash:	1.17
Major Injuries/Crash:	0.00
Minor Injuries/Crash:	0.83
Possible/Unknown Injuries/Crash:	0.33

Major Cause			6
Animal	0	Ran traffic signal	0
Ran stop sign	1	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	1	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	0
Exceeded authorized speed	0	Improper or erratic lane changing	0
Operating vehicle in an reckless/erratic/care...	0	Followed too close	1
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	1
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		

Iowa Crash Analysis Tool
Quick Report
2019-2023

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	1	0	0	1	0	0	0	2
Monday	0	0	0	0	0	0	0	0	0	0	1	0	0	1
Tuesday	0	0	0	0	0	0	0	1	0	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	0	0	0	0	0	0	0	0	0	0
Friday	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Saturday	0	0	0	0	0	1	0	1	0	0	0	0	0	2
Total	0	0	0	0	0	1	1	2	0	1	1	0	0	6

Manner of Crash Collision	**6**
Non-collision (single vehicle)	0
Head-on (front to front)	0
Rear-end (front to rear)	1
Angle (oncoming left turn)	1
Broadside (front to side)	3
Sideswipe (same direction)	1
Sideswipe (opposite direction)	0
Rear to rear	0
Rear to side	0
Not reported	0
Other	0
Unknown	0

Surface Conditions	**6**
Dry	4
Wet	1
Ice/frost	0
Snow	0
Slush	1
Mud/dirt	0
Water (standing or moving)	0
Sand	0
Oil	0
Gravel	0
Not reported	0
Other	0
Unknown	0

Fixed Object Struck			**12**
Bridge overhead structure	0	Bridge pier or support	0
Bridge/bridge rail parapet	0	Curb/island/raised median	0
Ditch	1	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)	11

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	1	0	0	0	1
= 19	0	0	0	0	0
= 20	0	0	0	0	0
>= 21 and <= 24	0	0	0	0	0
>= 25 and <= 29	0	1	0	0	1
>= 30 and <= 34	0	2	0	0	2
>= 35 and <= 39	0	0	0	0	0
>= 40 and <= 44	0	1	0	0	1
>= 45 and <= 49	0	0	0	0	0
>= 50 and <= 54	0	0	0	0	0
>= 55 and <= 59	0	1	0	0	1
>= 60 and <= 64	0	0	0	0	0
>= 65 and <= 69	0	2	0	0	2
>= 70 and <= 74	0	1	0	0	1
>= 75 and <= 79	0	0	0	0	0
>= 80 and <= 84	0	1	0	0	1
>= 85 and <= 89	0	1	0	0	1
>= 90 and <= 94	0	0	0	0	0
>= 95	0	0	0	0	0
Not reported	0	0	0	0	0
Unknown	0	0	0	0	0
Total	2	10	0	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	12
Blood	0
Urine	0
Breath	0
Vitreous	0
Refused	0
Not reported	0

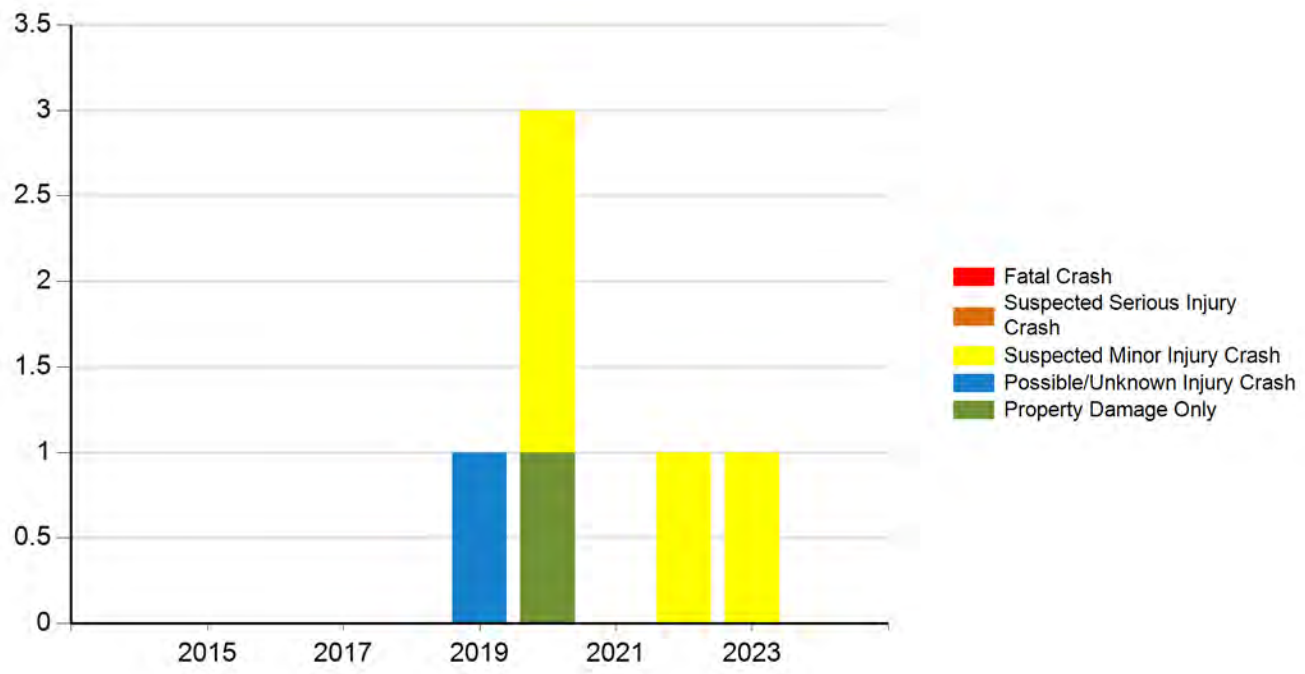
Drug Test Given	12
None	12
Blood	0
Urine	0
Breath	0
Vitreous	0
Refused	0
Not reported	0

Drug Test Result	12
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	12
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**
2014	0	0	0	0	0	0
2015	0	0	0	0	0	0
2016	0	0	0	0	0	0
2017	0	0	0	0	0	0
2018	0	0	0	0	0	0
2019	0	0	0	1	0	1
2020	0	0	2	0	1	3
2021	0	0	0	0	0	0
2022	0	0	1	0	0	1
2023	0	0	1	0	0	1
2024	0	0	0	0	0	0
Total	0	0	4	1	1	6

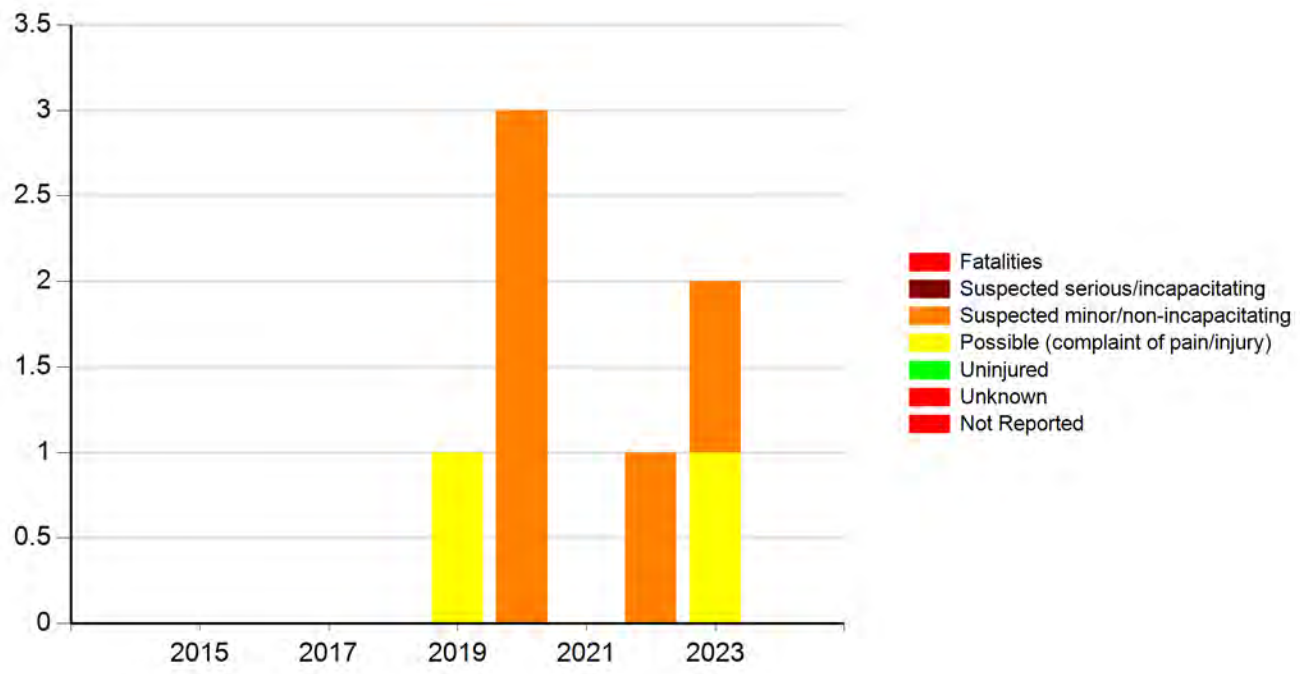
Severity/Year



Injury Status - Annual

Crash Year	Fatalities	Suspected serious/incapacitating	Suspected minor/non-incapacitating	Possible (complaint of pain/injury)	Uninjured	Unknown	Not Reported	**Total**
2014	0	0	0	0	0	0	0	0
2015	0	0	0	0	0	0	0	0
2016	0	0	0	0	0	0	0	0
2017	0	0	0	0	0	0	0	0
2018	0	0	0	0	0	0	0	0
2019	0	0	0	1	0	0	0	1
2020	0	0	3	0	0	0	0	3
2021	0	0	0	0	0	0	0	0
2022	0	0	1	0	0	0	0	1
2023	0	0	1	1	0	0	0	2
2024	0	0	0	0	0	0	0	0
Total	0	0	5	2	0	0	0	7

Injury Status/Year



Meeting the following criteria

Jurisdiction: Counties (Marion)
Year: 2019, 2020, 2021, 2022, 2023
Map Selection: Yes
Filter: Non Animal-related

Analyst Information

IA 14 & G76

Iowa Crash Analysis Tool
Quick Report
2019-2023

Crash Severity	8
Fatal Crash	0
Suspected Serious Injury Crash	0
Suspected Minor Injury Crash	3
Possible/Unknown Injury Crash	2
Property Damage Only	3

Injury Status Summary	10
Fatalities	0
Suspected serious/incapacitating	0
Suspected minor/non-incapacitating	4
Possible (complaint of pain/injury)	6
Uninjured	0
Unknown	0
Not Reported	0

Property/Vehicles/Occupants	
Property Damage Total (dollars):	108,100.00
Average (per crash dollars):	13,512.50
Total Vehicles:	18.00
Average (per crash):	2.25
Total Occupants:	25.00
Average (per crash):	3.13

Average Severity	
Fatalities/Fatal Crash:	0.00
Fatalities/Crash:	0.00
Injuries/Crash:	1.25
Major Injuries/Crash:	0.00
Minor Injuries/Crash:	0.50
Possible/Unknown Injuries/Crash:	0.75

Major Cause			8
Animal	0	Ran traffic signal	0
Ran stop sign	2	Failed to yield to emergency vehicle	0
FTYROW: At uncontrolled intersection	0	FTYROW: Making right turn on red signal	0
FTYROW: From stop sign	4	FTYROW: From yield sign	0
FTYROW: Making left turn	1	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	0
Exceeded authorized speed	0	Improper or erratic lane changing	0
Operating vehicle in an reckless/erratic/care...	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	1
Unknown	0	Not reported	0
Other: No improper action	0		

Iowa Crash Analysis Tool
Quick Report
2019-2023

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	2	0	0	0	0	0	0	0	2
Monday	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Tuesday	0	0	0	0	0	0	1	1	1	0	0	0	0	3
Wednesday	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Thursday	0	0	0	0	0	1	0	1	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	0	0	3	1	2	2	0	0	0	0	8

Manner of Crash Collision	**8**
Non-collision (single vehicle)	0
Head-on (front to front)	0
Rear-end (front to rear)	1
Angle (oncoming left turn)	1
Broadside (front to side)	6
Sideswipe (same direction)	0
Sideswipe (opposite direction)	0
Rear to rear	0
Rear to side	0
Not reported	0
Other	0
Unknown	0

Surface Conditions	**8**
Dry	8
Wet	0
Ice/frost	0
Snow	0
Slush	0
Mud/dirt	0
Water (standing or moving)	0
Sand	0
Oil	0
Gravel	0
Not reported	0
Other	0
Unknown	0

Fixed Object Struck			**18**
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)	16

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	1	0	0	0	1
= 17	0	0	0	0	0
= 18	0	0	0	0	0
= 19	0	0	0	0	0
= 20	1	0	0	0	1
>= 21 and <= 24	2	2	0	0	4
>= 25 and <= 29	0	3	0	0	3
>= 30 and <= 34	1	0	0	0	1
>= 35 and <= 39	0	0	0	0	0
>= 40 and <= 44	0	1	0	0	1
>= 45 and <= 49	1	1	0	0	2
>= 50 and <= 54	0	0	0	0	0
>= 55 and <= 59	0	0	0	0	0
>= 60 and <= 64	1	1	0	0	2
>= 65 and <= 69	0	2	0	0	2
>= 70 and <= 74	0	0	0	0	0
>= 75 and <= 79	0	0	0	0	0
>= 80 and <= 84	0	1	0	0	1
>= 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	0	0	0
Total	7	11	0	0	18

Drug/Alcohol Related	8
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	8

Alcohol Test Given	18
None	18
Blood	0
Urine	0
Breath	0
Vitreous	0
Refused	0
Not reported	0

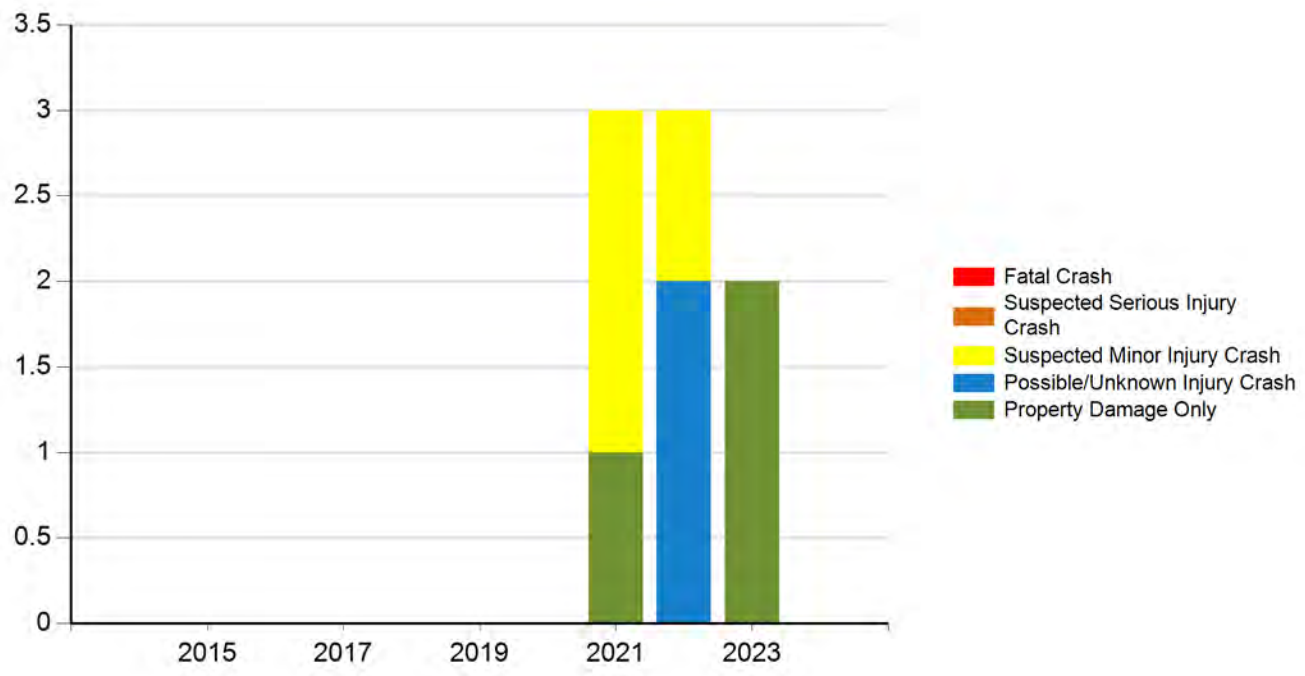
Drug Test Given	18
None	18
Blood	0
Urine	0
Breath	0
Vitreous	0
Refused	0
Not reported	0

Drug Test Result	18
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	18
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**
2014	0	0	0	0	0	0
2015	0	0	0	0	0	0
2016	0	0	0	0	0	0
2017	0	0	0	0	0	0
2018	0	0	0	0	0	0
2019	0	0	0	0	0	0
2020	0	0	0	0	0	0
2021	0	0	2	0	1	3
2022	0	0	1	2	0	3
2023	0	0	0	0	2	2
2024	0	0	0	0	0	0
Total	0	0	3	2	3	8

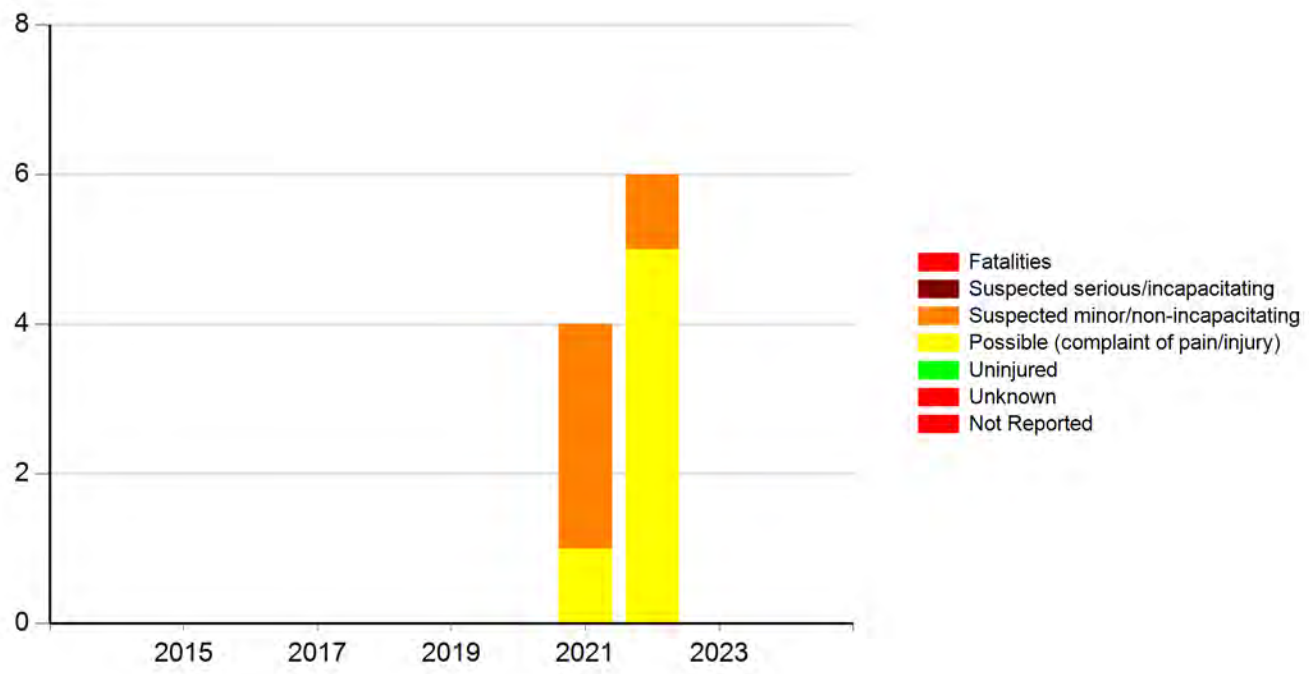
Severity/Year



Injury Status - Annual

Crash Year	Fatalities	Suspected serious/incapacitating	Suspected minor/non-incapacitating	Possible (complaint of pain/injury)	Uninjured	Unknown	Not Reported	**Total**
2014	0	0	0	0	0	0	0	0
2015	0	0	0	0	0	0	0	0
2016	0	0	0	0	0	0	0	0
2017	0	0	0	0	0	0	0	0
2018	0	0	0	0	0	0	0	0
2019	0	0	0	0	0	0	0	0
2020	0	0	0	0	0	0	0	0
2021	0	0	3	1	0	0	0	4
2022	0	0	1	5	0	0	0	6
2023	0	0	0	0	0	0	0	0
2024	0	0	0	0	0	0	0	0
Total	0	0	4	6	0	0	0	10

Injury Status/Year



Meeting the following criteria

Jurisdiction: Counties (Marion)
Year: 2019, 2020, 2021, 2022, 2023
Map Selection: Yes
Filter: Non Animal-related; Intersection-related

Analyst Information

IA 92 & T17

Iowa Crash Analysis Tool
Quick Report
2019-2023

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

Injury Status Summary	0
Fatalities	0
Suspected serious/incapacitating	0
Suspected minor/non-incapacitating	0
Possible (complaint of pain/injury)	0
Uninjured	0
Unknown	0
Not Reported	0

Property/Vehicles/Occupants	
Property Damage Total (dollars):	16,000.00
Average (per crash dollars):	16,000.00
Total Vehicles:	2.00
Average (per crash):	2.00
Total Occupants:	2.00
Average (per crash):	2.00

Average Severity	
Fatalities/Fatal Crash:	0.00
Fatalities/Crash:	0.00
Injuries/Crash:	0.00
Major Injuries/Crash:	0.00
Minor Injuries/Crash:	0.00
Possible/Unknown Injuries/Crash:	0.00

Major Cause			1
Animal	0	Ran traffic signal	0
Ran stop sign	1	Failed to yield to emergency vehicle	0
FTYROW: At uncontrolled intersection	0	FTYROW: Making right turn on red signal	0
FTYROW: From stop sign	0	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	0
Exceeded authorized speed	0	Improper or erratic lane changing	0
Operating vehicle in an reckless/erratic/care...	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		

Iowa Crash Analysis Tool
Quick Report
2019-2023

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	0	0	0	0	0	0	0	0	0	0	0
Tuesday	0	0	1	0	0	0	0	0	0	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	0	0	0	0	0	0	0	0	0	0
Friday	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Saturday	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	1	0	0	0	0	0	0	0	0	0	0	1

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

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

Fixed Object Struck			**2**
Bridge overhead structure	0	Bridge pier or support	0
Bridge/bridge rail parapet	0	Curb/island/raised median	0
Ditch	0	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)	2

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	0	0	0	0	0
= 18	0	0	0	0	0
= 19	0	0	0	0	0
= 20	0	0	0	0	0
>= 21 and <= 24	0	1	0	0	1
>= 25 and <= 29	0	0	0	0	0
>= 30 and <= 34	0	0	0	0	0
>= 35 and <= 39	0	0	0	0	0
>= 40 and <= 44	0	0	0	0	0
>= 45 and <= 49	0	0	0	0	0
>= 50 and <= 54	0	0	0	0	0
>= 55 and <= 59	0	0	0	0	0
>= 60 and <= 64	0	1	0	0	1
>= 65 and <= 69	0	0	0	0	0
>= 70 and <= 74	0	0	0	0	0
>= 75 and <= 79	0	0	0	0	0
>= 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	0	0	0
Total	0	2	0	0	2

Drug/Alcohol Related	1
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	1

Alcohol Test Given	2
None	2
Blood	0
Urine	0
Breath	0
Vitreous	0
Refused	0
Not reported	0

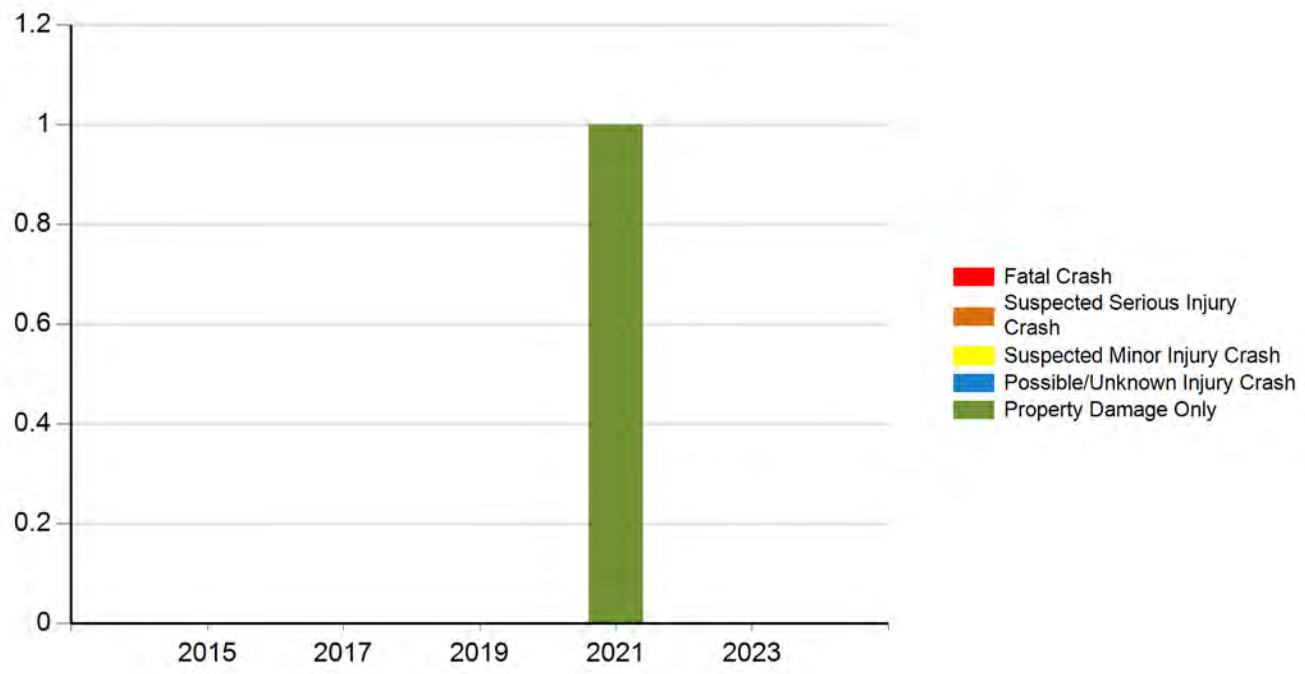
Drug Test Given	2
None	2
Blood	0
Urine	0
Breath	0
Vitreous	0
Refused	0
Not reported	0

Drug Test Result	2
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	2
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**
2014	0	0	0	0	0	0
2015	0	0	0	0	0	0
2016	0	0	0	0	0	0
2017	0	0	0	0	0	0
2018	0	0	0	0	0	0
2019	0	0	0	0	0	0
2020	0	0	0	0	0	0
2021	0	0	0	0	1	1
2022	0	0	0	0	0	0
2023	0	0	0	0	0	0
2024	0	0	0	0	0	0
Total	0	0	0	0	1	1

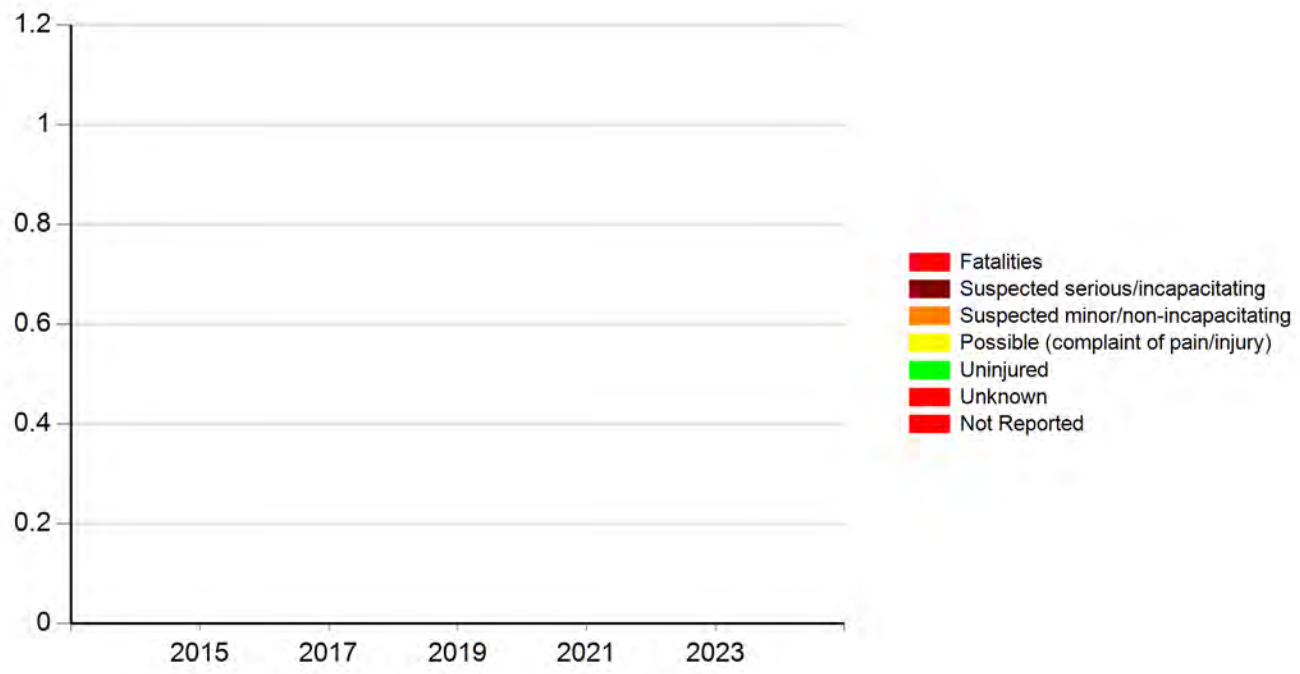
Severity/Year



Injury Status - Annual

Crash Year	Fatalities	Suspected serious/incapacitating	Suspected minor/non-incapacitating	Possible (complaint of pain/injury)	Uninjured	Unknown	Not Reported	**Total**
2014	0	0	0	0	0	0	0	0
2015	0	0	0	0	0	0	0	0
2016	0	0	0	0	0	0	0	0
2017	0	0	0	0	0	0	0	0
2018	0	0	0	0	0	0	0	0
2019	0	0	0	0	0	0	0	0
2020	0	0	0	0	0	0	0	0
2021	0	0	0	0	0	0	0	0
2022	0	0	0	0	0	0	0	0
2023	0	0	0	0	0	0	0	0
2024	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0

Injury Status/Year



Meeting the following criteria

Jurisdiction: Counties (Marion)
Year: 2019, 2020, 2021, 2022, 2023
Map Selection: Yes
Filter: Non Animal-related; Intersection-related

Analyst Information

G46 and T17

Iowa Crash Analysis Tool
Quick Report
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Crash Severity	0
Fatal Crash	0
Suspected Serious Injury Crash	0
Suspected Minor Injury Crash	0
Possible/Unknown Injury Crash	0
Property Damage Only	0

Injury Status Summary	0
Fatalities	0
Suspected serious/incapacitating	0
Suspected minor/non-incapacitating	0
Possible (complaint of pain/injury)	0
Uninjured	0
Unknown	0
Not Reported	0

Property/Vehicles/Occupants	
Property Damage Total (dollars):	
Average (per crash dollars):	
Total Vehicles:	
Average (per crash):	
Total Occupants:	
Average (per crash):	

Average Severity	
Fatalities/Fatal Crash:	0.00
Fatalities/Crash:	0.00
Injuries/Crash:	0.00
Major Injuries/Crash:	0.00
Minor Injuries/Crash:	0.00
Possible/Unknown Injuries/Crash:	0.00

Major Cause			0
Animal	0	Ran traffic signal	0
Ran stop sign	0	Failed to yield to emergency vehicle	0
FTYROW: At uncontrolled intersection	0	FTYROW: Making right turn on red signal	0
FTYROW: From stop sign	0	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	0
Exceeded authorized speed	0	Improper or erratic lane changing	0
Operating vehicle in an reckless/erratic/care...	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		

Iowa Crash Analysis Tool
Quick Report
2019-2023

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	0	0	0	0	0	0	0	0	0	0	0
Tuesday	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Wednesday	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Thursday	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Friday	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Saturday	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0

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

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

Fixed Object Struck			**0**
Bridge overhead structure	0	Bridge pier or support	0
Bridge/bridge rail parapet	0	Curb/island/raised median	0
Ditch	0	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)	0

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	0	0	0	0	0
= 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	0	0	0	0	0
>= 30 and <= 34	0	0	0	0	0
>= 35 and <= 39	0	0	0	0	0
>= 40 and <= 44	0	0	0	0	0
>= 45 and <= 49	0	0	0	0	0
>= 50 and <= 54	0	0	0	0	0
>= 55 and <= 59	0	0	0	0	0
>= 60 and <= 64	0	0	0	0	0
>= 65 and <= 69	0	0	0	0	0
>= 70 and <= 74	0	0	0	0	0
>= 75 and <= 79	0	0	0	0	0
>= 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	0	0	0
Total	0	0	0	0	0

Drug/Alcohol Related	0
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	0

Alcohol Test Given	0
None	0
Blood	0
Urine	0
Breath	0
Vitreous	0
Refused	0
Not reported	0

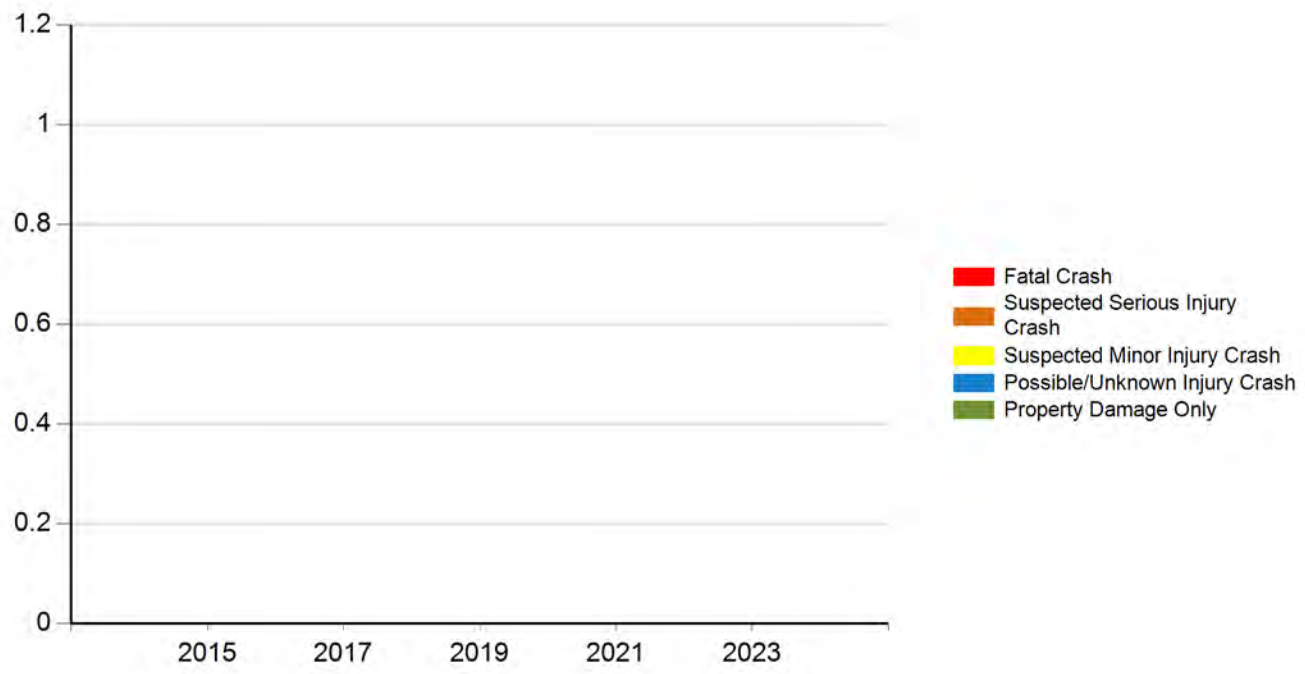
Drug Test Given	0
None	0
Blood	0
Urine	0
Breath	0
Vitreous	0
Refused	0
Not reported	0

Drug Test Result	0
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	0
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**
2014	0	0	0	0	0	0
2015	0	0	0	0	0	0
2016	0	0	0	0	0	0
2017	0	0	0	0	0	0
2018	0	0	0	0	0	0
2019	0	0	0	0	0	0
2020	0	0	0	0	0	0
2021	0	0	0	0	0	0
2022	0	0	0	0	0	0
2023	0	0	0	0	0	0
2024	0	0	0	0	0	0
Total	0	0	0	0	0	0

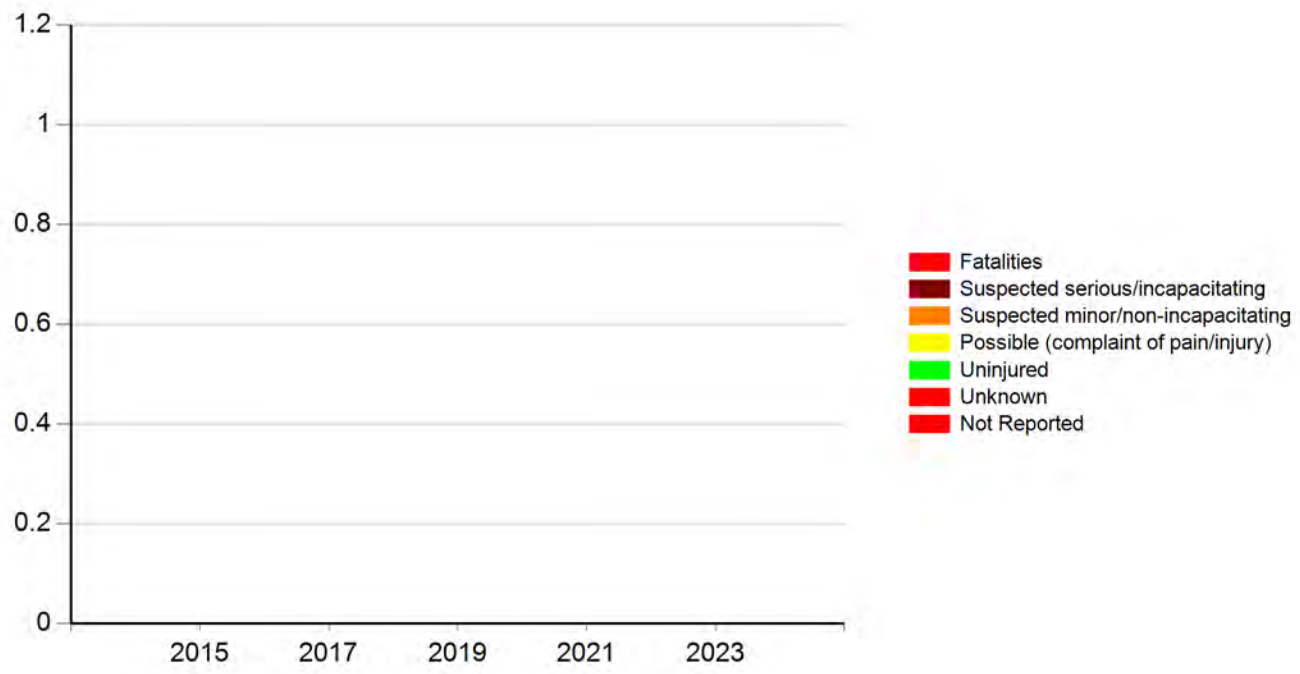
Severity/Year



Injury Status - Annual

Crash Year	Fatalities	Suspected serious/incapacitating	Suspected minor/non-incapacitating	Possible (complaint of pain/injury)	Uninjured	Unknown	Not Reported	**Total**
2014	0	0	0	0	0	0	0	0
2015	0	0	0	0	0	0	0	0
2016	0	0	0	0	0	0	0	0
2017	0	0	0	0	0	0	0	0
2018	0	0	0	0	0	0	0	0
2019	0	0	0	0	0	0	0	0
2020	0	0	0	0	0	0	0	0
2021	0	0	0	0	0	0	0	0
2022	0	0	0	0	0	0	0	0
2023	0	0	0	0	0	0	0	0
2024	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0

Injury Status/Year



Meeting the following criteria

Jurisdiction: Counties (Marion)
Year: 2019, 2020, 2021, 2022, 2023
Map Selection: Yes
Filter: Non Animal-related; Intersection-related

Analyst Information

T17 At T17(Elevator Rd)

Iowa Crash Analysis Tool
Quick Report
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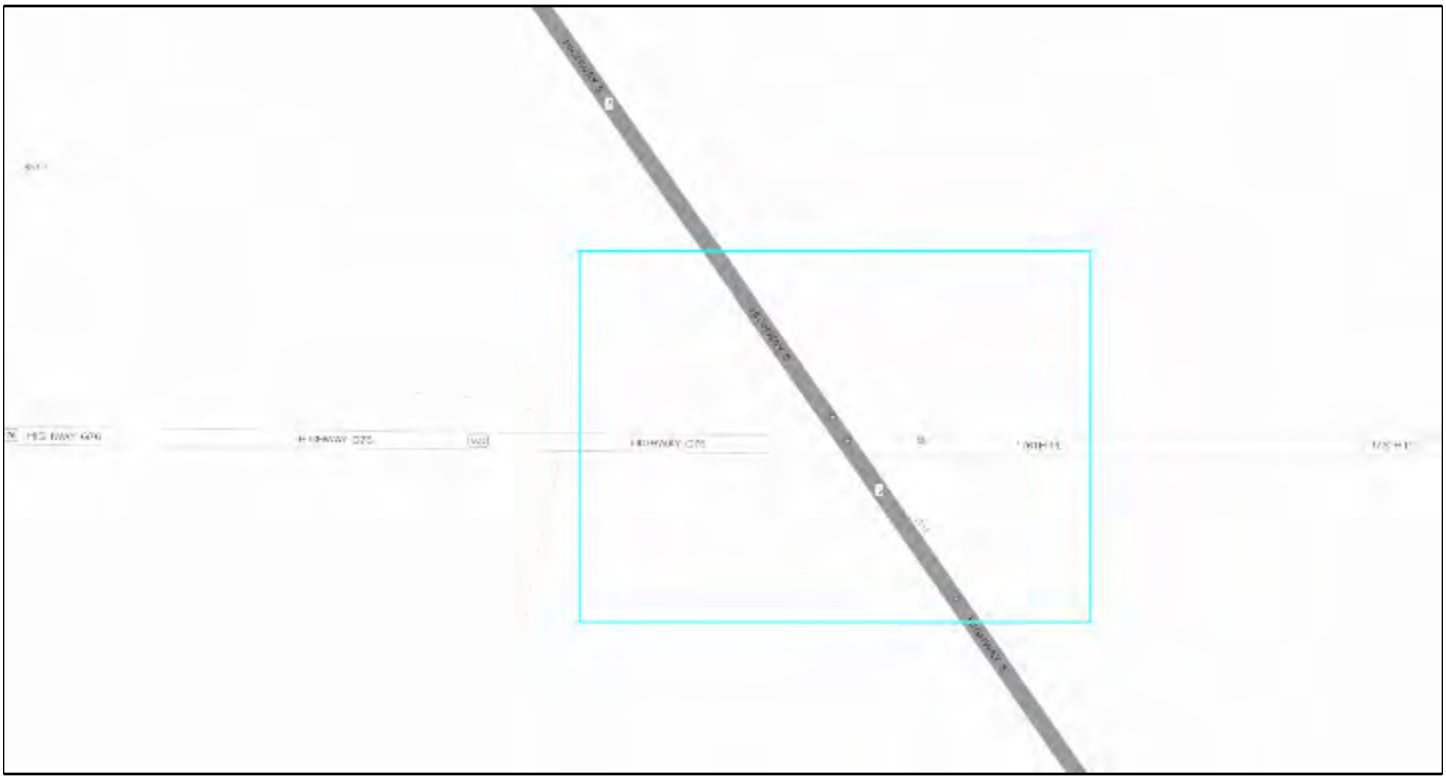
Crash Severity	0
Fatal Crash	0
Suspected Serious Injury Crash	0
Suspected Minor Injury Crash	0
Possible/Unknown Injury Crash	0
Property Damage Only	0

Injury Status Summary	0
Fatalities	0
Suspected serious/incapacitating	0
Suspected minor/non-incapacitating	0
Possible (complaint of pain/injury)	0
Uninjured	0
Unknown	0
Not Reported	0

Property/Vehicles/Occupants	
Property Damage Total (dollars):	
Average (per crash dollars):	
Total Vehicles:	
Average (per crash):	
Total Occupants:	
Average (per crash):	

Average Severity	
Fatalities/Fatal Crash:	0.00
Fatalities/Crash:	0.00
Injuries/Crash:	0.00
Major Injuries/Crash:	0.00
Minor Injuries/Crash:	0.00
Possible/Unknown Injuries/Crash:	0.00



Major Cause			0
Animal	0	Ran traffic signal	0
Ran stop sign	0	Failed to yield to emergency vehicle	0
FTYROW: At uncontrolled intersection	0	FTYROW: Making right turn on red signal	0
FTYROW: From stop sign	0	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	0
Exceeded authorized speed	0	Improper or erratic lane changing	0
Operating vehicle in an reckless/erratic/care...	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		

Iowa Crash Analysis Tool
Quick Report
2019-2023

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	0	0	0	0	0	0	0	0	0	0	0
Tuesday	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Wednesday	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Thursday	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Friday	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Saturday	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0

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

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

Fixed Object Struck			**0**
Bridge overhead structure	0	Bridge pier or support	0
Bridge/bridge rail parapet	0	Curb/island/raised median	0
Ditch	0	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)	0

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	0	0	0	0	0
= 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	0	0	0	0	0
>= 30 and <= 34	0	0	0	0	0
>= 35 and <= 39	0	0	0	0	0
>= 40 and <= 44	0	0	0	0	0
>= 45 and <= 49	0	0	0	0	0
>= 50 and <= 54	0	0	0	0	0
>= 55 and <= 59	0	0	0	0	0
>= 60 and <= 64	0	0	0	0	0
>= 65 and <= 69	0	0	0	0	0
>= 70 and <= 74	0	0	0	0	0
>= 75 and <= 79	0	0	0	0	0
>= 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	0	0	0
Total	0	0	0	0	0

Drug/Alcohol Related	0
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	0

Alcohol Test Given	0
None	0
Blood	0
Urine	0
Breath	0
Vitreous	0
Refused	0
Not reported	0

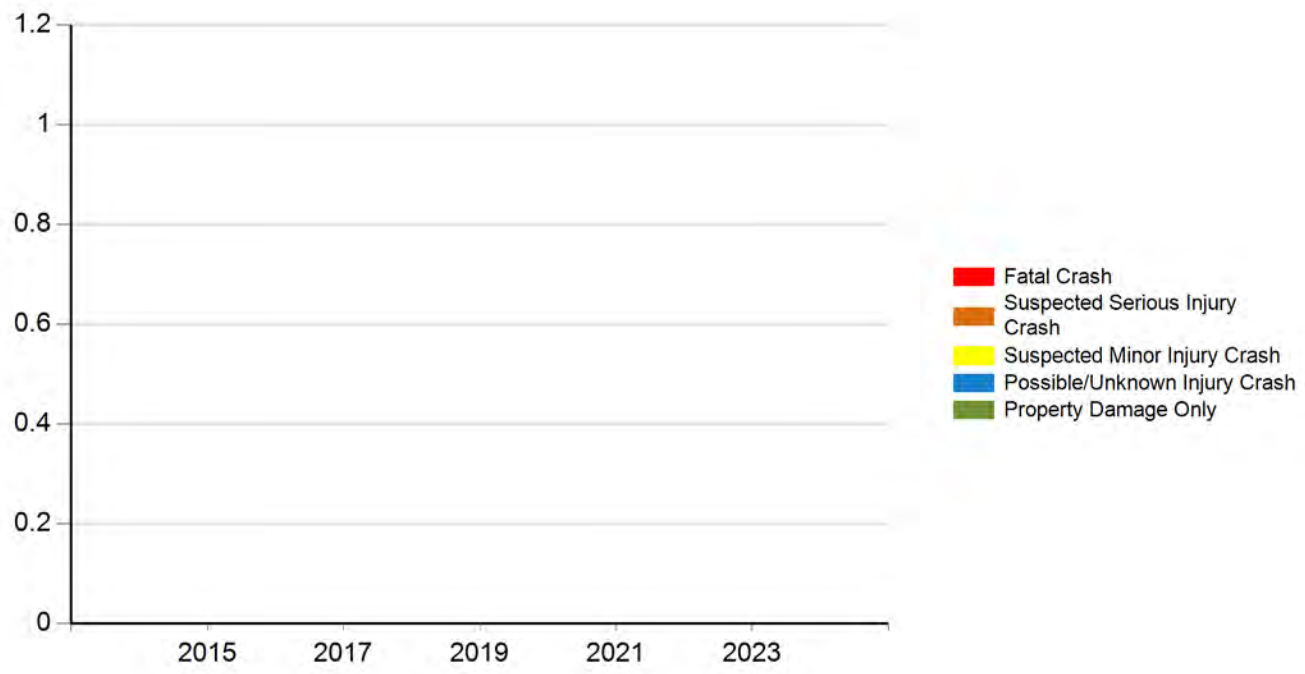
Drug Test Given	0
None	0
Blood	0
Urine	0
Breath	0
Vitreous	0
Refused	0
Not reported	0

Drug Test Result	0
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	0
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**
2014	0	0	0	0	0	0
2015	0	0	0	0	0	0
2016	0	0	0	0	0	0
2017	0	0	0	0	0	0
2018	0	0	0	0	0	0
2019	0	0	0	0	0	0
2020	0	0	0	0	0	0
2021	0	0	0	0	0	0
2022	0	0	0	0	0	0
2023	0	0	0	0	0	0
2024	0	0	0	0	0	0
Total	0	0	0	0	0	0

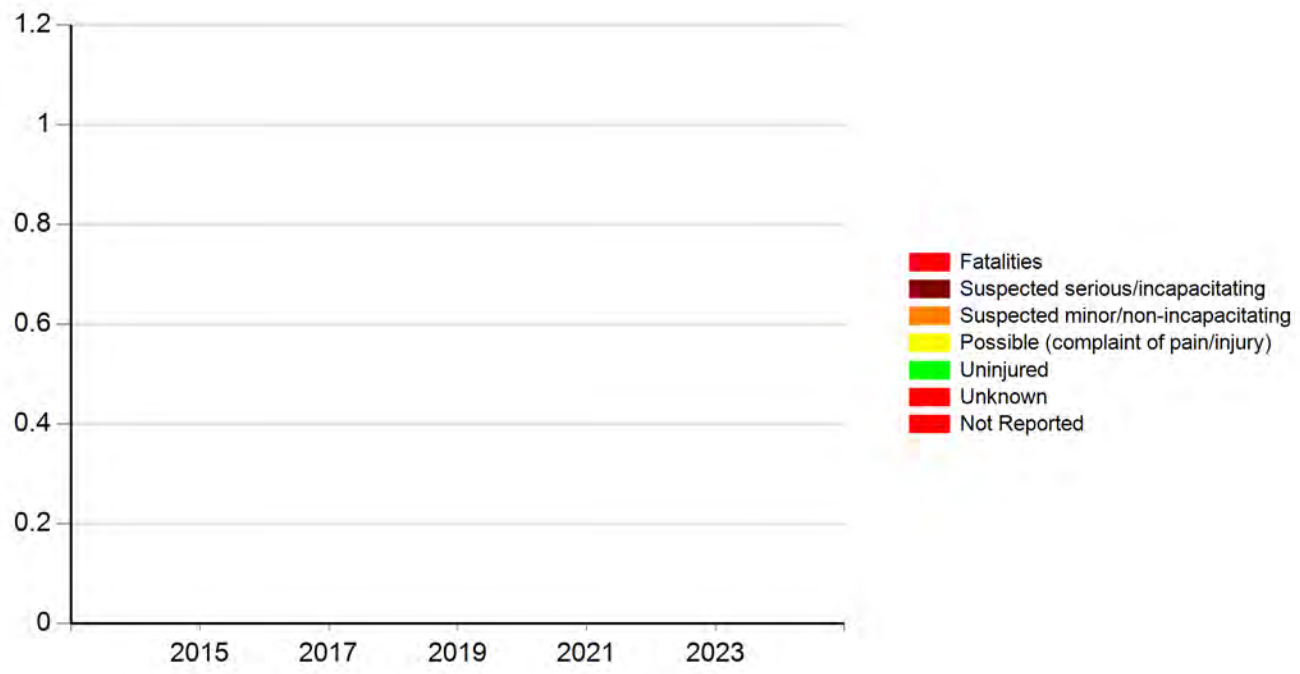
Severity/Year



Injury Status - Annual

Crash Year	Fatalities	Suspected serious/incapacitating	Suspected minor/non-incapacitating	Possible (complaint of pain/injury)	Uninjured	Unknown	Not Reported	**Total**
2014	0	0	0	0	0	0	0	0
2015	0	0	0	0	0	0	0	0
2016	0	0	0	0	0	0	0	0
2017	0	0	0	0	0	0	0	0
2018	0	0	0	0	0	0	0	0
2019	0	0	0	0	0	0	0	0
2020	0	0	0	0	0	0	0	0
2021	0	0	0	0	0	0	0	0
2022	0	0	0	0	0	0	0	0
2023	0	0	0	0	0	0	0	0
2024	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0

Injury Status/Year



Meeting the following criteria

Jurisdiction: Counties (Marion)
Year: 2019, 2020, 2021, 2022, 2023
Map Selection: Yes
Filter: Non Animal-related; Intersection-related

Analyst Information

G76 at Hwy 5

Iowa Crash Analysis Tool
Quick Report
2019-2023

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

Injury Status Summary	1
Fatalities	0
Suspected serious/incapacitating	0
Suspected minor/non-incapacitating	1
Possible (complaint of pain/injury)	0
Uninjured	0
Unknown	0
Not Reported	0

Property/Vehicles/Occupants	
Property Damage Total (dollars):	25,000.00
Average (per crash dollars):	12,500.00
Total Vehicles:	4.00
Average (per crash):	2.00
Total Occupants:	6.00
Average (per crash):	3.00

Average Severity	
Fatalities/Fatal Crash:	0.00
Fatalities/Crash:	0.00
Injuries/Crash:	0.50
Major Injuries/Crash:	0.00
Minor Injuries/Crash:	0.50
Possible/Unknown Injuries/Crash:	0.00

Major Cause			2
Animal	0	Ran traffic signal	0
Ran stop sign	0	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	0
Exceeded authorized speed	0	Improper or erratic lane changing	0
Operating vehicle in an reckless/erratic/care...	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		

Iowa Crash Analysis Tool
Quick Report
2019-2023

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	0	0	0	1	0	0	0	0	0	0	1
Tuesday	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Wednesday	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Thursday	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Friday	0	0	0	0	0	0	0	1	0	0	0	0	0	1
Saturday	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	1	1	0	0	0	0	0	2

Manner of Crash Collision	**2**
Non-collision (single vehicle)	0
Head-on (front to front)	0
Rear-end (front to rear)	1
Angle (oncoming left turn)	0
Broadside (front to side)	0
Sideswipe (same direction)	0
Sideswipe (opposite direction)	0
Rear to rear	0
Rear to side	0
Not reported	0
Other	1
Unknown	0

Surface Conditions	**2**
Dry	1
Wet	1
Ice/frost	0
Snow	0
Slush	0
Mud/dirt	0
Water (standing or moving)	0
Sand	0
Oil	0
Gravel	0
Not reported	0
Other	0
Unknown	0

Fixed Object Struck			**4**
Bridge overhead structure	0	Bridge pier or support	0
Bridge/bridge rail parapet	0	Curb/island/raised median	0
Ditch	0	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)	4

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	1	0	0	0	1
= 17	0	1	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	0	0	0	0	0
>= 30 and <= 34	0	0	0	0	0
>= 35 and <= 39	0	1	0	0	1
>= 40 and <= 44	0	0	0	0	0
>= 45 and <= 49	1	0	0	0	1
>= 50 and <= 54	0	0	0	0	0
>= 55 and <= 59	0	0	0	0	0
>= 60 and <= 64	0	0	0	0	0
>= 65 and <= 69	0	0	0	0	0
>= 70 and <= 74	0	0	0	0	0
>= 75 and <= 79	0	0	0	0	0
>= 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	0	0	0
Total	2	2	0	0	4

Drug/Alcohol Related	2
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	2

Alcohol Test Given	4
None	4
Blood	0
Urine	0
Breath	0
Vitreous	0
Refused	0
Not reported	0

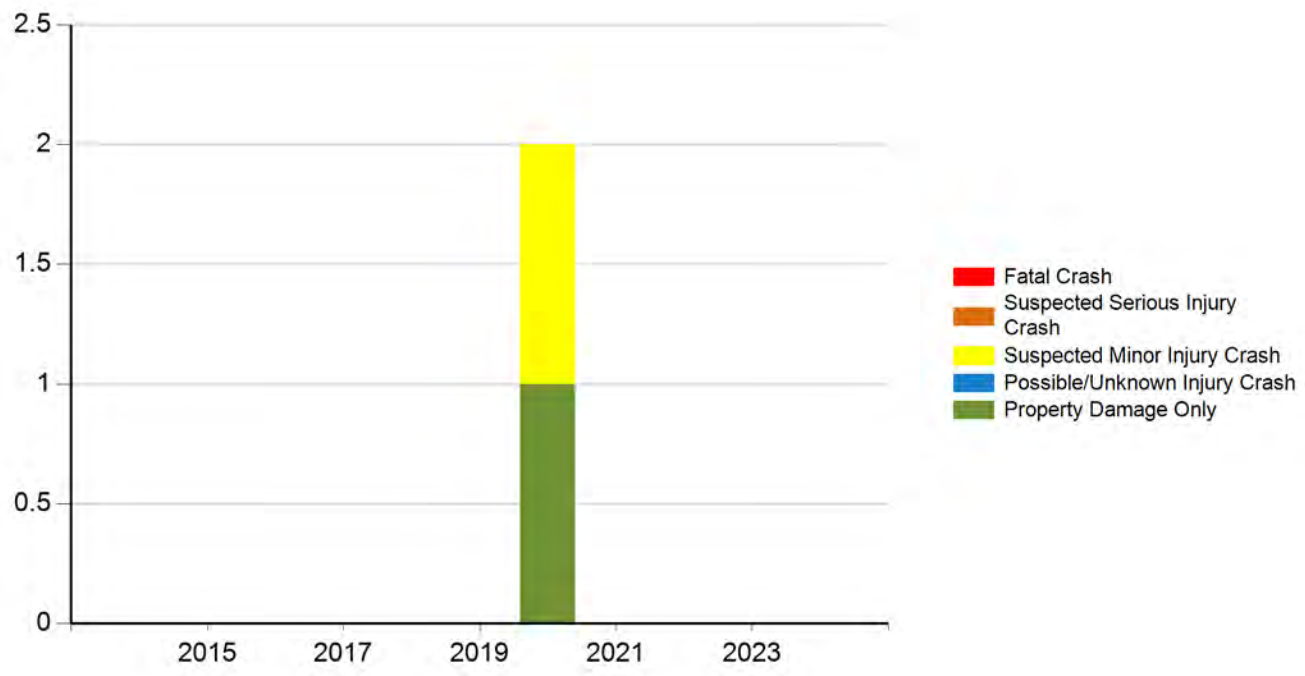
Drug Test Given	4
None	4
Blood	0
Urine	0
Breath	0
Vitreous	0
Refused	0
Not reported	0

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**
2014	0	0	0	0	0	0
2015	0	0	0	0	0	0
2016	0	0	0	0	0	0
2017	0	0	0	0	0	0
2018	0	0	0	0	0	0
2019	0	0	0	0	0	0
2020	0	0	1	0	1	2
2021	0	0	0	0	0	0
2022	0	0	0	0	0	0
2023	0	0	0	0	0	0
2024	0	0	0	0	0	0
Total	0	0	1	0	1	2

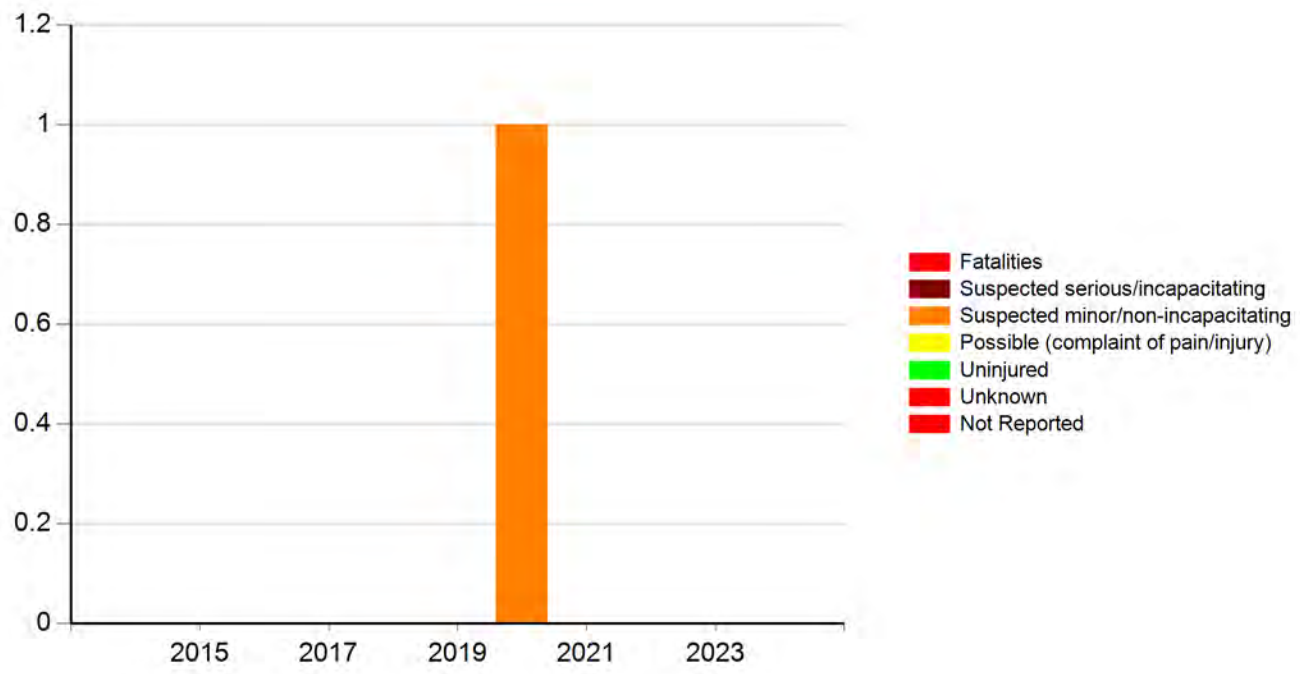
Severity/Year



Injury Status - Annual

Crash Year	Fatalities	Suspected serious/incapacitating	Suspected minor/non-incapacitating	Possible (complaint of pain/injury)	Uninjured	Unknown	Not Reported	**Total**
2014	0	0	0	0	0	0	0	0
2015	0	0	0	0	0	0	0	0
2016	0	0	0	0	0	0	0	0
2017	0	0	0	0	0	0	0	0
2018	0	0	0	0	0	0	0	0
2019	0	0	0	0	0	0	0	0
2020	0	0	1	0	0	0	0	1
2021	0	0	0	0	0	0	0	0
2022	0	0	0	0	0	0	0	0
2023	0	0	0	0	0	0	0	0
2024	0	0	0	0	0	0	0	0
Total	0	0	1	0	0	0	0	1

Injury Status/Year



Meeting the following criteria

Jurisdiction: Counties (Marion)
Year: 2019, 2020, 2021, 2022, 2023
Map Selection: Yes
Filter: Non Animal-related; Intersection-related

Analyst Information

Orange St. & IA 5

Iowa Crash Analysis Tool
Quick Report
2019-2023

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

Injury Status Summary	0
Fatalities	0
Suspected serious/incapacitating	0
Suspected minor/non-incapacitating	0
Possible (complaint of pain/injury)	0
Uninjured	0
Unknown	0
Not Reported	0

Property/Vehicles/Occupants	
Property Damage Total (dollars):	
Average (per crash dollars):	
Total Vehicles:	
Average (per crash):	
Total Occupants:	
Average (per crash):	

Average Severity	
Fatalities/Fatal Crash:	0.00
Fatalities/Crash:	0.00
Injuries/Crash:	0.00
Major Injuries/Crash:	0.00
Minor Injuries/Crash:	0.00
Possible/Unknown Injuries/Crash:	0.00

Major Cause			0
Animal	0	Ran traffic signal	0
Ran stop sign	0	Failed to yield to emergency vehicle	0
FTYROW: At uncontrolled intersection	0	FTYROW: Making right turn on red signal	0
FTYROW: From stop sign	0	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	0
Exceeded authorized speed	0	Improper or erratic lane changing	0
Operating vehicle in an reckless/erratic/care...	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		

Iowa Crash Analysis Tool
Quick Report
2019-2023

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	0	0	0	0	0	0	0	0	0	0	0
Tuesday	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Wednesday	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Thursday	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Friday	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Saturday	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0

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

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

Fixed Object Struck			**0**
Bridge overhead structure	0	Bridge pier or support	0
Bridge/bridge rail parapet	0	Curb/island/raised median	0
Ditch	0	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)	0

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	0	0	0	0	0
= 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	0	0	0	0	0
>= 30 and <= 34	0	0	0	0	0
>= 35 and <= 39	0	0	0	0	0
>= 40 and <= 44	0	0	0	0	0
>= 45 and <= 49	0	0	0	0	0
>= 50 and <= 54	0	0	0	0	0
>= 55 and <= 59	0	0	0	0	0
>= 60 and <= 64	0	0	0	0	0
>= 65 and <= 69	0	0	0	0	0
>= 70 and <= 74	0	0	0	0	0
>= 75 and <= 79	0	0	0	0	0
>= 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	0	0	0
Total	0	0	0	0	0

Drug/Alcohol Related	0
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	0

Alcohol Test Given	0
None	0
Blood	0
Urine	0
Breath	0
Vitreous	0
Refused	0
Not reported	0

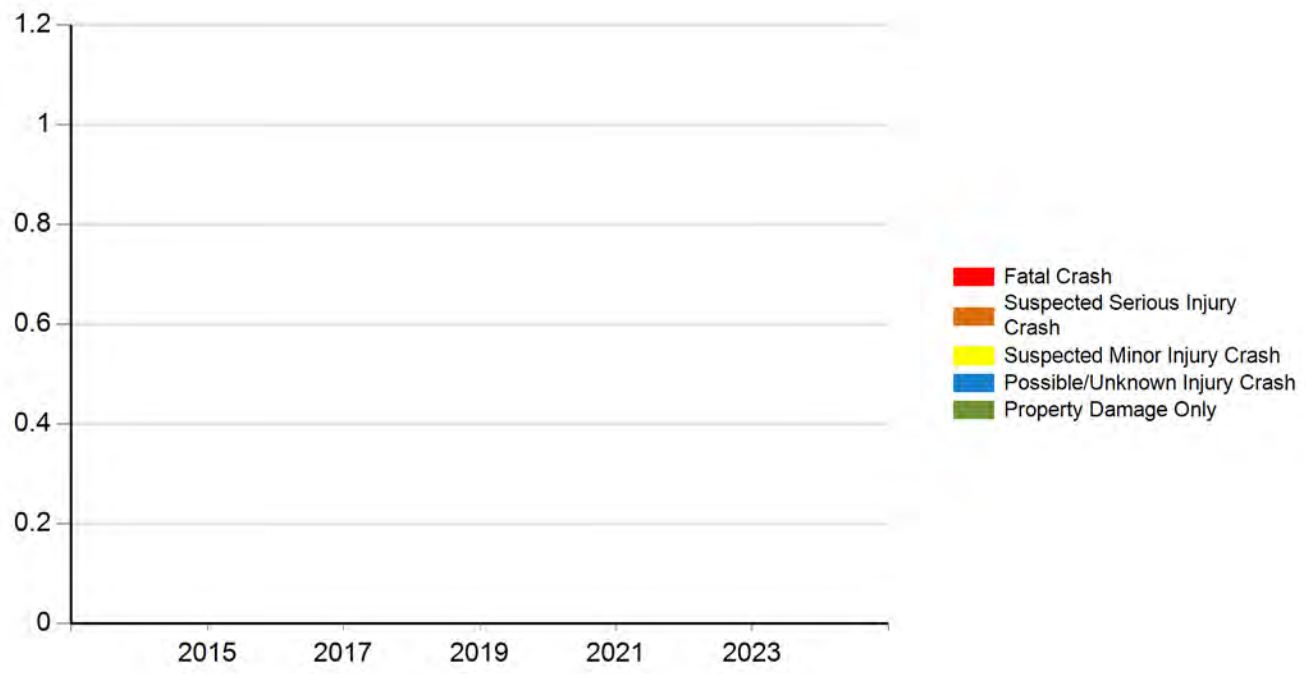
Drug Test Given	0
None	0
Blood	0
Urine	0
Breath	0
Vitreous	0
Refused	0
Not reported	0

Drug Test Result	0
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	0
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**
2014	0	0	0	0	0	0
2015	0	0	0	0	0	0
2016	0	0	0	0	0	0
2017	0	0	0	0	0	0
2018	0	0	0	0	0	0
2019	0	0	0	0	0	0
2020	0	0	0	0	0	0
2021	0	0	0	0	0	0
2022	0	0	0	0	0	0
2023	0	0	0	0	0	0
2024	0	0	0	0	0	0
Total	0	0	0	0	0	0

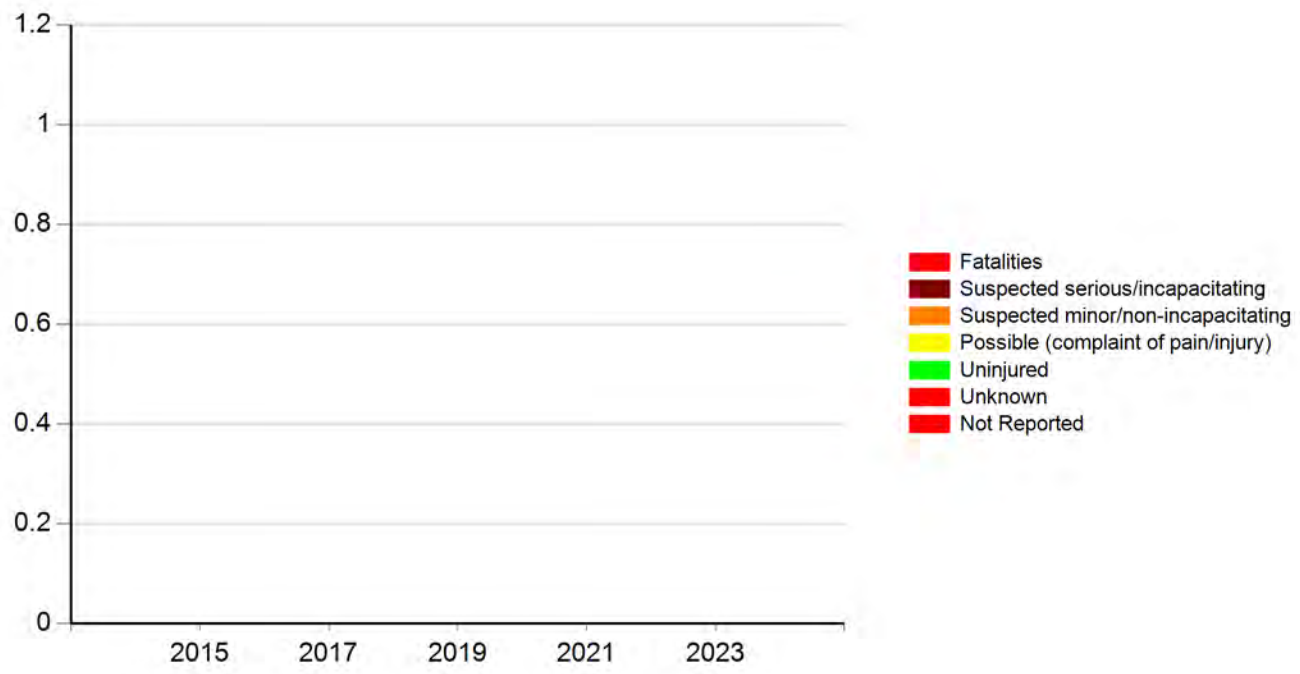
Severity/Year



Injury Status - Annual

Crash Year	Fatalities	Suspected serious/incapacitating	Suspected minor/non-incapacitating	Possible (complaint of pain/injury)	Uninjured	Unknown	Not Reported	**Total**
2014	0	0	0	0	0	0	0	0
2015	0	0	0	0	0	0	0	0
2016	0	0	0	0	0	0	0	0
2017	0	0	0	0	0	0	0	0
2018	0	0	0	0	0	0	0	0
2019	0	0	0	0	0	0	0	0
2020	0	0	0	0	0	0	0	0
2021	0	0	0	0	0	0	0	0
2022	0	0	0	0	0	0	0	0
2023	0	0	0	0	0	0	0	0
2024	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0

Injury Status/Year



Meeting the following criteria

Jurisdiction: Counties (Marion)
Year: 2019, 2020, 2021, 2022, 2023
Map Selection: Yes
Filter: Non Animal-related; Intersection-related

Analyst Information

IA 14 & 103rd Ave.

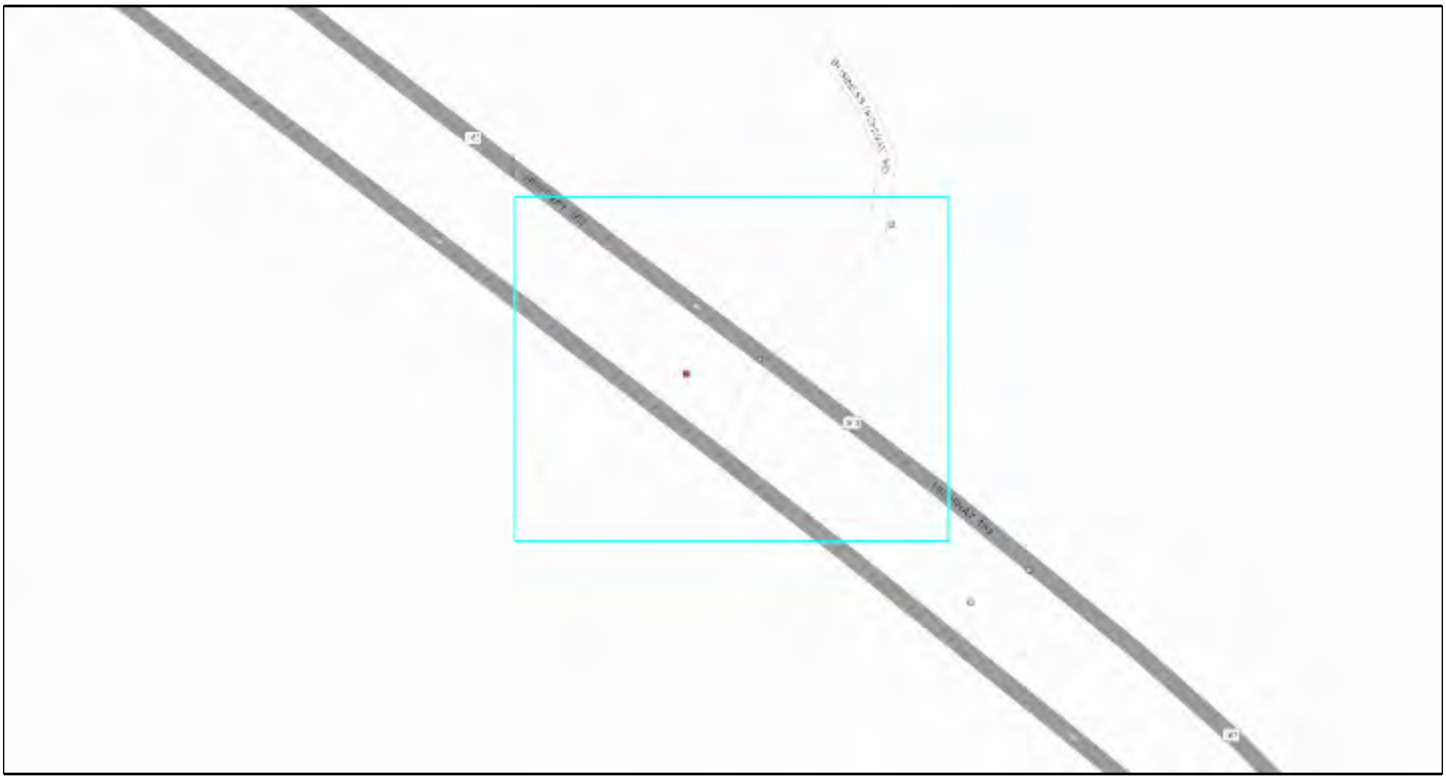
Iowa Crash Analysis Tool
Quick Report
2019-2023

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

Injury Status Summary	0
Fatalities	0
Suspected serious/incapacitating	0
Suspected minor/non-incapacitating	0
Possible (complaint of pain/injury)	0
Uninjured	0
Unknown	0
Not Reported	0

Property/Vehicles/Occupants	
Property Damage Total (dollars):	7,000.00
Average (per crash dollars):	7,000.00
Total Vehicles:	2.00
Average (per crash):	2.00
Total Occupants:	3.00
Average (per crash):	3.00

Average Severity	
Fatalities/Fatal Crash:	0.00
Fatalities/Crash:	0.00
Injuries/Crash:	0.00
Major Injuries/Crash:	0.00
Minor Injuries/Crash:	0.00
Possible/Unknown Injuries/Crash:	0.00



Major Cause			1
Animal	0	Ran traffic signal	0
Ran stop sign	0	Failed to yield to emergency vehicle	0
FTYROW: At uncontrolled intersection	0	FTYROW: Making right turn on red signal	0
FTYROW: From stop sign	0	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	0
Exceeded authorized speed	1	Improper or erratic lane changing	0
Operating vehicle in an reckless/erratic/care...	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		

Iowa Crash Analysis Tool
Quick Report
2019-2023

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	0	0	0	0	0	0	0	0	0	0	0
Tuesday	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Wednesday	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Thursday	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Friday	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Saturday	0	0	0	0	0	0	0	0	0	0	0	1	0	1
Total	0	0	0	0	0	0	0	0	0	0	0	1	0	1

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

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

Fixed Object Struck			**2**
Bridge overhead structure	0	Bridge pier or support	0
Bridge/bridge rail parapet	0	Curb/island/raised median	0
Ditch	0	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)	2

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	0	0	0	0	0
= 18	0	0	0	0	0
= 19	0	1	0	0	1
= 20	0	0	0	0	0
>= 21 and <= 24	0	1	0	0	1
>= 25 and <= 29	0	0	0	0	0
>= 30 and <= 34	0	0	0	0	0
>= 35 and <= 39	0	0	0	0	0
>= 40 and <= 44	0	0	0	0	0
>= 45 and <= 49	0	0	0	0	0
>= 50 and <= 54	0	0	0	0	0
>= 55 and <= 59	0	0	0	0	0
>= 60 and <= 64	0	0	0	0	0
>= 65 and <= 69	0	0	0	0	0
>= 70 and <= 74	0	0	0	0	0
>= 75 and <= 79	0	0	0	0	0
>= 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	0	0	0
Total	0	2	0	0	2

Drug/Alcohol Related	1
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	1

Alcohol Test Given	2
None	2
Blood	0
Urine	0
Breath	0
Vitreous	0
Refused	0
Not reported	0

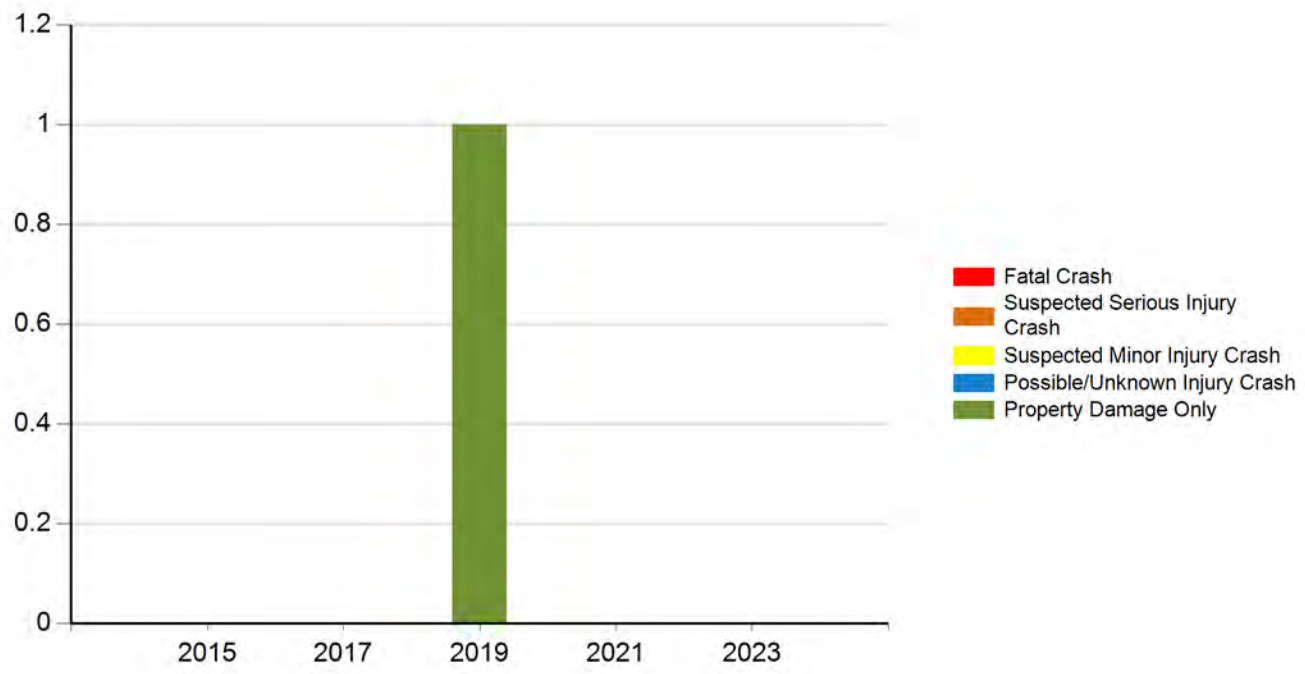
Drug Test Given	2
None	2
Blood	0
Urine	0
Breath	0
Vitreous	0
Refused	0
Not reported	0

Drug Test Result	2
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	2
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**
2014	0	0	0	0	0	0
2015	0	0	0	0	0	0
2016	0	0	0	0	0	0
2017	0	0	0	0	0	0
2018	0	0	0	0	0	0
2019	0	0	0	0	1	1
2020	0	0	0	0	0	0
2021	0	0	0	0	0	0
2022	0	0	0	0	0	0
2023	0	0	0	0	0	0
2024	0	0	0	0	0	0
Total	0	0	0	0	1	1

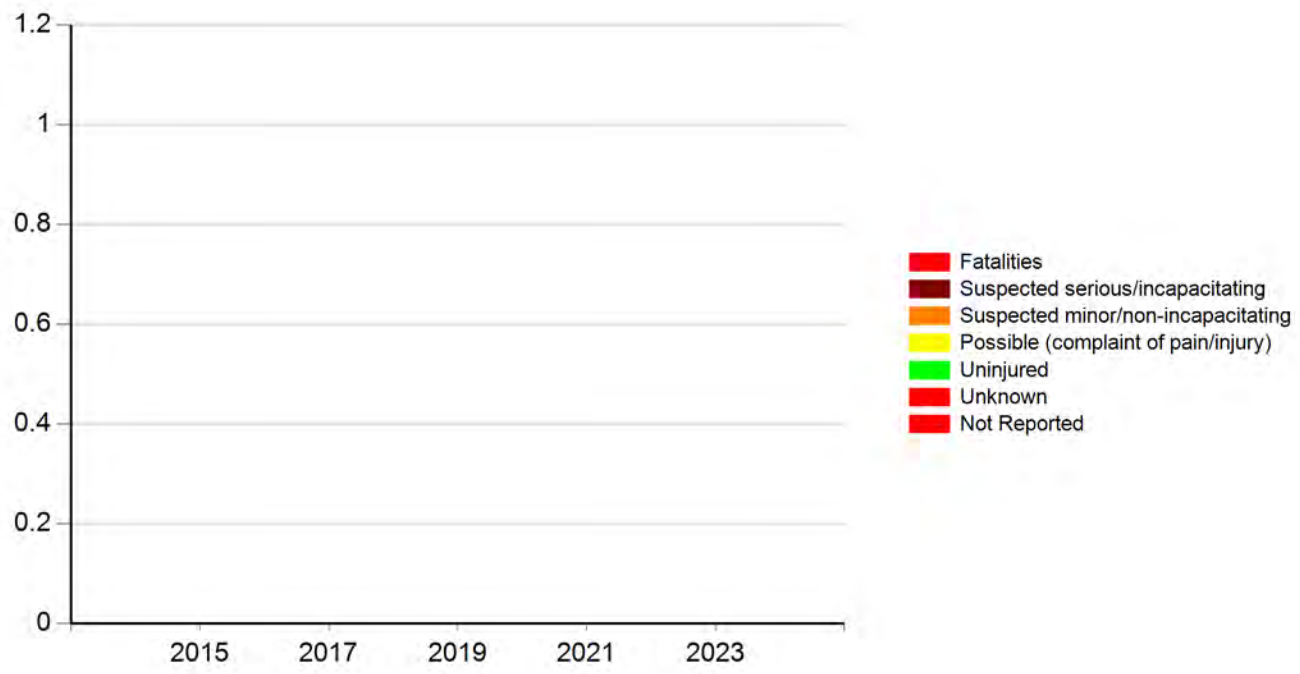
Severity/Year



Injury Status - Annual

Crash Year	Fatalities	Suspected serious/incapacitating	Suspected minor/non-incapacitating	Possible (complaint of pain/injury)	Uninjured	Unknown	Not Reported	**Total**
2014	0	0	0	0	0	0	0	0
2015	0	0	0	0	0	0	0	0
2016	0	0	0	0	0	0	0	0
2017	0	0	0	0	0	0	0	0
2018	0	0	0	0	0	0	0	0
2019	0	0	0	0	0	0	0	0
2020	0	0	0	0	0	0	0	0
2021	0	0	0	0	0	0	0	0
2022	0	0	0	0	0	0	0	0
2023	0	0	0	0	0	0	0	0
2024	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0

Injury Status/Year



Meeting the following criteria

Jurisdiction: Counties (Marion)
Year: 2019, 2020, 2021, 2022, 2023
Map Selection: Yes
Filter: Non Animal-related

Analyst Information

Old 163 at IA 163

Iowa Crash Analysis Tool
Quick Report
2019-2023

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

Injury Status Summary	0
Fatalities	0
Suspected serious/incapacitating	0
Suspected minor/non-incapacitating	0
Possible (complaint of pain/injury)	0
Uninjured	0
Unknown	0
Not Reported	0

Property/Vehicles/Occupants	
Property Damage Total (dollars):	
Average (per crash dollars):	
Total Vehicles:	
Average (per crash):	
Total Occupants:	
Average (per crash):	

Average Severity	
Fatalities/Fatal Crash:	0.00
Fatalities/Crash:	0.00
Injuries/Crash:	0.00
Major Injuries/Crash:	0.00
Minor Injuries/Crash:	0.00
Possible/Unknown Injuries/Crash:	0.00

Major Cause			0
Animal	0	Ran traffic signal	0
Ran stop sign	0	Failed to yield to emergency vehicle	0
FTYROW: At uncontrolled intersection	0	FTYROW: Making right turn on red signal	0
FTYROW: From stop sign	0	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	0
Exceeded authorized speed	0	Improper or erratic lane changing	0
Operating vehicle in an reckless/erratic/care...	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		

Iowa Crash Analysis Tool
Quick Report
2019-2023

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	0	0	0	0	0	0	0	0	0	0	0
Tuesday	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Wednesday	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Thursday	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Friday	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Saturday	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0

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

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

Fixed Object Struck			**0**
Bridge overhead structure	0	Bridge pier or support	0
Bridge/bridge rail parapet	0	Curb/island/raised median	0
Ditch	0	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)	0

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	0	0	0	0	0
= 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	0	0	0	0	0
>= 30 and <= 34	0	0	0	0	0
>= 35 and <= 39	0	0	0	0	0
>= 40 and <= 44	0	0	0	0	0
>= 45 and <= 49	0	0	0	0	0
>= 50 and <= 54	0	0	0	0	0
>= 55 and <= 59	0	0	0	0	0
>= 60 and <= 64	0	0	0	0	0
>= 65 and <= 69	0	0	0	0	0
>= 70 and <= 74	0	0	0	0	0
>= 75 and <= 79	0	0	0	0	0
>= 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	0	0	0
Total	0	0	0	0	0

Drug/Alcohol Related	0
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	0

Alcohol Test Given	0
None	0
Blood	0
Urine	0
Breath	0
Vitreous	0
Refused	0
Not reported	0

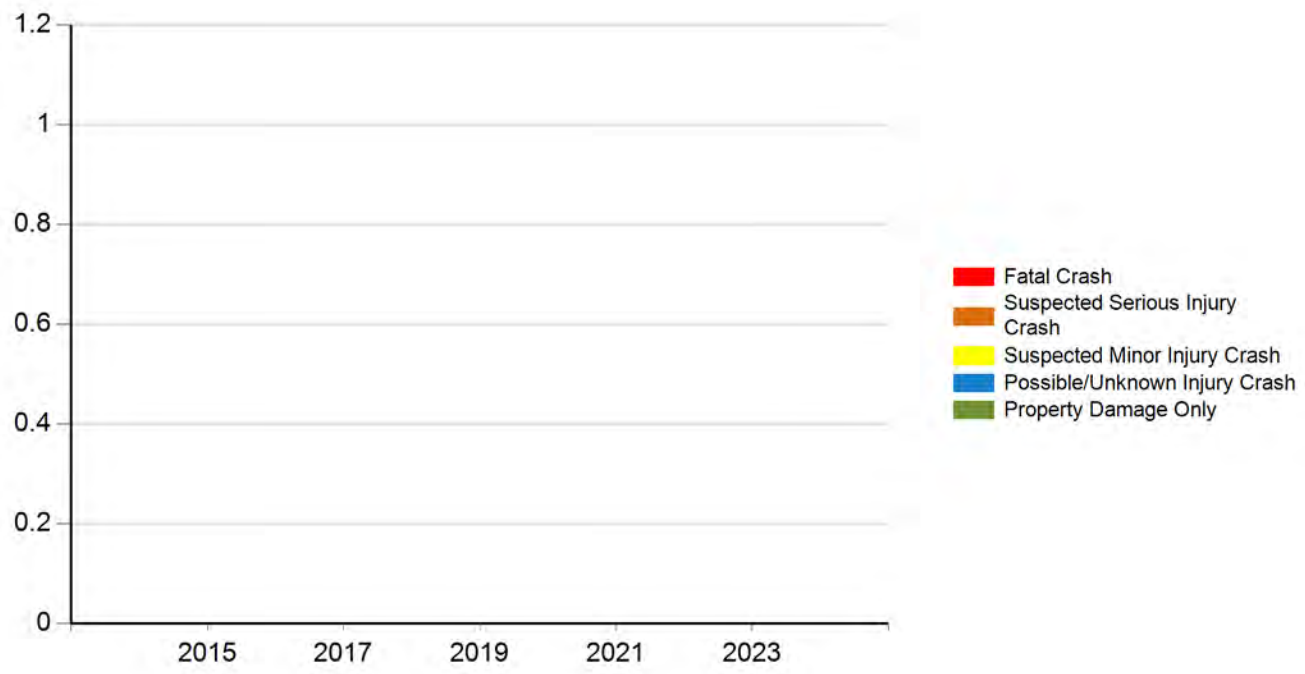
Drug Test Given	0
None	0
Blood	0
Urine	0
Breath	0
Vitreous	0
Refused	0
Not reported	0

Drug Test Result	0
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	0
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**
2014	0	0	0	0	0	0
2015	0	0	0	0	0	0
2016	0	0	0	0	0	0
2017	0	0	0	0	0	0
2018	0	0	0	0	0	0
2019	0	0	0	0	0	0
2020	0	0	0	0	0	0
2021	0	0	0	0	0	0
2022	0	0	0	0	0	0
2023	0	0	0	0	0	0
2024	0	0	0	0	0	0
Total	0	0	0	0	0	0

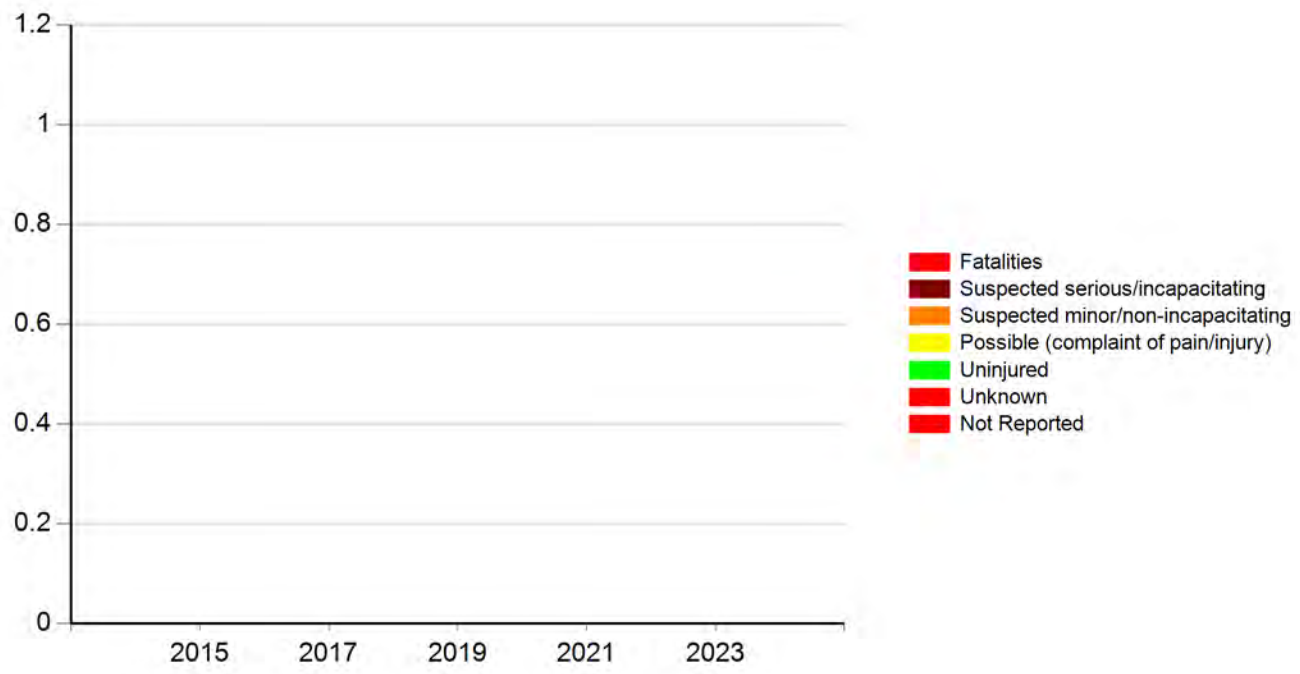
Severity/Year



Injury Status - Annual

Crash Year	Fatalities	Suspected serious/incapacitating	Suspected minor/non-incapacitating	Possible (complaint of pain/injury)	Uninjured	Unknown	Not Reported	**Total**
2014	0	0	0	0	0	0	0	0
2015	0	0	0	0	0	0	0	0
2016	0	0	0	0	0	0	0	0
2017	0	0	0	0	0	0	0	0
2018	0	0	0	0	0	0	0	0
2019	0	0	0	0	0	0	0	0
2020	0	0	0	0	0	0	0	0
2021	0	0	0	0	0	0	0	0
2022	0	0	0	0	0	0	0	0
2023	0	0	0	0	0	0	0	0
2024	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0

Injury Status/Year



Meeting the following criteria

Jurisdiction: Counties (Marion)
Year: 2019, 2020, 2021, 2022, 2023
Map Selection: Yes
Filter: Non Animal-related; Intersection-related

Analyst Information

Elk Horn at Hwy 163

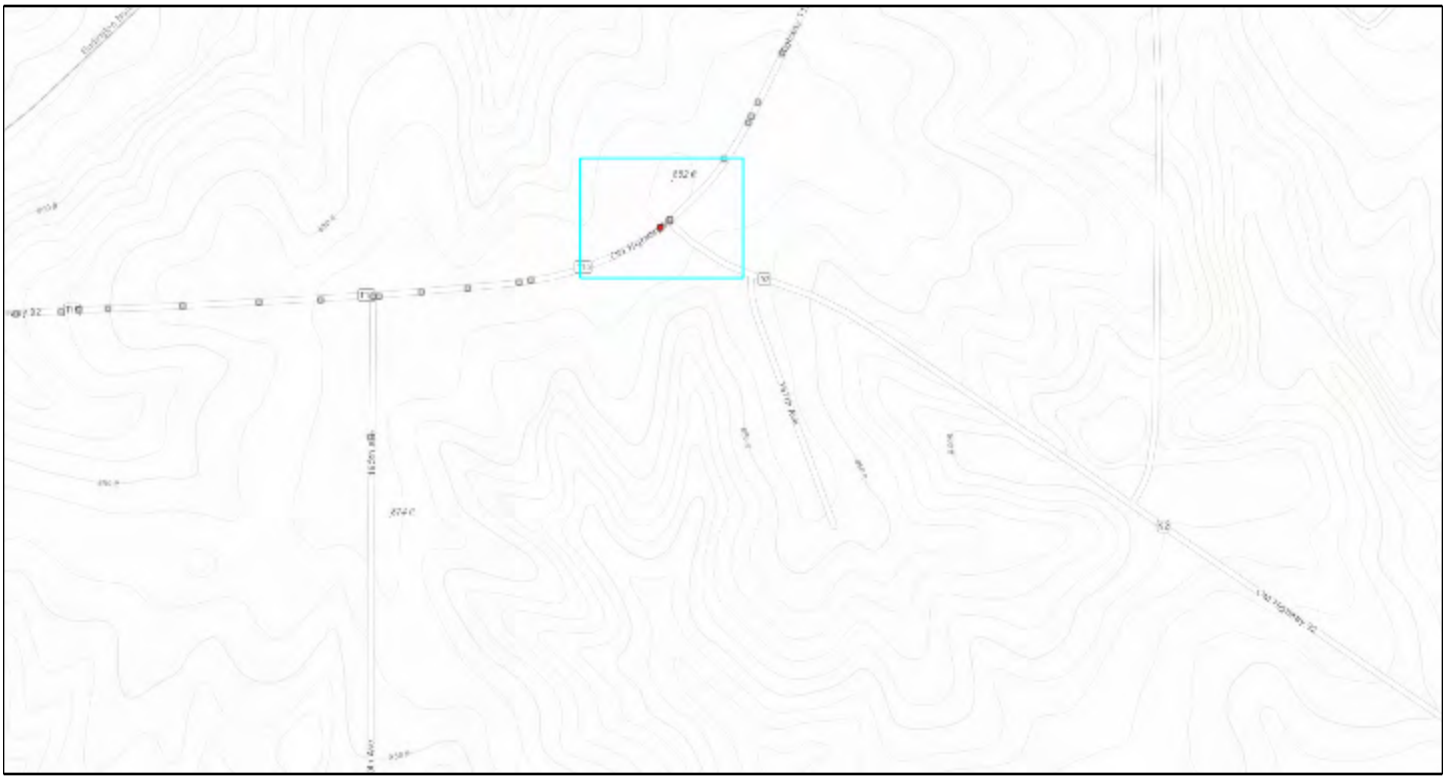
Iowa Crash Analysis Tool
Quick Report
2019-2023

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

Injury Status Summary	0
Fatalities	0
Suspected serious/incapacitating	0
Suspected minor/non-incapacitating	0
Possible (complaint of pain/injury)	0
Uninjured	0
Unknown	0
Not Reported	0

Property/Vehicles/Occupants	
Property Damage Total (dollars):	18,000.00
Average (per crash dollars):	18,000.00
Total Vehicles:	2.00
Average (per crash):	2.00
Total Occupants:	4.00
Average (per crash):	4.00

Average Severity	
Fatalities/Fatal Crash:	0.00
Fatalities/Crash:	0.00
Injuries/Crash:	0.00
Major Injuries/Crash:	0.00
Minor Injuries/Crash:	0.00
Possible/Unknown Injuries/Crash:	0.00



Major Cause			1
Animal	0	Ran traffic signal	0
Ran stop sign	0	Failed to yield to emergency vehicle	0
FTYROW: At uncontrolled intersection	0	FTYROW: Making right turn on red signal	0
FTYROW: From stop sign	0	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	0
Exceeded authorized speed	0	Improper or erratic lane changing	0
Operating vehicle in an reckless/erratic/care...	0	Followed too close	1
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		

Iowa Crash Analysis Tool
Quick Report
2019-2023

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	1	0	0	0	0	0	0	1
Monday	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Tuesday	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Wednesday	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Thursday	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Friday	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Saturday	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	1	0	0	0	0	0	0	1

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

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

Fixed Object Struck			**2**
Bridge overhead structure	0	Bridge pier or support	0
Bridge/bridge rail parapet	0	Curb/island/raised median	0
Ditch	0	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)	2

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	0	0	0	0	0
= 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	0	0	0	0	0
>= 30 and <= 34	0	0	0	0	0
>= 35 and <= 39	0	2	0	0	2
>= 40 and <= 44	0	0	0	0	0
>= 45 and <= 49	0	0	0	0	0
>= 50 and <= 54	0	0	0	0	0
>= 55 and <= 59	0	0	0	0	0
>= 60 and <= 64	0	0	0	0	0
>= 65 and <= 69	0	0	0	0	0
>= 70 and <= 74	0	0	0	0	0
>= 75 and <= 79	0	0	0	0	0
>= 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	0	0	0
Total	0	2	0	0	2

Drug/Alcohol Related	1
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	1

Alcohol Test Given	2
None	2
Blood	0
Urine	0
Breath	0
Vitreous	0
Refused	0
Not reported	0

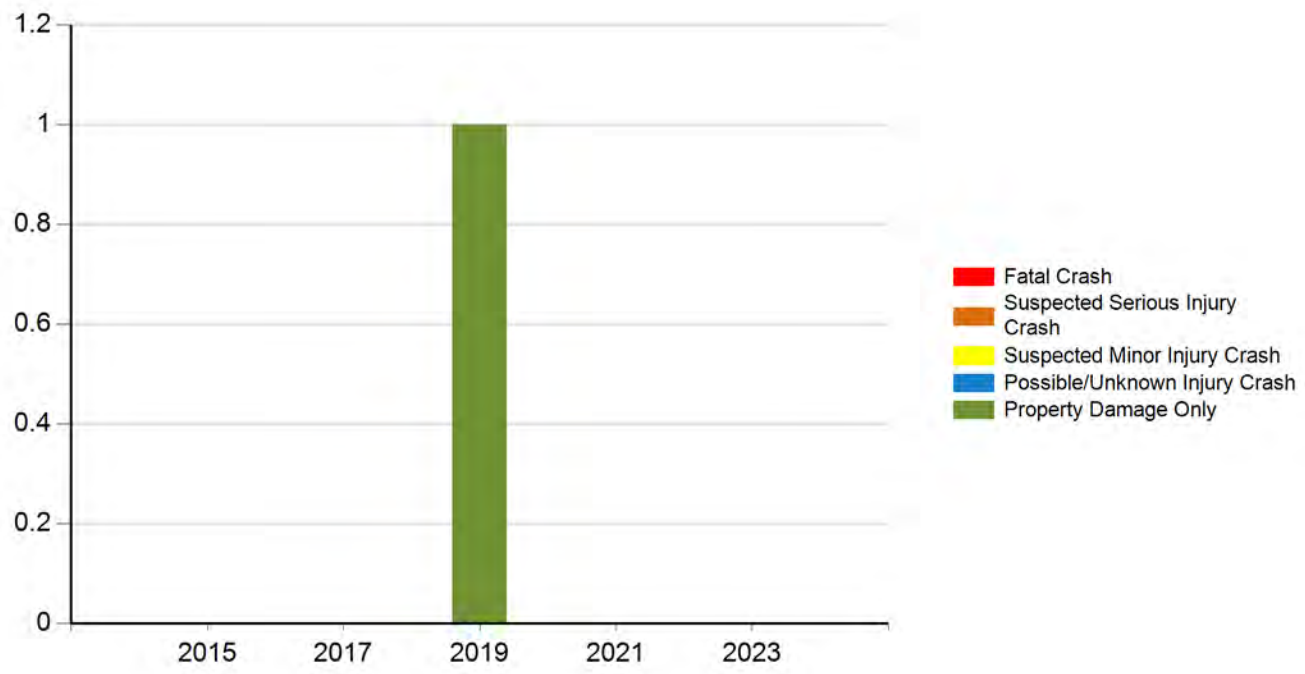
Drug Test Given	2
None	2
Blood	0
Urine	0
Breath	0
Vitreous	0
Refused	0
Not reported	0

Drug Test Result	2
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	2
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**
2014	0	0	0	0	0	0
2015	0	0	0	0	0	0
2016	0	0	0	0	0	0
2017	0	0	0	0	0	0
2018	0	0	0	0	0	0
2019	0	0	0	0	1	1
2020	0	0	0	0	0	0
2021	0	0	0	0	0	0
2022	0	0	0	0	0	0
2023	0	0	0	0	0	0
2024	0	0	0	0	0	0
Total	0	0	0	0	1	1

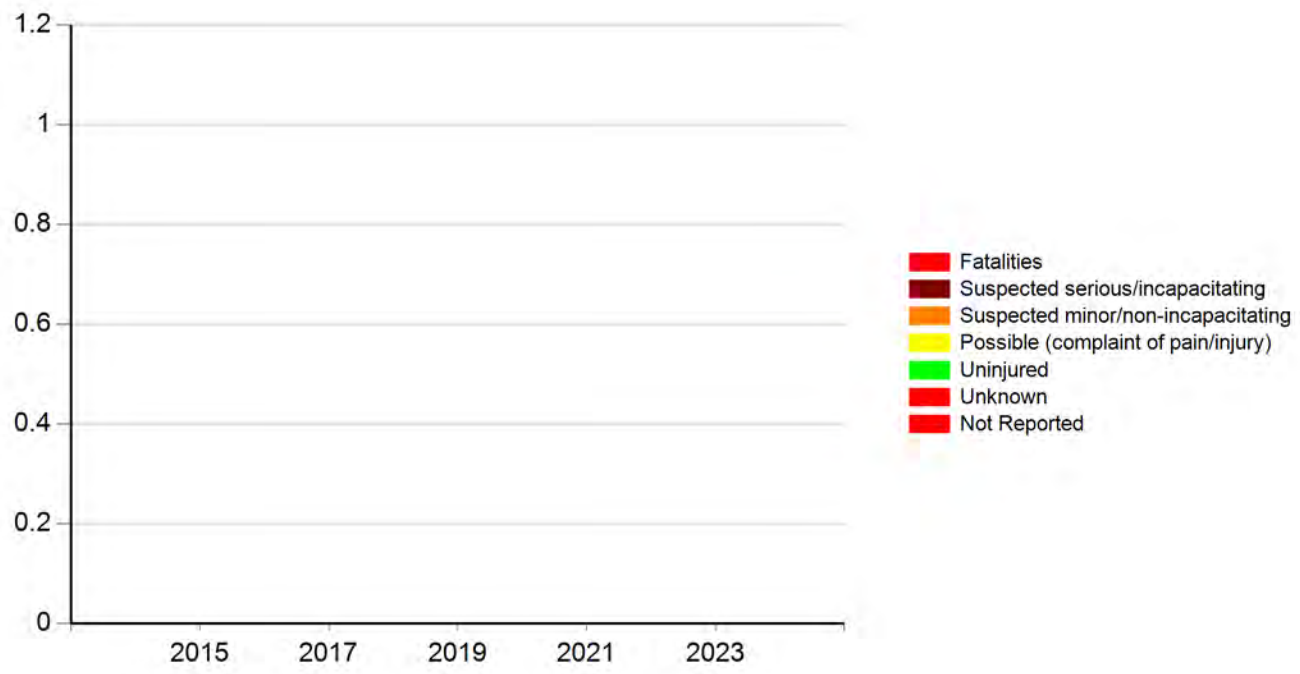
Severity/Year



Injury Status - Annual

Crash Year	Fatalities	Suspected serious/incapacitating	Suspected minor/non-incapacitating	Possible (complaint of pain/injury)	Uninjured	Unknown	Not Reported	**Total**
2014	0	0	0	0	0	0	0	0
2015	0	0	0	0	0	0	0	0
2016	0	0	0	0	0	0	0	0
2017	0	0	0	0	0	0	0	0
2018	0	0	0	0	0	0	0	0
2019	0	0	0	0	0	0	0	0
2020	0	0	0	0	0	0	0	0
2021	0	0	0	0	0	0	0	0
2022	0	0	0	0	0	0	0	0
2023	0	0	0	0	0	0	0	0
2024	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0

Injury Status/Year



Meeting the following criteria

Jurisdiction: Counties (Marion)
Year: 2019, 2020, 2021, 2022, 2023
Map Selection: Yes
Filter: Non Animal-related; Intersection-related

Analyst Information

T15 & Old Hwy 92

Iowa Crash Analysis Tool
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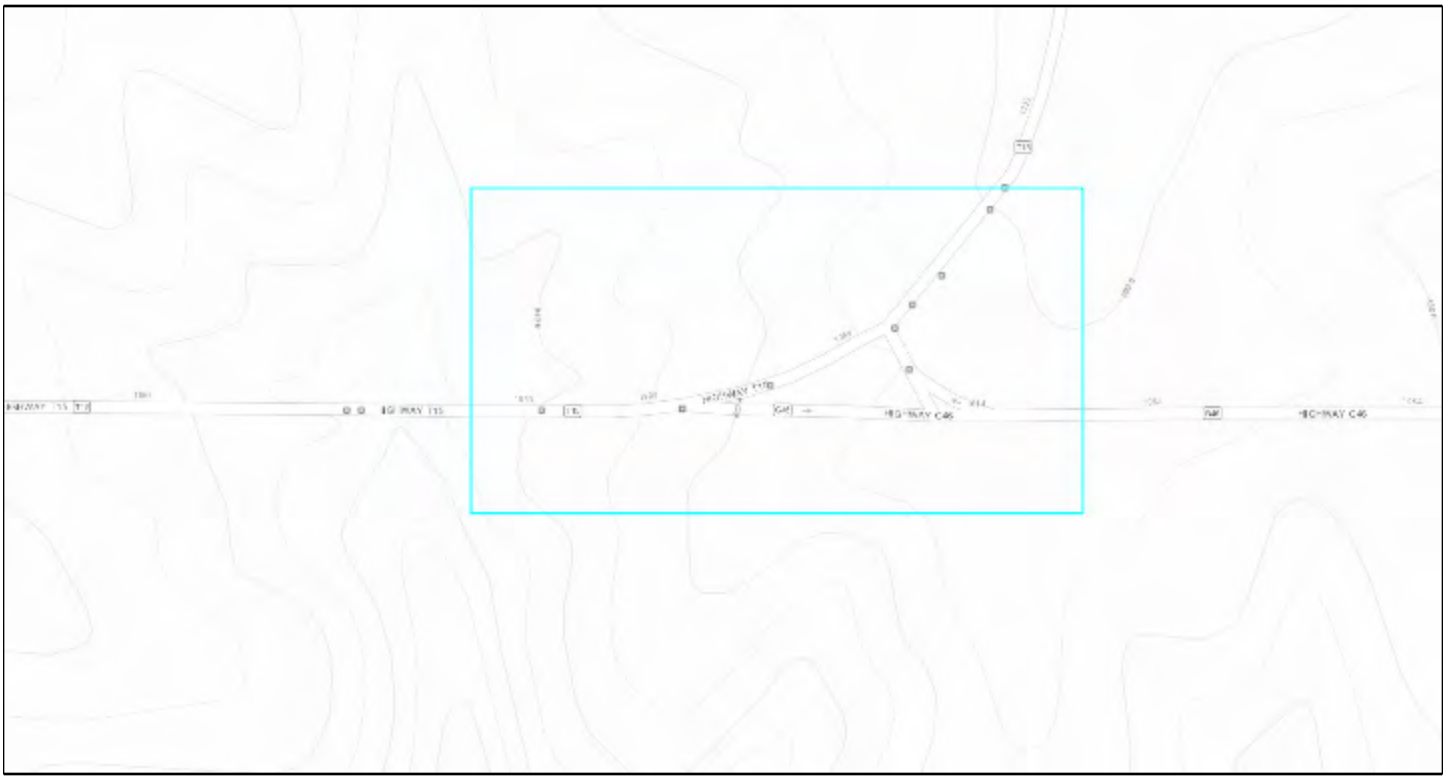
Crash Severity	0
Fatal Crash	0
Suspected Serious Injury Crash	0
Suspected Minor Injury Crash	0
Possible/Unknown Injury Crash	0
Property Damage Only	0

Injury Status Summary	0
Fatalities	0
Suspected serious/incapacitating	0
Suspected minor/non-incapacitating	0
Possible (complaint of pain/injury)	0
Uninjured	0
Unknown	0
Not Reported	0

Property/Vehicles/Occupants	
Property Damage Total (dollars):	
Average (per crash dollars):	
Total Vehicles:	
Average (per crash):	
Total Occupants:	
Average (per crash):	

Average Severity	
Fatalities/Fatal Crash:	0.00
Fatalities/Crash:	0.00
Injuries/Crash:	0.00
Major Injuries/Crash:	0.00
Minor Injuries/Crash:	0.00
Possible/Unknown Injuries/Crash:	0.00



Major Cause			0
Animal	0	Ran traffic signal	0
Ran stop sign	0	Failed to yield to emergency vehicle	0
FTYROW: At uncontrolled intersection	0	FTYROW: Making right turn on red signal	0
FTYROW: From stop sign	0	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	0
Exceeded authorized speed	0	Improper or erratic lane changing	0
Operating vehicle in an reckless/erratic/care...	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		

Iowa Crash Analysis Tool
Quick Report
2019-2023

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	0	0	0	0	0	0	0	0	0	0	0
Tuesday	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Wednesday	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Thursday	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Friday	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Saturday	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0

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

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

Fixed Object Struck			**0**
Bridge overhead structure	0	Bridge pier or support	0
Bridge/bridge rail parapet	0	Curb/island/raised median	0
Ditch	0	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)	0

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	0	0	0	0	0
= 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	0	0	0	0	0
>= 30 and <= 34	0	0	0	0	0
>= 35 and <= 39	0	0	0	0	0
>= 40 and <= 44	0	0	0	0	0
>= 45 and <= 49	0	0	0	0	0
>= 50 and <= 54	0	0	0	0	0
>= 55 and <= 59	0	0	0	0	0
>= 60 and <= 64	0	0	0	0	0
>= 65 and <= 69	0	0	0	0	0
>= 70 and <= 74	0	0	0	0	0
>= 75 and <= 79	0	0	0	0	0
>= 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	0	0	0
Total	0	0	0	0	0

Drug/Alcohol Related	0
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	0

Alcohol Test Given	0
None	0
Blood	0
Urine	0
Breath	0
Vitreous	0
Refused	0
Not reported	0

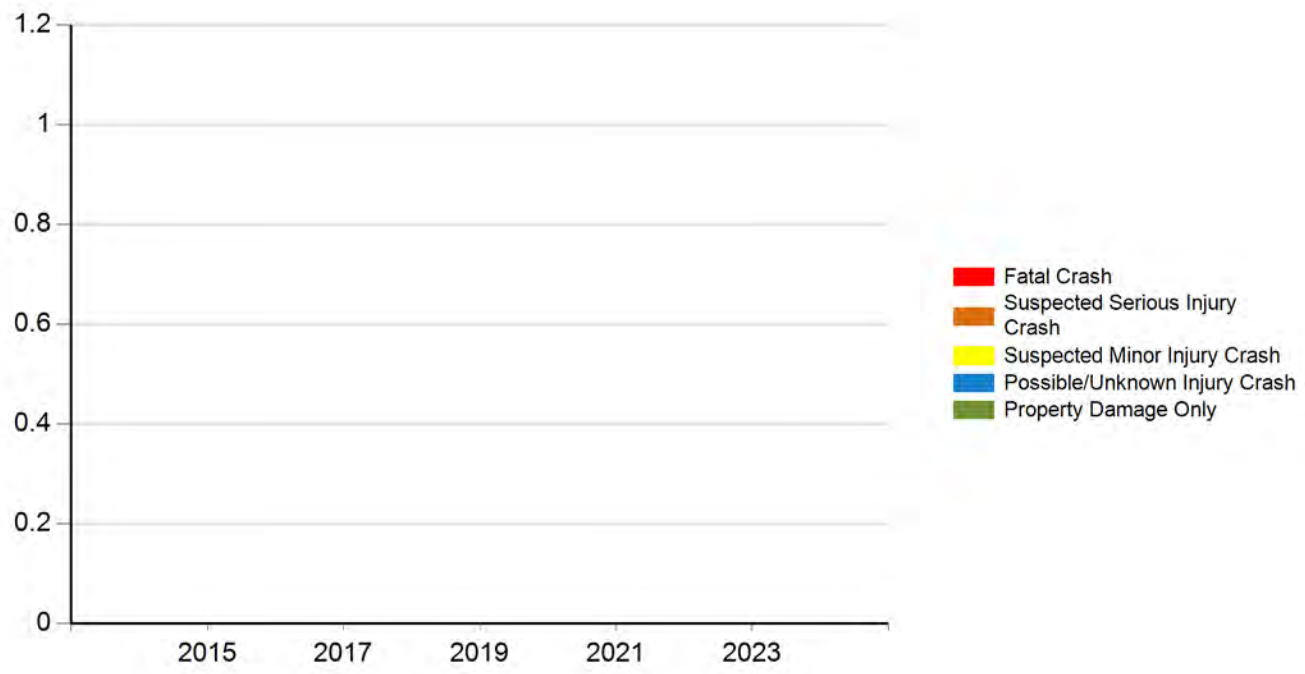
Drug Test Given	0
None	0
Blood	0
Urine	0
Breath	0
Vitreous	0
Refused	0
Not reported	0

Drug Test Result	0
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	0
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**
2014	0	0	0	0	0	0
2015	0	0	0	0	0	0
2016	0	0	0	0	0	0
2017	0	0	0	0	0	0
2018	0	0	0	0	0	0
2019	0	0	0	0	0	0
2020	0	0	0	0	0	0
2021	0	0	0	0	0	0
2022	0	0	0	0	0	0
2023	0	0	0	0	0	0
2024	0	0	0	0	0	0
Total	0	0	0	0	0	0

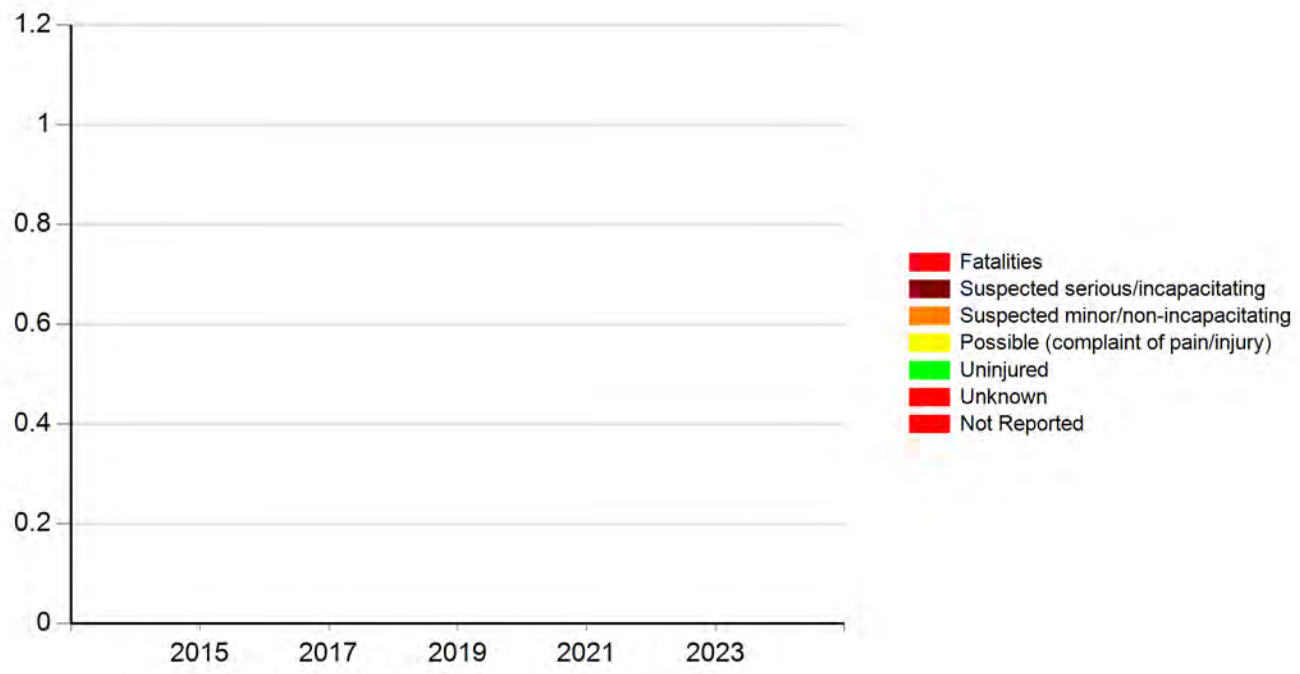
Severity/Year



Injury Status - Annual

Crash Year	Fatalities	Suspected serious/incapacitating	Suspected minor/non-incapacitating	Possible (complaint of pain/injury)	Uninjured	Unknown	Not Reported	**Total**
2014	0	0	0	0	0	0	0	0
2015	0	0	0	0	0	0	0	0
2016	0	0	0	0	0	0	0	0
2017	0	0	0	0	0	0	0	0
2018	0	0	0	0	0	0	0	0
2019	0	0	0	0	0	0	0	0
2020	0	0	0	0	0	0	0	0
2021	0	0	0	0	0	0	0	0
2022	0	0	0	0	0	0	0	0
2023	0	0	0	0	0	0	0	0
2024	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0

Injury Status/Year



Meeting the following criteria

Jurisdiction: Counties (Marion)
Year: 2019, 2020, 2021, 2022, 2023
Map Selection: Yes
Filter: Non Animal-related; Intersection-related

Analyst Information

Iowa Crash Analysis Tool
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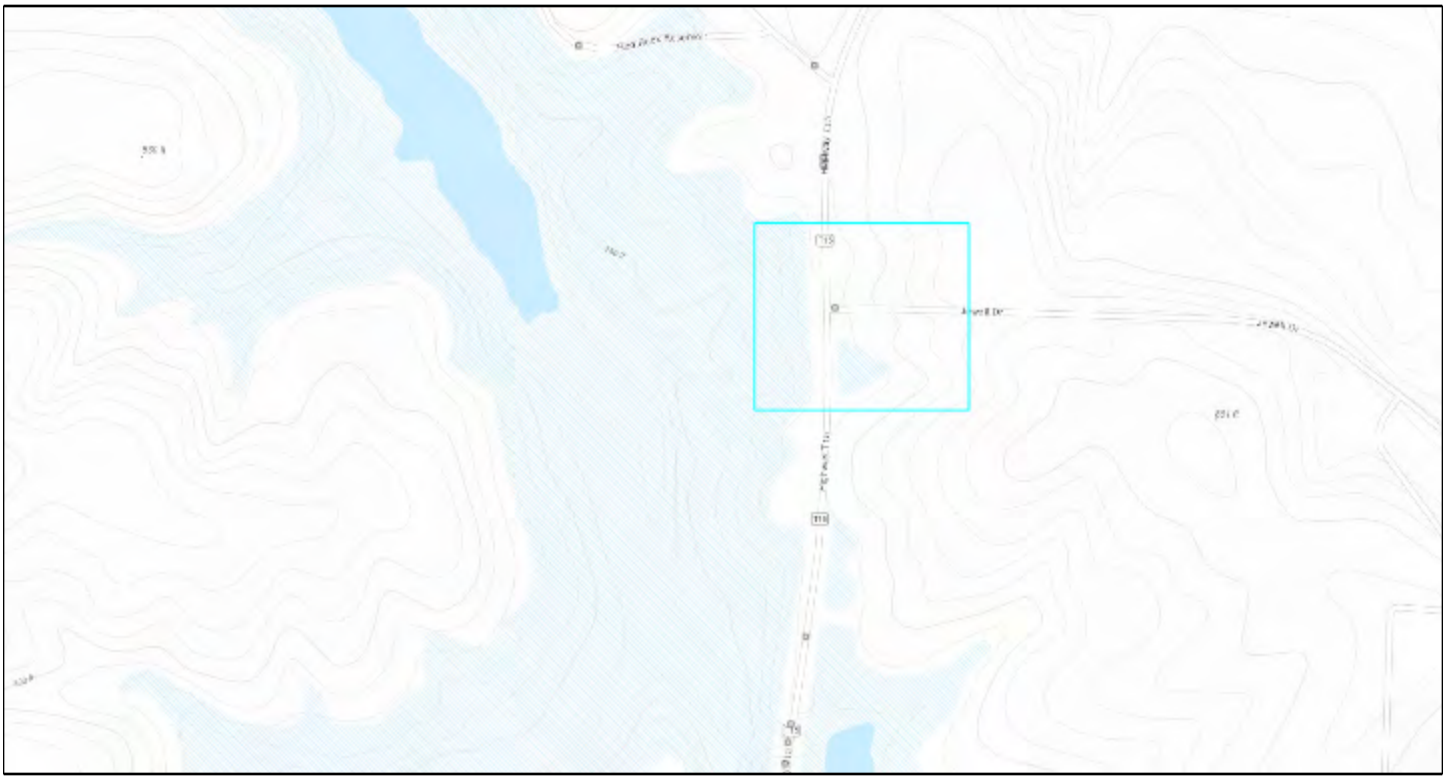
Crash Severity	0
Fatal Crash	0
Suspected Serious Injury Crash	0
Suspected Minor Injury Crash	0
Possible/Unknown Injury Crash	0
Property Damage Only	0

Injury Status Summary	0
Fatalities	0
Suspected serious/incapacitating	0
Suspected minor/non-incapacitating	0
Possible (complaint of pain/injury)	0
Uninjured	0
Unknown	0
Not Reported	0

Property/Vehicles/Occupants	
Property Damage Total (dollars):	
Average (per crash dollars):	
Total Vehicles:	
Average (per crash):	
Total Occupants:	
Average (per crash):	

Average Severity	
Fatalities/Fatal Crash:	0.00
Fatalities/Crash:	0.00
Injuries/Crash:	0.00
Major Injuries/Crash:	0.00
Minor Injuries/Crash:	0.00
Possible/Unknown Injuries/Crash:	0.00



Major Cause			0
Animal	0	Ran traffic signal	0
Ran stop sign	0	Failed to yield to emergency vehicle	0
FTYROW: At uncontrolled intersection	0	FTYROW: Making right turn on red signal	0
FTYROW: From stop sign	0	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	0
Exceeded authorized speed	0	Improper or erratic lane changing	0
Operating vehicle in an reckless/erratic/care...	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		

Iowa Crash Analysis Tool
Quick Report
2019-2023

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	0	0	0	0	0	0	0	0	0	0	0
Tuesday	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Wednesday	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Thursday	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Friday	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Saturday	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0

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

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

Fixed Object Struck			**0**
Bridge overhead structure	0	Bridge pier or support	0
Bridge/bridge rail parapet	0	Curb/island/raised median	0
Ditch	0	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)	0

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	0	0	0	0	0
= 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	0	0	0	0	0
>= 30 and <= 34	0	0	0	0	0
>= 35 and <= 39	0	0	0	0	0
>= 40 and <= 44	0	0	0	0	0
>= 45 and <= 49	0	0	0	0	0
>= 50 and <= 54	0	0	0	0	0
>= 55 and <= 59	0	0	0	0	0
>= 60 and <= 64	0	0	0	0	0
>= 65 and <= 69	0	0	0	0	0
>= 70 and <= 74	0	0	0	0	0
>= 75 and <= 79	0	0	0	0	0
>= 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	0	0	0
Total	0	0	0	0	0

Drug/Alcohol Related	0
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	0

Alcohol Test Given	0
None	0
Blood	0
Urine	0
Breath	0
Vitreous	0
Refused	0
Not reported	0

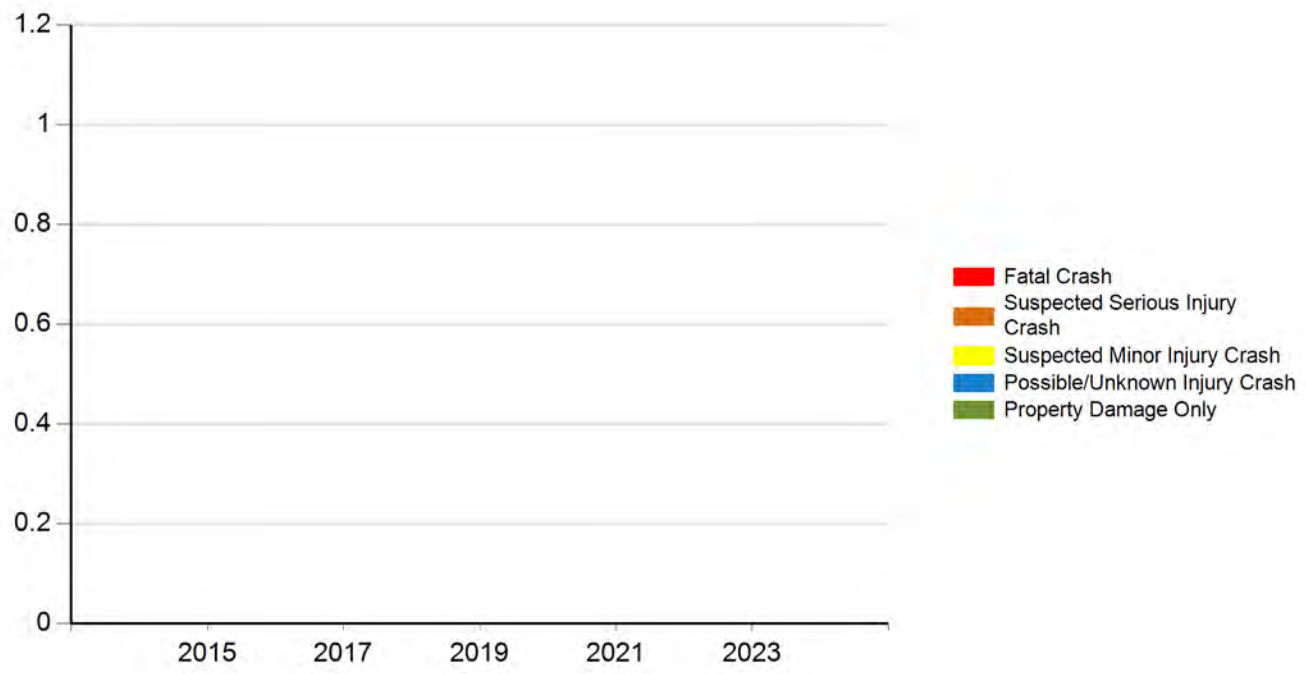
Drug Test Given	0
None	0
Blood	0
Urine	0
Breath	0
Vitreous	0
Refused	0
Not reported	0

Drug Test Result	0
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	0
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**
2014	0	0	0	0	0	0
2015	0	0	0	0	0	0
2016	0	0	0	0	0	0
2017	0	0	0	0	0	0
2018	0	0	0	0	0	0
2019	0	0	0	0	0	0
2020	0	0	0	0	0	0
2021	0	0	0	0	0	0
2022	0	0	0	0	0	0
2023	0	0	0	0	0	0
2024	0	0	0	0	0	0
Total	0	0	0	0	0	0

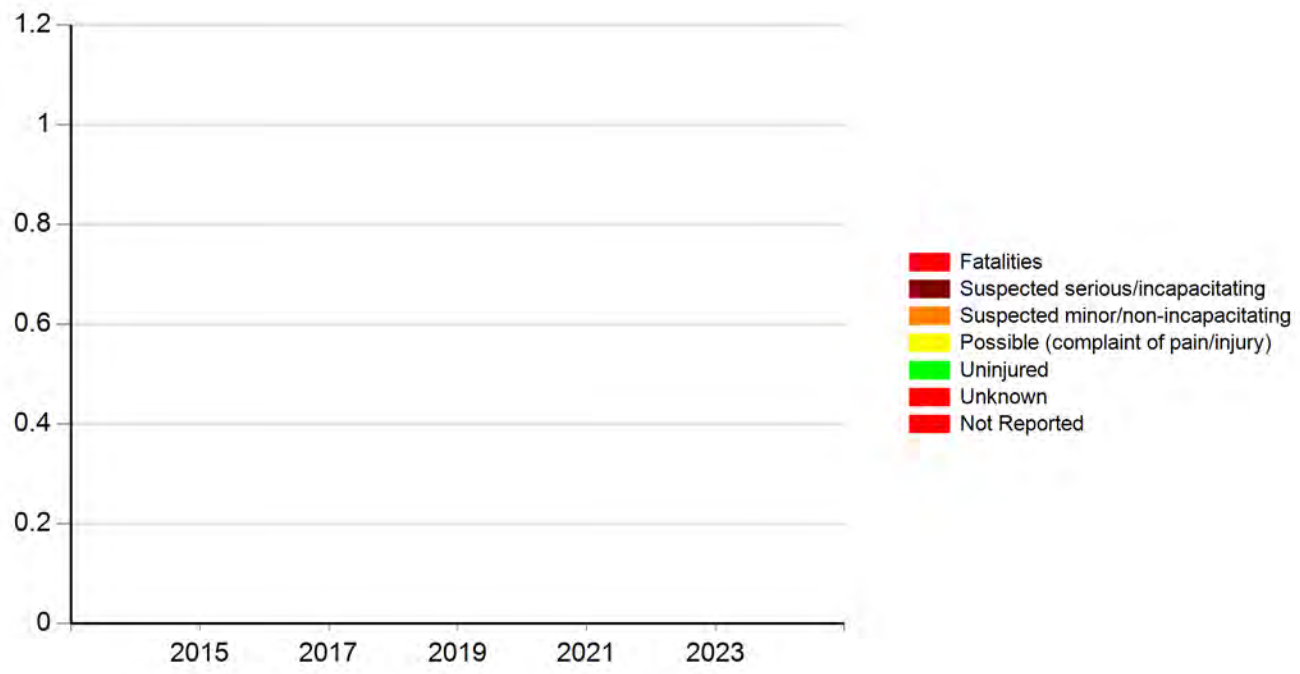
Severity/Year



Injury Status - Annual

Crash Year	Fatalities	Suspected serious/incapacitating	Suspected minor/non-incapacitating	Possible (complaint of pain/injury)	Uninjured	Unknown	Not Reported	**Total**
2014	0	0	0	0	0	0	0	0
2015	0	0	0	0	0	0	0	0
2016	0	0	0	0	0	0	0	0
2017	0	0	0	0	0	0	0	0
2018	0	0	0	0	0	0	0	0
2019	0	0	0	0	0	0	0	0
2020	0	0	0	0	0	0	0	0
2021	0	0	0	0	0	0	0	0
2022	0	0	0	0	0	0	0	0
2023	0	0	0	0	0	0	0	0
2024	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0

Injury Status/Year



Meeting the following criteria

Jurisdiction: Counties (Marion)
Year: 2019, 2020, 2021, 2022, 2023
Map Selection: Yes
Filter: Non Animal-related

Analyst Information

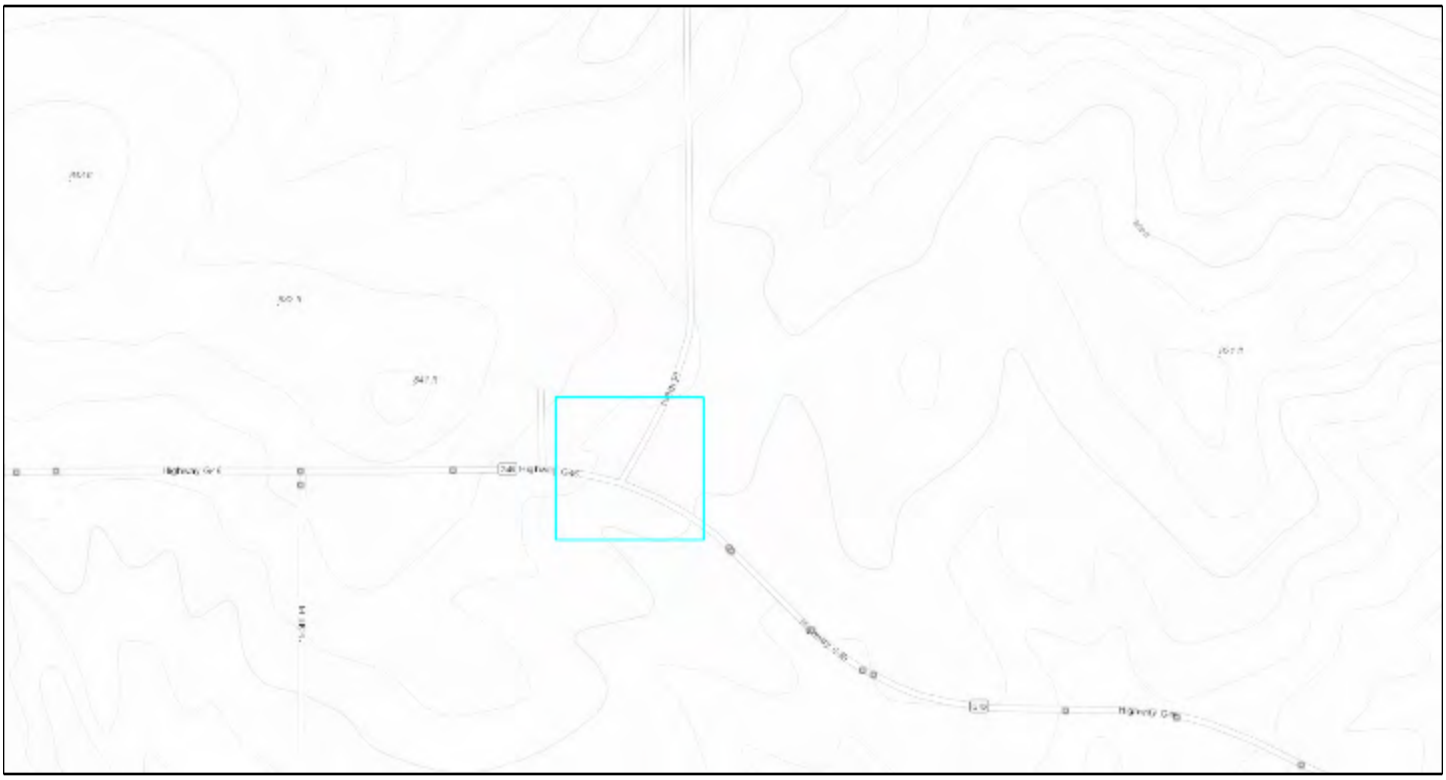
Iowa Crash Analysis Tool
Quick Report
2019-2023

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

Injury Status Summary	0
Fatalities	0
Suspected serious/incapacitating	0
Suspected minor/non-incapacitating	0
Possible (complaint of pain/injury)	0
Uninjured	0
Unknown	0
Not Reported	0

Property/Vehicles/Occupants	
Property Damage Total (dollars):	
Average (per crash dollars):	
Total Vehicles:	
Average (per crash):	
Total Occupants:	
Average (per crash):	

Average Severity	
Fatalities/Fatal Crash:	0.00
Fatalities/Crash:	0.00
Injuries/Crash:	0.00
Major Injuries/Crash:	0.00
Minor Injuries/Crash:	0.00
Possible/Unknown Injuries/Crash:	0.00



Major Cause			0
Animal	0	Ran traffic signal	0
Ran stop sign	0	Failed to yield to emergency vehicle	0
FTYROW: At uncontrolled intersection	0	FTYROW: Making right turn on red signal	0
FTYROW: From stop sign	0	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	0
Exceeded authorized speed	0	Improper or erratic lane changing	0
Operating vehicle in an reckless/erratic/care...	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		

Iowa Crash Analysis Tool
Quick Report
2019-2023

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	0	0	0	0	0	0	0	0	0	0	0
Tuesday	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Wednesday	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Thursday	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Friday	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Saturday	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0

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

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

Fixed Object Struck			**0**
Bridge overhead structure	0	Bridge pier or support	0
Bridge/bridge rail parapet	0	Curb/island/raised median	0
Ditch	0	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)	0

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	0	0	0	0	0
= 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	0	0	0	0	0
>= 30 and <= 34	0	0	0	0	0
>= 35 and <= 39	0	0	0	0	0
>= 40 and <= 44	0	0	0	0	0
>= 45 and <= 49	0	0	0	0	0
>= 50 and <= 54	0	0	0	0	0
>= 55 and <= 59	0	0	0	0	0
>= 60 and <= 64	0	0	0	0	0
>= 65 and <= 69	0	0	0	0	0
>= 70 and <= 74	0	0	0	0	0
>= 75 and <= 79	0	0	0	0	0
>= 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	0	0	0
Total	0	0	0	0	0

Drug/Alcohol Related	0
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	0

Alcohol Test Given	0
None	0
Blood	0
Urine	0
Breath	0
Vitreous	0
Refused	0
Not reported	0

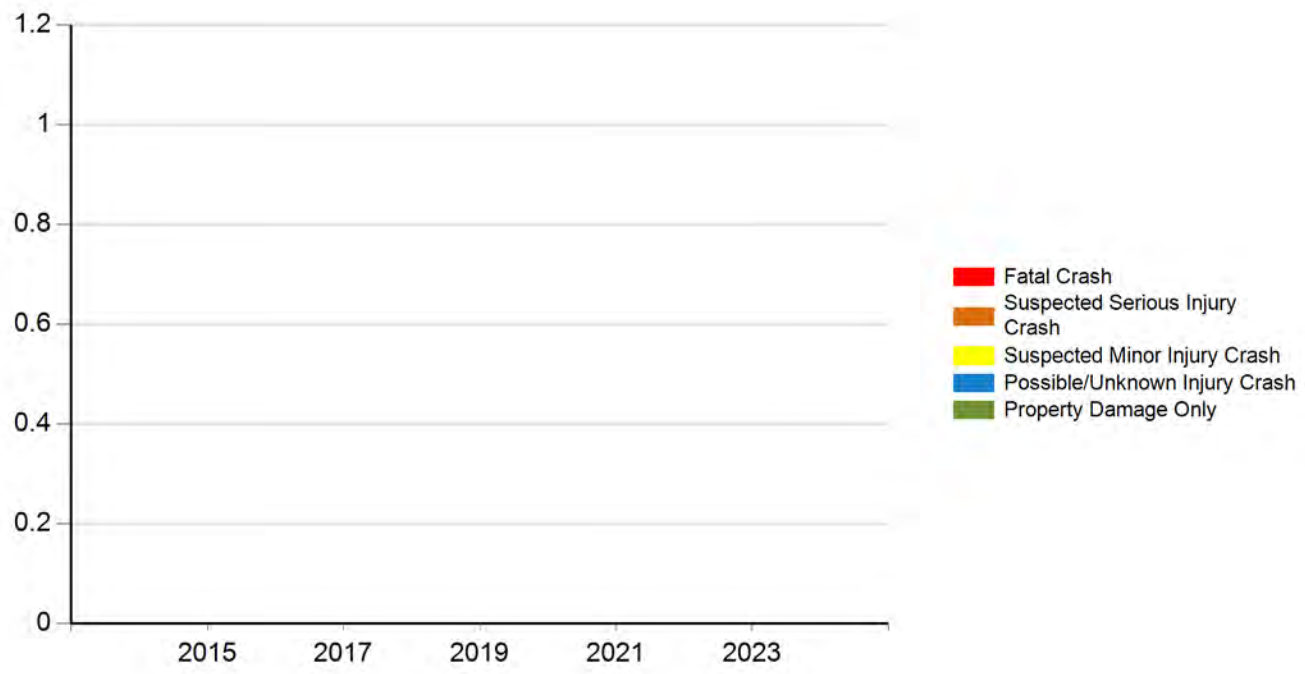
Drug Test Given	0
None	0
Blood	0
Urine	0
Breath	0
Vitreous	0
Refused	0
Not reported	0

Drug Test Result	0
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	0
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**
2014	0	0	0	0	0	0
2015	0	0	0	0	0	0
2016	0	0	0	0	0	0
2017	0	0	0	0	0	0
2018	0	0	0	0	0	0
2019	0	0	0	0	0	0
2020	0	0	0	0	0	0
2021	0	0	0	0	0	0
2022	0	0	0	0	0	0
2023	0	0	0	0	0	0
2024	0	0	0	0	0	0
Total	0	0	0	0	0	0

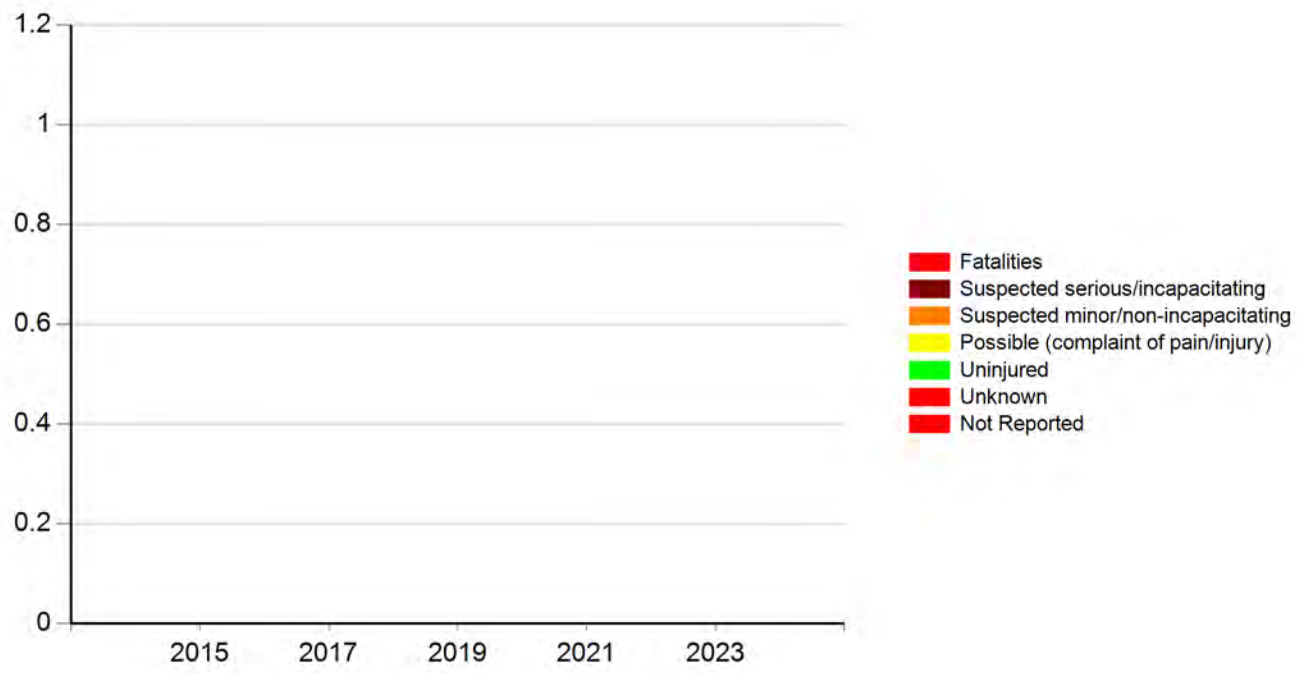
Severity/Year



Injury Status - Annual

Crash Year	Fatalities	Suspected serious/incapacitating	Suspected minor/non-incapacitating	Possible (complaint of pain/injury)	Uninjured	Unknown	Not Reported	**Total**
2014	0	0	0	0	0	0	0	0
2015	0	0	0	0	0	0	0	0
2016	0	0	0	0	0	0	0	0
2017	0	0	0	0	0	0	0	0
2018	0	0	0	0	0	0	0	0
2019	0	0	0	0	0	0	0	0
2020	0	0	0	0	0	0	0	0
2021	0	0	0	0	0	0	0	0
2022	0	0	0	0	0	0	0	0
2023	0	0	0	0	0	0	0	0
2024	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0

Injury Status/Year



Meeting the following criteria

Jurisdiction: Counties (Marion)
Year: 2019, 2020, 2021, 2022, 2023
Map Selection: Yes
Filter: Non Animal-related; Intersection-related

Analyst Information

County:	Marion	Prepared By:	TRC
Location:	IA 14 & G76	Date Prepared:	8/13/2024
Proposed Improvements:	Destination Light		
Estimated Improvement Cost:	$ 15,000		
Inflation on Crash Costs:	4%	Annual Maintenance: (% of Improvement Cost)	2%
Discount Rate:	4%		
Estimated Service Life:	15	Annual Maintenance Cost:	$ 300
Method Choice:	CRF Method		

The Crash Reduction Factor (CRF) Method applies one to three CRFs to historical crashes to estimate reductions in future crashes. Crash Modification Factors (CMFs) can be converted to CRFs. For additional information, click the "Learn More" button.

Crash Reduction Factor (CRF) Method

Traffic Growth Factor:	1%
Number of CRFs:	1
Years of Crash History:	5

Combined CRF (Dominant Common Residuals Method)

Iowa DOT's preferred methodology for combining CRFs is Dominant Common Residuals, since it is more conservative than the other options.

	CRF 1:	Combined CRF
CRF Value (%)	50	**50.0**

Crash Severity	Rounded Societal Costs	Crash History (Total):	CRF (from above)	Crash History - Annual Avg	Crashes Saved Annually
Fatal (K)	$ 4,200,000	0	50.0	**0.00**	**0.00**
Serious Injury (A)	$ 4,200,000	0	50.0	**0.00**	**0.00**
Minor Injury (B)	$ 280,000	4	50.0	**0.80**	**0.40**
Possible/Unknown Injury (C)	$ 130,000	1	50.0	**0.20**	**0.10**
Property Damage Only (O)	$ 20,000	1	50.0	**0.20**	**0.10**

Crash Severity	Annual Societal Benefit
Fatal (K)	**$ -**
Serious Injury (A)	**$ -**
Minor Injury (B)	**$ 112,000**
Possible/Unknown Injury (C)	**$ 13,000**
Property Damage Only (O)	**$ 2,000**

Total Benefits and Costs

		Implementation Cost	$ 15,000
		Present Value of Maint.	$ 3,336
Present Value Benefits (Societal Benefits)	$ 1,504,337	Present Value Costs (Impl. and Maint. Costs)	$ 18,336
Present Value Net Return	$ 1,486,001		
Benefit Cost Ratio	**82.04**		

Form continues on next page

County:	Marion	Prepared By:	TRC
Location:	IA 14 & G76	Date Prepared:	8/13/2024

No Input Necessary - No Custom Values In Use

General Customizations

No change to Crash Costs

No change to Discount Rate

No change to Maintenance Costs

Method-Specific Customizations

No change to Traffic Growth Rate

No change to Crash History

County:	Marion	Prepared By:	TRC
Location:	IA 92 & T17	Date Prepared:	8/13/2024
Proposed Improvements:	Destination Light		
Estimated Improvement Cost:	$ 15,000		
Inflation on Crash Costs:	4%	Annual Maintenance: (% of Improvement Cost)	2%
Discount Rate:	4%		
Estimated Service Life:	15	Annual Maintenance Cost:	$ 300
Method Choice:	CRF Method		

The Crash Reduction Factor (CRF) Method applies one to three CRFs to historical crashes to estimate reductions in future crashes. Crash Modification Factors (CMFs) can be converted to CRFs. For additional information, click the "Learn More" button.

Crash Reduction Factor (CRF) Method

Traffic Growth Factor:	1%
Number of CRFs:	1
Years of Crash History:	5

Combined CRF (Dominant Common Residuals Method)

Iowa DOT's preferred methodology for combining CRFs is Dominant Common Residuals, since it is more conservative than the other options.

	CRF 1:	Combined CRF
CRF Value (%)	50	**50.0**

Crash Severity	Rounded Societal Costs	Crash History (Total):	CRF (from above)	Crash History - Annual Avg	Crashes Saved Annually
Fatal (K)	$ 4,200,000	0	50.0	**0.00**	**0.00**
Serious Injury (A)	$ 4,200,000	0	50.0	**0.00**	**0.00**
Minor Injury (B)	$ 280,000	3	50.0	**0.60**	**0.30**
Possible/Unknown Injury (C)	$ 130,000	2	50.0	**0.40**	**0.20**
Property Damage Only (O)	$ 20,000	3	50.0	**0.60**	**0.30**

Crash Severity	Annual Societal Benefit
Fatal (K)	**$ -**
Serious Injury (A)	**$ -**
Minor Injury (B)	**$ 84,000**
Possible/Unknown Injury (C)	**$ 26,000**
Property Damage Only (O)	**$ 6,000**

Total Benefits and Costs

		Implementation Cost	$ 15,000
		Present Value of Maint.	$ 3,336
Present Value Benefits (Societal Benefits)	$ 1,374,040	Present Value Costs (Impl. and Maint. Costs)	$ 18,336
Present Value Net Return	$ 1,355,704		
Benefit Cost Ratio	**74.94**		

Form continues on next page

County:	Marion	Prepared By:	TRC
Location:	IA 92 & T17	Date Prepared:	8/13/2024

No Input Necessary - No Custom Values In Use

General Customizations

No change to Crash Costs

No change to Discount Rate

No change to Maintenance Costs

Method-Specific Customizations

No change to Traffic Growth Rate

No change to Crash History

County:	Marion	Prepared By:	TRC
Location:	G46 & T17	Date Prepared:	8/13/2024
Proposed Improvements:	Destination Light		
Estimated Improvement Cost:	$ 15,000		
Inflation on Crash Costs:	4%	Annual Maintenance: (% of Improvement Cost)	2%
Discount Rate:	4%		
Estimated Service Life:	15	Annual Maintenance Cost:	$ 300
Method Choice:	CRF Method		

The Crash Reduction Factor (CRF) Method applies one to three CRFs to historical crashes to estimate reductions in future crashes. Crash Modification Factors (CMFs) can be converted to CRFs. For additional information, click the "Learn More" button.

Crash Reduction Factor (CRF) Method

Traffic Growth Factor:	1%
Number of CRFs:	1
Years of Crash History:	5

Combined CRF (Dominant Common Residuals Method)

Iowa DOT's preferred methodology for combining CRFs is Dominant Common Residuals, since it is more conservative than the other options.

	CRF 1:	Combined CRF
CRF Value (%)	50	**50.0**

Crash Severity	Rounded Societal Costs	Crash History (Total):	CRF (from above)	Crash History - Annual Avg	Crashes Saved Annually
Fatal (K)	$ 4,200,000	0	50.0	**0.00**	**0.00**
Serious Injury (A)	$ 4,200,000	0	50.0	**0.00**	**0.00**
Minor Injury (B)	$ 280,000	0	50.0	**0.00**	**0.00**
Possible/Unknown Injury (C)	$ 130,000	0	50.0	**0.00**	**0.00**
Property Damage Only (O)	$ 20,000	1	50.0	**0.20**	**0.10**

Crash Severity	Annual Societal Benefit
Fatal (K)	**$ -**
Serious Injury (A)	**$ -**
Minor Injury (B)	**$ -**
Possible/Unknown Injury (C)	**$ -**
Property Damage Only (O)	**$ 2,000**

Total Benefits and Costs

		Implementation Cost	$ 15,000
		Present Value of Maint.	$ 3,336
Present Value Benefits (Societal Benefits)	$ 23,690	Present Value Costs (Impl. and Maint. Costs)	$ 18,336
Present Value Net Return	$ 5,355		
Benefit Cost Ratio	**1.29**		

Form continues on next page

County:	Marion	Prepared By:	TRC
Location:	G46 & T17	Date Prepared:	8/13/2024

No Input Necessary - No Custom Values In Use

General Customizations

No change to Crash Costs

No change to Discount Rate

No change to Maintenance Costs

Method-Specific Customizations

No change to Traffic Growth Rate

No change to Crash History

County:	Marion	Prepared By:	TRC
Location:	T17 & T17 (Elevator Rd)	Date Prepared:	8/13/2024
Proposed Improvements:	Destination Light		
Estimated Improvement Cost:	$ 5,000		
Inflation on Crash Costs:	4%	Annual Maintenance: (% of Improvement Cost)	2%
Discount Rate:	4%		
Estimated Service Life:	15	Annual Maintenance Cost:	$ 100
Method Choice:	CRF Method		

The Crash Reduction Factor (CRF) Method applies one to three CRFs to historical crashes to estimate reductions in future crashes. Crash Modification Factors (CMFs) can be converted to CRFs. For additional information, click the "Learn More" button.

Crash Reduction Factor (CRF) Method

Traffic Growth Factor:	1%
Number of CRFs:	1
Years of Crash History:	5

Combined CRF (Dominant Common Residuals Method)

Iowa DOT's preferred methodology for combining CRFs is Dominant Common Residuals, since it is more conservative than the other options.

	CRF 1:	Combined CRF
CRF Value (%)	50	**50.0**

Crash Severity	Rounded Societal Costs	Crash History (Total):	CRF (from above)	Crash History - Annual Avg	Crashes Saved Annually
Fatal (K)	$ 4,200,000	0	50.0	**0.00**	**0.00**
Serious Injury (A)	$ 4,200,000	0	50.0	**0.00**	**0.00**
Minor Injury (B)	$ 280,000	0	50.0	**0.00**	**0.00**
Possible/Unknown Injury (C)	$ 130,000	0	50.0	**0.00**	**0.00**
Property Damage Only (O)	$ 20,000	0	50.0	**0.00**	**0.00**

Crash Severity	Annual Societal Benefit
Fatal (K)	**$ -**
Serious Injury (A)	**$ -**
Minor Injury (B)	**$ -**
Possible/Unknown Injury (C)	**$ -**
Property Damage Only (O)	**$ -**

Total Benefits and Costs

		Implementation Cost	$ 5,000
		Present Value of Maint.	$ 1,112
Present Value Benefits (Societal Benefits)	$ -	Present Value Costs (Impl. and Maint. Costs)	$ 6,112
Present Value Net Return	$ (6,112)		
Benefit Cost Ratio	**-**		

Form continues on next page

County:	Marion	Prepared By:	TRC
Location:	T17 & T17 (Elevator Rd)	Date Prepared:	8/13/2024

No Input Necessary - No Custom Values In Use

General Customizations

No change to Crash Costs

No change to Discount Rate

No change to Maintenance Costs

Method-Specific Customizations

No change to Traffic Growth Rate

No change to Crash History

County:	Marion	Prepared By:	TRC
Location:	G76 & IA 5	Date Prepared:	8/13/2024
Proposed Improvements:	Destination Light		
Estimated Improvement Cost:	$ 30,000		
Inflation on Crash Costs:	4%	Annual Maintenance: (% of Improvement Cost)	2%
Discount Rate:	4%		
Estimated Service Life:	15	Annual Maintenance Cost:	$ 600
Method Choice:	CRF Method		

The Crash Reduction Factor (CRF) Method applies one to three CRFs to historical crashes to estimate reductions in future crashes. Crash Modification Factors (CMFs) can be converted to CRFs. For additional information, click the "Learn More" button.

Crash Reduction Factor (CRF) Method

Traffic Growth Factor:	1%
Number of CRFs:	1
Years of Crash History:	5

Combined CRF (Dominant Common Residuals Method)

Iowa DOT's preferred methodology for combining CRFs is Dominant Common Residuals, since it is more conservative than the other options.

	CRF 1:	Combined CRF
CRF Value (%)	50	**50.0**

Crash Severity	Rounded Societal Costs	Crash History (Total):	CRF (from above)	Crash History - Annual Avg	Crashes Saved Annually
Fatal (K)	$ 4,200,000	0	50.0	**0.00**	**0.00**
Serious Injury (A)	$ 4,200,000	0	50.0	**0.00**	**0.00**
Minor Injury (B)	$ 280,000	0	50.0	**0.00**	**0.00**
Possible/Unknown Injury (C)	$ 130,000	0	50.0	**0.00**	**0.00**
Property Damage Only (O)	$ 20,000	0	50.0	**0.00**	**0.00**

Crash Severity	Annual Societal Benefit
Fatal (K)	**$ -**
Serious Injury (A)	**$ -**
Minor Injury (B)	**$ -**
Possible/Unknown Injury (C)	**$ -**
Property Damage Only (O)	**$ -**

Total Benefits and Costs

		Implementation Cost	$ 30,000
		Present Value of Maint.	$ 6,671
Present Value Benefits (Societal Benefits)	$ -	Present Value Costs (Impl. and Maint. Costs)	$ 36,671
Present Value Net Return	$ (36,671)		
Benefit Cost Ratio	**-**		

Form continues on next page

County:	Marion	Prepared By:	TRC
Location:	G76 & IA 5	Date Prepared:	8/13/2024

No Input Necessary - No Custom Values In Use

General Customizations

No change to Crash Costs

No change to Discount Rate

No change to Maintenance Costs

Method-Specific Customizations

No change to Traffic Growth Rate

No change to Crash History

County:	Marion	Prepared By:	TRC
Location:	Orange St. & IA 5	Date Prepared:	8/13/2024
Proposed Improvements:	Destination Light		
Estimated Improvement Cost:	$ 5,000		
Inflation on Crash Costs:	4%	Annual Maintenance: (% of Improvement Cost)	2%
Discount Rate:	4%		
Estimated Service Life:	15	Annual Maintenance Cost:	$ 100

Method Choice: CRF Method

The Crash Reduction Factor (CRF) Method applies one to three CRFs to historical crashes to estimate reductions in future crashes. Crash Modification Factors (CMFs) can be converted to CRFs. For additional information, click the "Learn More" button.

Crash Reduction Factor (CRF) Method

Traffic Growth Factor:	1%
Number of CRFs:	1
Years of Crash History:	5

Combined CRF (Dominant Common Residuals Method)

Iowa DOT's preferred methodology for combining CRFs is Dominant Common Residuals, since it is more conservative than the other options.

	CRF 1:	Combined CRF
CRF Value (%)	50	**50.0**

Crash Severity	Rounded Societal Costs	Crash History (Total):	CRF (from above)	Crash History - Annual Avg	Crashes Saved Annually
Fatal (K)	$ 4,200,000	0	50.0	**0.00**	**0.00**
Serious Injury (A)	$ 4,200,000	0	50.0	**0.00**	**0.00**
Minor Injury (B)	$ 280,000	1	50.0	**0.20**	**0.10**
Possible/Unknown Injury (C)	$ 130,000	0	50.0	**0.00**	**0.00**
Property Damage Only (O)	$ 20,000	1	50.0	**0.20**	**0.10**

Crash Severity	Annual Societal Benefit
Fatal (K)	**$ -**
Serious Injury (A)	**$ -**
Minor Injury (B)	**$ 28,000**
Possible/Unknown Injury (C)	**$ -**
Property Damage Only (O)	**$ 2,000**

Total Benefits and Costs

		Implementation Cost	$ 5,000
		Present Value of Maint.	$ 1,112
Present Value Benefits (Societal Benefits)	$ 355,355	Present Value Costs (Impl. and Maint. Costs)	$ 6,112
Present Value Net Return	$ 349,243		
Benefit Cost Ratio	**58.14**		

Form continues on next page

County:	Marion	Prepared By:	TRC
Location:	Orange St. & IA 5	Date Prepared:	8/13/2024

No Input Necessary - No Custom Values In Use

General Customizations

No change to Crash Costs

No change to Discount Rate

No change to Maintenance Costs

Method-Specific Customizations

No change to Traffic Growth Rate

No change to Crash History

County:	Marion	Prepared By:	TRC
Location:	103rd Ave. & IA 14	Date Prepared:	8/13/2024
Proposed Improvements:	Destination Light		
Estimated Improvement Cost:	$ 30,000		
Inflation on Crash Costs:	4%	Annual Maintenance:	2%
Discount Rate:	4%	(% of Improvement Cost)	
Estimated Service Life:	15	Annual Maintenance Cost:	$ 600
Method Choice:	CRF Method		

The Crash Reduction Factor (CRF) Method applies one to three CRFs to historical crashes to estimate reductions in future crashes. Crash Modification Factors (CMFs) can be converted to CRFs. For additional information, click the "Learn More" button.

Crash Reduction Factor (CRF) Method

Traffic Growth Factor:	1%
Number of CRFs:	1
Years of Crash History:	5

Combined CRF (Dominant Common Residuals Method)

Iowa DOT's preferred methodology for combining CRFs is Dominant Common Residuals, since it is more conservative than the other options.

	CRF 1:	Combined CRF
CRF Value (%)	50	**50.0**

Crash Severity	Rounded Societal Costs	Crash History (Total):	CRF (from above)	Crash History - Annual Avg	Crashes Saved Annually
Fatal (K)	$ 4,200,000	0	50.0	**0.00**	**0.00**
Serious Injury (A)	$ 4,200,000	0	50.0	**0.00**	**0.00**
Minor Injury (B)	$ 280,000	0	50.0	**0.00**	**0.00**
Possible/Unknown Injury (C)	$ 130,000	0	50.0	**0.00**	**0.00**
Property Damage Only (O)	$ 20,000	0	50.0	**0.00**	**0.00**

Crash Severity	Annual Societal Benefit
Fatal (K)	**$ -**
Serious Injury (A)	**$ -**
Minor Injury (B)	**$ -**
Possible/Unknown Injury (C)	**$ -**
Property Damage Only (O)	**$ -**

Total Benefits and Costs

		Implementation Cost	$ 30,000
		Present Value of Maint.	$ 6,671
Present Value Benefits (Societal Benefits)	$ -	Present Value Costs (Impl. and Maint. Costs)	$ 36,671
Present Value Net Return	$ (36,671)		
Benefit Cost Ratio	**-**		

Form continues on next page

County:	Marion	Prepared By:	TRC
Location:	103rd Ave. & IA 14	Date Prepared:	8/13/2024

No Input Necessary - No Custom Values In Use

General Customizations

No change to Crash Costs

No change to Discount Rate

No change to Maintenance Costs

Method-Specific Customizations

No change to Traffic Growth Rate

No change to Crash History

County:	Marion	Prepared By:	TRC
Location:	IA 163 & Old Hwy 163	Date Prepared:	8/13/2024
Proposed Improvements:	Destination Light		
Estimated Improvement Cost:	$ 15,000		
Inflation on Crash Costs:	4%	Annual Maintenance:	2%
Discount Rate:	4%	(% of Improvement Cost)	
Estimated Service Life:	15	Annual Maintenance Cost:	$ 300
Method Choice:	CRF Method		

The Crash Reduction Factor (CRF) Method applies one to three CRFs to historical crashes to estimate reductions in future crashes. Crash Modification Factors (CMFs) can be converted to CRFs. For additional information, click the "Learn More" button.

Crash Reduction Factor (CRF) Method

Traffic Growth Factor:	1%
Number of CRFs:	1
Years of Crash History:	5

Combined CRF (Dominant Common Residuals Method)

Iowa DOT's preferred methodology for combining CRFs is Dominant Common Residuals, since it is more conservative than the other options.

	CRF 1:	Combined CRF
CRF Value (%)	50	**50.0**

Crash Severity	Rounded Societal Costs	Crash History (Total):	CRF (from above)	Crash History - Annual Avg	Crashes Saved Annually
Fatal (K)	$ 4,200,000	0	50.0	**0.00**	**0.00**
Serious Injury (A)	$ 4,200,000	0	50.0	**0.00**	**0.00**
Minor Injury (B)	$ 280,000	0	50.0	**0.00**	**0.00**
Possible/Unknown Injury (C)	$ 130,000	0	50.0	**0.00**	**0.00**
Property Damage Only (O)	$ 20,000	1	50.0	**0.20**	**0.10**

Crash Severity	Annual Societal Benefit
Fatal (K)	**$ -**
Serious Injury (A)	**$ -**
Minor Injury (B)	**$ -**
Possible/Unknown Injury (C)	**$ -**
Property Damage Only (O)	**$ 2,000**

Total Benefits and Costs

		Implementation Cost	$ 15,000
		Present Value of Maint.	$ 3,336
Present Value Benefits (Societal Benefits)	$ 23,690	Present Value Costs (Impl. and Maint. Costs)	$ 18,336
Present Value Net Return	$ 5,355		
Benefit Cost Ratio	**1.29**		

Form continues on next page

County:	Marion	Prepared By:	TRC
Location:	IA 163 & Old Hwy 163	Date Prepared:	8/13/2024

No Input Necessary - No Custom Values In Use

General Customizations

No change to Crash Costs

No change to Discount Rate

No change to Maintenance Costs

Method-Specific Customizations

No change to Traffic Growth Rate

No change to Crash History

County:	Marion	Prepared By:	TRC
Location:	Elk Horn & IA 163	Date Prepared:	8/13/2024
Proposed Improvements:	Destination Light		
Estimated Improvement Cost:	$ 30,000		
Inflation on Crash Costs:	4%	Annual Maintenance:	2%
Discount Rate:	4%	(% of Improvement Cost)	
Estimated Service Life:	15	Annual Maintenance Cost:	$ 600

Method Choice: CRF Method

The Crash Reduction Factor (CRF) Method applies one to three CRFs to historical crashes to estimate reductions in future crashes. Crash Modification Factors (CMFs) can be converted to CRFs. For additional information, click the "Learn More" button.

Crash Reduction Factor (CRF) Method

Traffic Growth Factor:	1%
Number of CRFs:	1
Years of Crash History:	5

Combined CRF (Dominant Common Residuals Method)

Iowa DOT's preferred methodology for combining CRFs is Dominant Common Residuals, since it is more conservative than the other options.

	CRF 1:	Combined CRF
CRF Value (%)	50	**50.0**

Crash Severity	Rounded Societal Costs	Crash History (Total):	CRF (from above)	Crash History - Annual Avg	Crashes Saved Annually
Fatal (K)	$ 4,200,000	0	50.0	**0.00**	**0.00**
Serious Injury (A)	$ 4,200,000	0	50.0	**0.00**	**0.00**
Minor Injury (B)	$ 280,000	0	50.0	**0.00**	**0.00**
Possible/Unknown Injury (C)	$ 130,000	0	50.0	**0.00**	**0.00**
Property Damage Only (O)	$ 20,000	0	50.0	**0.00**	**0.00**

Crash Severity	Annual Societal Benefit
Fatal (K)	**$ -**
Serious Injury (A)	**$ -**
Minor Injury (B)	**$ -**
Possible/Unknown Injury (C)	**$ -**
Property Damage Only (O)	**$ -**

Total Benefits and Costs

		Implementation Cost	$ 30,000
		Present Value of Maint.	$ 6,671
Present Value Benefits (Societal Benefits)	$ -	Present Value Costs (Impl. and Maint. Costs)	$ 36,671
Present Value Net Return	$ (36,671)		
Benefit Cost Ratio	**-**		

Form continues on next page

County:	Marion	Prepared By:	TRC
Location:	Elk Horn & IA 163	Date Prepared:	8/13/2024

No Input Necessary - No Custom Values In Use

General Customizations

No change to Crash Costs

No change to Discount Rate

No change to Maintenance Costs

Method-Specific Customizations

No change to Traffic Growth Rate

No change to Crash History

County:	Marion	Prepared By:	TRC
Location:	T15 & Old Hwy 92	Date Prepared:	8/13/2024
Proposed Improvements:	Destination Light		
Estimated Improvement Cost:	$ 30,000		
Inflation on Crash Costs:	4%	Annual Maintenance:	2%
Discount Rate:	4%	(% of Improvement Cost)	
Estimated Service Life:	15	Annual Maintenance Cost:	$ 600

Method Choice: CRF Method

The Crash Reduction Factor (CRF) Method applies one to three CRFs to historical crashes to estimate reductions in future crashes. Crash Modification Factors (CMFs) can be converted to CRFs. For additional information, click the "Learn More" button.

Crash Reduction Factor (CRF) Method

Traffic Growth Factor:	1%
Number of CRFs:	1
Years of Crash History:	5

Combined CRF (Dominant Common Residuals Method)

Iowa DOT's preferred methodology for combining CRFs is Dominant Common Residuals, since it is more conservative than the other options.

	CRF 1:	Combined CRF
CRF Value (%)	50	**50.0**

Crash Severity	Rounded Societal Costs	Crash History (Total):	CRF (from above)	Crash History - Annual Avg	Crashes Saved Annually
Fatal (K)	$ 4,200,000	0	50.0	**0.00**	**0.00**
Serious Injury (A)	$ 4,200,000	0	50.0	**0.00**	**0.00**
Minor Injury (B)	$ 280,000	0	50.0	**0.00**	**0.00**
Possible/Unknown Injury (C)	$ 130,000	0	50.0	**0.00**	**0.00**
Property Damage Only (O)	$ 20,000	1	50.0	**0.20**	**0.10**

Crash Severity	Annual Societal Benefit
Fatal (K)	**$ -**
Serious Injury (A)	**$ -**
Minor Injury (B)	**$ -**
Possible/Unknown Injury (C)	**$ -**
Property Damage Only (O)	**$ 2,000**

Total Benefits and Costs

		Implementation Cost	$ 30,000
		Present Value of Maint.	$ 6,671
Present Value Benefits (Societal Benefits)	$ 23,690	Present Value Costs (Impl. and Maint. Costs)	$ 36,671
Present Value Net Return	$ (12,981)		
Benefit Cost Ratio	**0.65**		

Form continues on next page

County:	Marion	Prepared By:	TRC
Location:	T15 & Old Hwy 92	Date Prepared:	8/13/2024

No Input Necessary - No Custom Values In Use

General Customizations

No change to Crash Costs

No change to Discount Rate

No change to Maintenance Costs

Method-Specific Customizations

No change to Traffic Growth Rate

No change to Crash History

County:	Marion	Prepared By:	TRC
Location:	T15 at G46	Date Prepared:	8/13/2024
Proposed Improvements:	Destination Light		
Estimated Improvement Cost:	$ 30,000		
Inflation on Crash Costs:	4%	Annual Maintenance:	2%
Discount Rate:	4%	(% of Improvement Cost)	
Estimated Service Life:	15	Annual Maintenance Cost:	$ 600

Method Choice: CRF Method

The Crash Reduction Factor (CRF) Method applies one to three CRFs to historical crashes to estimate reductions in future crashes. Crash Modification Factors (CMFs) can be converted to CRFs. For additional information, click the "Learn More" button.

Crash Reduction Factor (CRF) Method

Traffic Growth Factor:	1%
Number of CRFs:	1
Years of Crash History:	5

Combined CRF (Dominant Common Residuals Method)

Iowa DOT's preferred methodology for combining CRFs is Dominant Common Residuals, since it is more conservative than the other options.

	CRF 1:	Combined CRF
CRF Value (%)	50	**50.0**

Crash Severity	Rounded Societal Costs	Crash History (Total):	CRF (from above)	Crash History - Annual Avg	Crashes Saved Annually
Fatal (K)	$ 4,200,000	0	50.0	**0.00**	**0.00**
Serious Injury (A)	$ 4,200,000	0	50.0	**0.00**	**0.00**
Minor Injury (B)	$ 280,000	0	50.0	**0.00**	**0.00**
Possible/Unknown Injury (C)	$ 130,000	0	50.0	**0.00**	**0.00**
Property Damage Only (O)	$ 20,000	0	50.0	**0.00**	**0.00**

Crash Severity	Annual Societal Benefit
Fatal (K)	**$ -**
Serious Injury (A)	**$ -**
Minor Injury (B)	**$ -**
Possible/Unknown Injury (C)	**$ -**
Property Damage Only (O)	**$ -**

Total Benefits and Costs

		Implementation Cost	$ 30,000
		Present Value of Maint.	$ 6,671
Present Value Benefits (Societal Benefits)	$ -	Present Value Costs (Impl. and Maint. Costs)	$ 36,671
Present Value Net Return	$ (36,671)		
Benefit Cost Ratio	**-**		

Form continues on next page

County:	Marion	Prepared By:	TRC
Location:	T15 at G46	Date Prepared:	8/13/2024

No Input Necessary - No Custom Values In Use

General Customizations

No change to Crash Costs

No change to Discount Rate

No change to Maintenance Costs

Method-Specific Customizations

No change to Traffic Growth Rate

No change to Crash History

County:	Marion	Prepared By:	TRC
Location:	T15 at Jewell	Date Prepared:	8/13/2024
Proposed Improvements:	Destination Light		
Estimated Improvement Cost:	$ 30,000		
Inflation on Crash Costs:	4%	Annual Maintenance:	2%
Discount Rate:	4%	(% of Improvement Cost)	
Estimated Service Life:	15	Annual Maintenance Cost:	$ 600

Method Choice: CRF Method

The Crash Reduction Factor (CRF) Method applies one to three CRFs to historical crashes to estimate reductions in future crashes. Crash Modification Factors (CMFs) can be converted to CRFs. For additional information, click the "Learn More" button.

Crash Reduction Factor (CRF) Method

Traffic Growth Factor:	1%
Number of CRFs:	1
Years of Crash History:	5

Combined CRF (Dominant Common Residuals Method)

Iowa DOT's preferred methodology for combining CRFs is Dominant Common Residuals, since it is more conservative than the other options.

	CRF 1:	Combined CRF
CRF Value (%)	50	**50.0**

Crash Severity	Rounded Societal Costs	Crash History (Total):	CRF (from above)	Crash History - Annual Avg	Crashes Saved Annually
Fatal (K)	$ 4,200,000	0	50.0	**0.00**	**0.00**
Serious Injury (A)	$ 4,200,000	0	50.0	**0.00**	**0.00**
Minor Injury (B)	$ 280,000	0	50.0	**0.00**	**0.00**
Possible/Unknown Injury (C)	$ 130,000	0	50.0	**0.00**	**0.00**
Property Damage Only (O)	$ 20,000	0	50.0	**0.00**	**0.00**

Crash Severity	Annual Societal Benefit
Fatal (K)	**$ -**
Serious Injury (A)	**$ -**
Minor Injury (B)	**$ -**
Possible/Unknown Injury (C)	**$ -**
Property Damage Only (O)	**$ -**

Total Benefits and Costs

		Implementation Cost	$ 30,000
		Present Value of Maint.	$ 6,671
Present Value Benefits (Societal Benefits)	$ -	Present Value Costs (Impl. and Maint. Costs)	$ 36,671
Present Value Net Return	$ (36,671)		
Benefit Cost Ratio	**-**		

Form continues on next page

County:	Marion	Prepared By:	TRC
Location:	T15 at Jewell	Date Prepared:	8/13/2024

No Input Necessary - No Custom Values In Use

General Customizations

No change to Crash Costs

No change to Discount Rate

No change to Maintenance Costs

Method-Specific Customizations

No change to Traffic Growth Rate

No change to Crash History

County:	Marion	Prepared By:	TRC
Location:	G46 at 198th Pl.	Date Prepared:	8/13/2024
Proposed Improvements:	Destination Light		
Estimated Improvement Cost:	$ 30,000		
Inflation on Crash Costs:	4%	Annual Maintenance:	2%
Discount Rate:	4%	(% of Improvement Cost)	
Estimated Service Life:	15	Annual Maintenance Cost:	$ 600

Method Choice: CRF Method

The Crash Reduction Factor (CRF) Method applies one to three CRFs to historical crashes to estimate reductions in future crashes. Crash Modification Factors (CMFs) can be converted to CRFs. For additional information, click the "Learn More" button.

Crash Reduction Factor (CRF) Method

Traffic Growth Factor:	1%
Number of CRFs:	1
Years of Crash History:	5

Combined CRF (Dominant Common Residuals Method)

Iowa DOT's preferred methodology for combining CRFs is Dominant Common Residuals, since it is more conservative than the other options.

	CRF 1:	Combined CRF
CRF Value (%)	50	**50.0**

Crash Severity	Rounded Societal Costs	Crash History (Total):	CRF (from above)	Crash History - Annual Avg	Crashes Saved Annually
Fatal (K)	$ 4,200,000	0	50.0	**0.00**	**0.00**
Serious Injury (A)	$ 4,200,000	0	50.0	**0.00**	**0.00**
Minor Injury (B)	$ 280,000	0	50.0	**0.00**	**0.00**
Possible/Unknown Injury (C)	$ 130,000	0	50.0	**0.00**	**0.00**
Property Damage Only (O)	$ 20,000	0	50.0	**0.00**	**0.00**

Crash Severity	Annual Societal Benefit
Fatal (K)	**$ -**
Serious Injury (A)	**$ -**
Minor Injury (B)	**$ -**
Possible/Unknown Injury (C)	**$ -**
Property Damage Only (O)	**$ -**

Total Benefits and Costs

		Implementation Cost	$ 30,000
		Present Value of Maint.	$ 6,671
Present Value Benefits (Societal Benefits)	$ -	Present Value Costs (Impl. and Maint. Costs)	$ 36,671
Present Value Net Return	$ (36,671)		
Benefit Cost Ratio	**-**		

Form continues on next page

County:	Marion	Prepared By:	TRC
Location:	G46 at 198th Pl.	Date Prepared:	8/13/2024

No Input Necessary - No Custom Values In Use

General Customizations

No change to Crash Costs

No change to Discount Rate

No change to Maintenance Costs

Method-Specific Customizations

No change to Traffic Growth Rate

No change to Crash History

Rev. 07/23

Application for SITE-SPECIFIC TSIP FUNDS

GENERAL INFORMATION **DATE:** 8/15/2024

Location / Title of Project K-42 From Hwy 3 north 1 mile

Applicant Plymouth County

Contact Person Thomas Rohe Title County Engineer

Complete Mailing Address P.O. Box 1227

Le Mars, Iowa 51031

Phone 712-546-4559 (Area Code) E-Mail trohe@plymouthcountyiowa.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) NA

Contact Person _____ Title _____

Complete Mailing Address _____

_____

Phone _____ (Area Code) E-Mail _____

PLEASE COMPLETE THE FOLLOWING PROJECT INFORMATION:

Funding Amount

Total Safety Cost	$	915,000
Total Project Cost	$	1,151300
Safety Funds Requested	**$**	**500,000**

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
		☐	☐		
		☐	☐		

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 Plymouth County

Signed: Don Kass 8/13/24

Signature Date Signed

Don Kass: Chm,: Board of Supervisors

Printed Name

Attest: Stacey Feldman 8/13/2024

Signature Date Signed

Stacey Feldman, Auditor

Printed Name

B: Narrative

K-42 From Hwy 3 North 1 Mile

This section of roadway was graded in the early 1950's with a 28 ft. top and 2:1 foreslopes on a 66 ft. right of way. The roadway was then paved in 1955 as an asphalt road. The grade line of this roadway follows the existing topography and vertical curve designs are essentially at 30-45 mph.

This mile of roadway is built on 66 ft. right of way and has a 22 ft. wide pavement surface. The shoulders are only 3 ft. wide. This roadway services the Town of Brunsville and the north central area of Plymouth County. Our County is heavily agricultural with grain elevators at Brunsville and Craig in this area and many hog confinements in the central part of the county. In addition K-42 is a major north/south corridor moving grain to the ethanol plant at Merrill and also serves as a north/south route for traffic connecting onto Hwy 75 and servicing markets to the south in Hinton and Sioux City.

The main safety concern on this mile of roadway is the narrow shoulder width on a narrow right of way. The traffic is approximately 1090 VPD(2023) and the issue we have are the edge ruts that develop because of the 11 ft. pavement and the narrow shoulders. Our program includes an overlay on this roadway in 2026 and it is our desire to place a 2-3 ft. paved shoulder on this road to accommodate the truck traffic, wider agricultural traffic and prevention of edge ruts.

The proposed project will reconstruct the shoulders, foreslopes , ditch bottoms and backslopes. The shoulder width will be widened from 3 ft. to 8 ft. The foreslopes will be flattened from 2:1 to 3:1. The design would also consider going to a 4:1 foreslope and right of way acquisition will be a factor in this decision. Approximately 2-3 ft. of the shoulder will be paved with the resurfacing in 2026 providing a wider pavement width that will accommodate the agricultural and truck traffic.

There are also three box culverts on this mile. These structures will be widened which will provide clear zone meeting todays standards.

The overlay of this roadway will be placed in 2026 and the design is for a 7 inch concrete overlay with 2-3 ft. paved shoulders. Although this overlay is not part of the shoulder grading on this mile, I would hope that some consideration be given for the safety aspect of a partially paved shoulder.

C: Cost
The estimated cost of this project is $ 1,151,300 of which $ 500,000 is being requested for the safety work associated with the project. A breakdown can be seen on the spread sheet on exhibit "C".

D: Time Schedule
This project, if approved, would be let in the spring/summer of 2025 with construction during the 2025 construction season.

E: Map
See the enclosed map showing roadway location

F: Color Pictures
Enclosed

G: Plan View
Plan profile sheet is enclosed. Additional right of way of will need to be acquired for the construction of this project. See Exhibit "G".

H: Aerial Photo of the site as per Exhibit "H".

I: Crash Summary Report – Exhibit "I".

J: Recent Traffic Volumes – Exhibit "J".
A map showing the traffic count of this roadway by IDOT for 2015 is enclosed.

K: Signals - NA

L: B/C Worksheet – Exhibit "L"

PLYMOUTH COUNTY

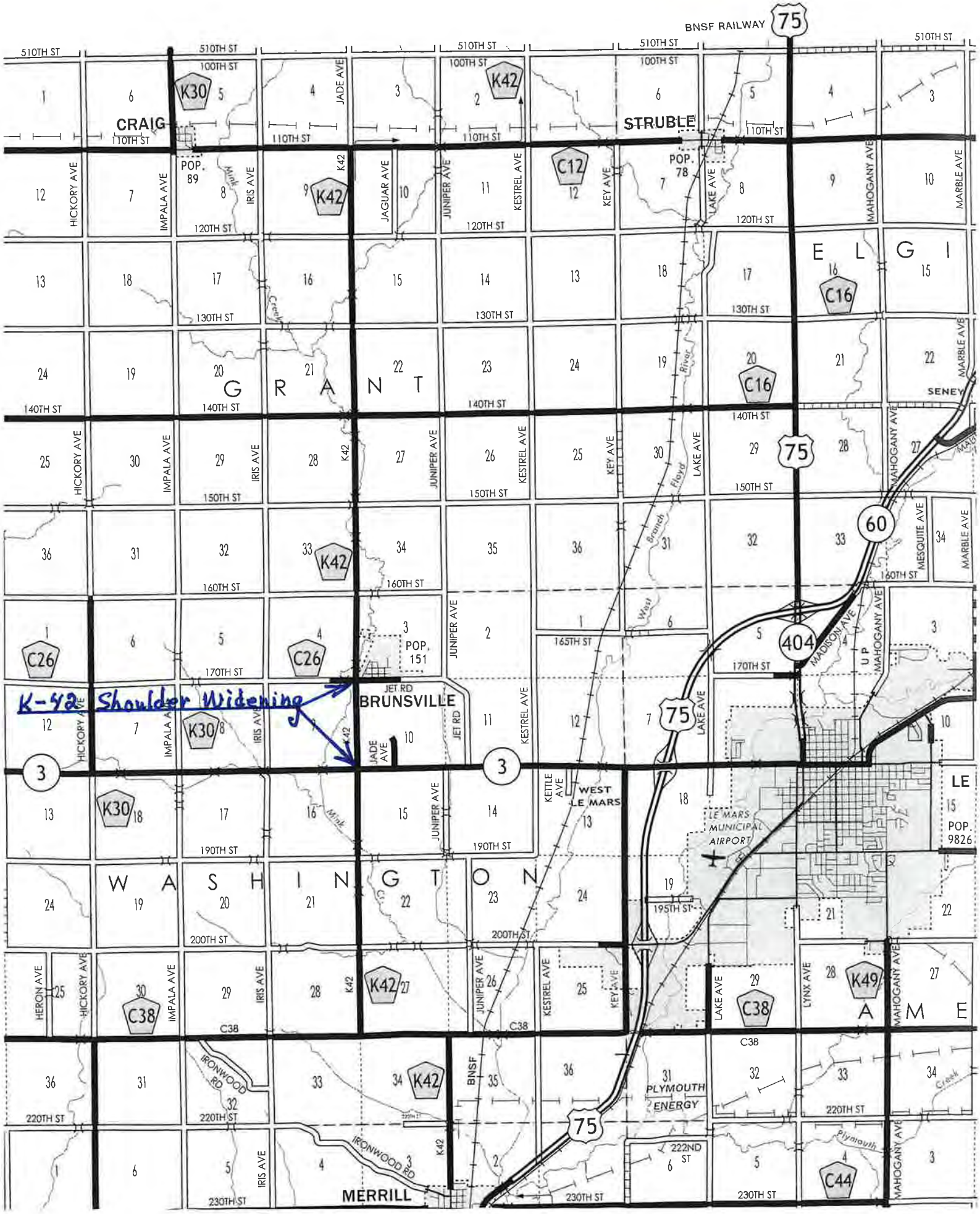
ENGINEER'S ESTIMATE

Kind of Work	Shoulder Widening		**County**	PLYMOUTH				
Proj	**LFM-Shoulders 2025**	K-42 From Hwy 3 noth 1 mile		**Date**	8/13/2024			
							Safety Work	
Item No.	**Item**	**Quantity**	**Units**	**Unit Price**	**Amount**		**Quantity**	**Amount**
1	EXCAV. CL. 10, RDWY & BORROW	81000	C.Y.	$10.00	$ 810,000.00		81000	810,000.00
2	Topsoil- Strip, Salvage & Respread	7600	C.Y.	$10.00	$ 76,000.00			
3	TRAFFIC CONTROL	1	LS	$25,000.00	$ 25,000.00			
4	Mobilization	1	LS	$ 20,000.00	$ 20,000.00			
5	Silt Fence	1200	LF	$4.00	$ 4,800.00			
6	Mobilization -Erosion Control	1	Each	$500.00	$ 500.00			
7	Right of Way	5	Ac	$22,000.00	$ 110,000.00			
8	Culvert Extensions	3	Each	$35,000.00	$ 105,000.00		3	105,000.00
9								
10								
11								
12								
13				TOTAL	$ 1,151,300.00			$ 915,000.00
14					Project Total			
15								
16							Amount Requested	
17				Safety Shoulder Widening				**$500,000.00**

E

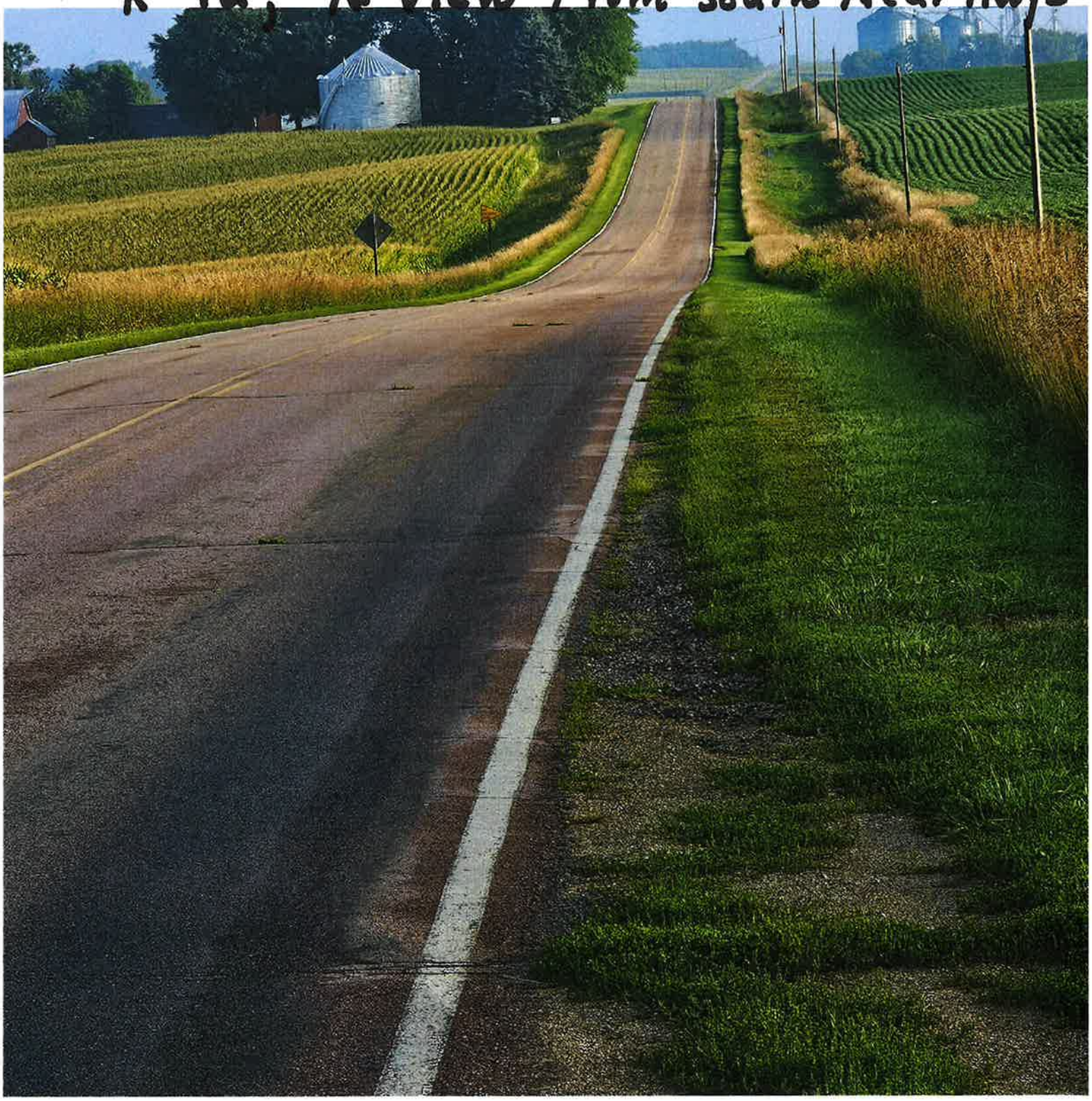
R-46W

R-45W


BNSF RAILWAY
75
510TH ST
100TH ST
110TH ST
120TH ST
130TH ST
140TH ST
150TH ST
160TH ST
165TH ST
170TH ST
190TH ST
195TH ST
200TH ST
220TH ST
222ND ST
230TH ST
CRAIG
POP. 89
STRUBLE
POP. 78
ELGI
GRANT
SENEY
WASHINGTON
BRUNSVILLE
JET RD
WEST LE MARS
LE MARS MUNICIPAL AIRPORT
LE
POP. 9826
AME
PLYMOUTH ENERGY
MERRILL
K-42 Shoulder Widening
K30
K42
C12
C16
C26
C38
K49
C44
3
60
404
HICKORY AVE
IMPALA AVE
IRIS AVE
JADE AVE
JAGUAR AVE
JUNIPER AVE
KESTREL AVE
KEY AVE
LAKE AVE
MAHOGANY AVE
MARBLE AVE
MESQUITE AVE
MADISON AVE
UP
KETTLE AVE
HERON AVE
LYNX AVE
IRONWOOD RD
BNSF
Mink
Floyd
West Branch
Plymouth Creek

F.

K-42, N View From South Near Hwy 3

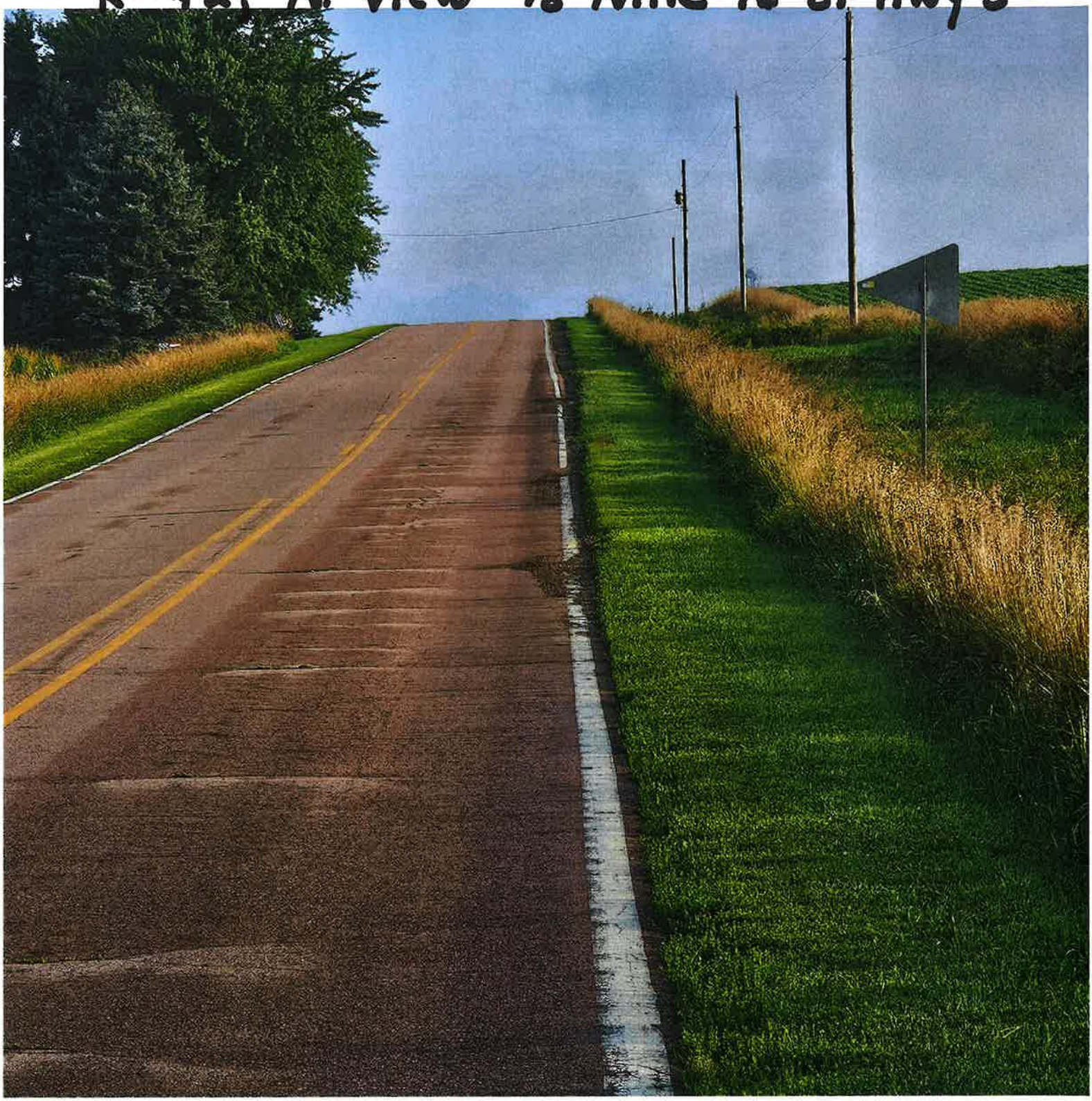


F.

K-42, N. View 1/4 Mile N. of Hwy 3

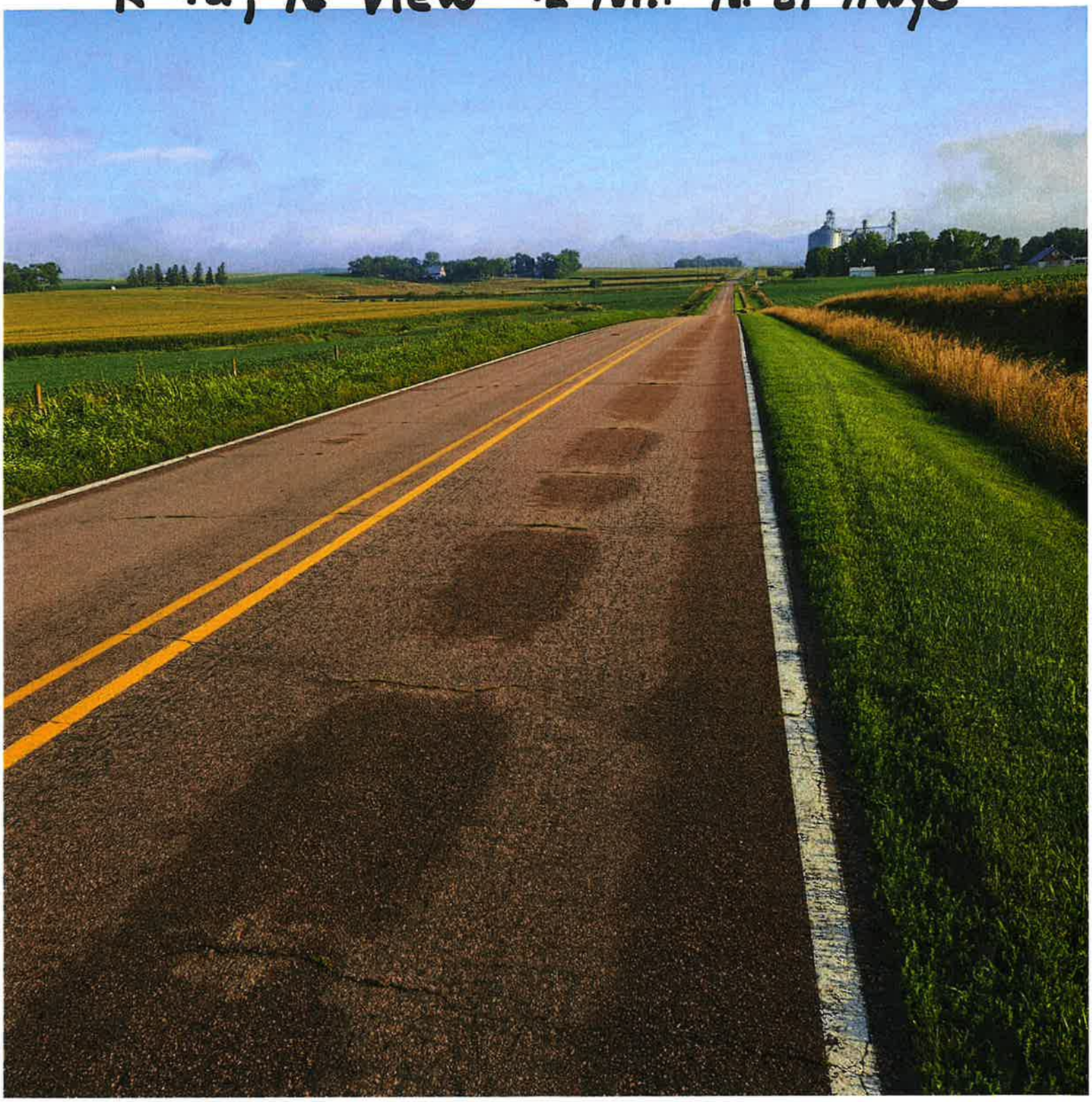
F.

K-42, N. View 3/8 Mile N of Hwy 3



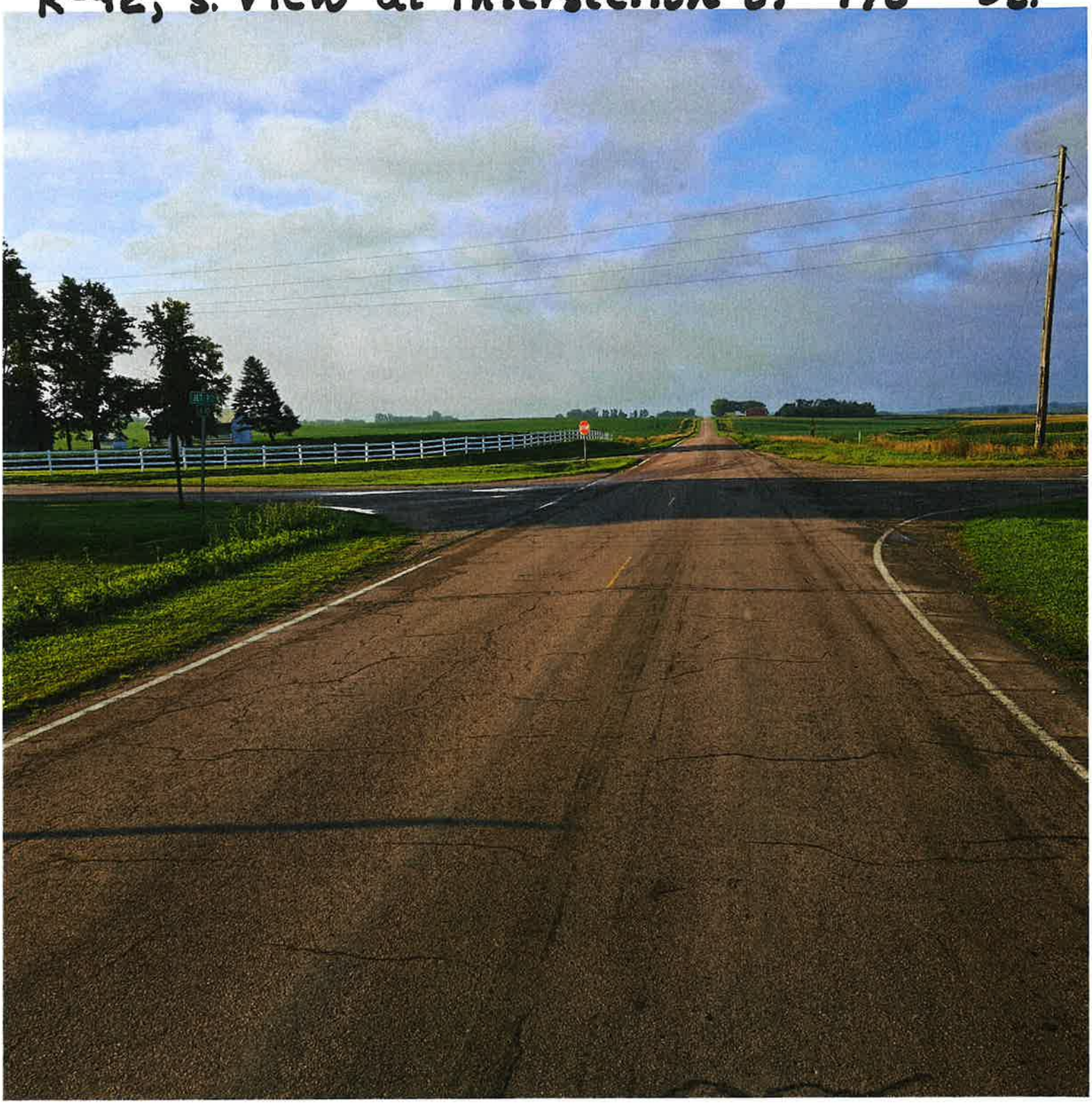
F.

K-42, N View 1/2 Mi. N. of Hwy3



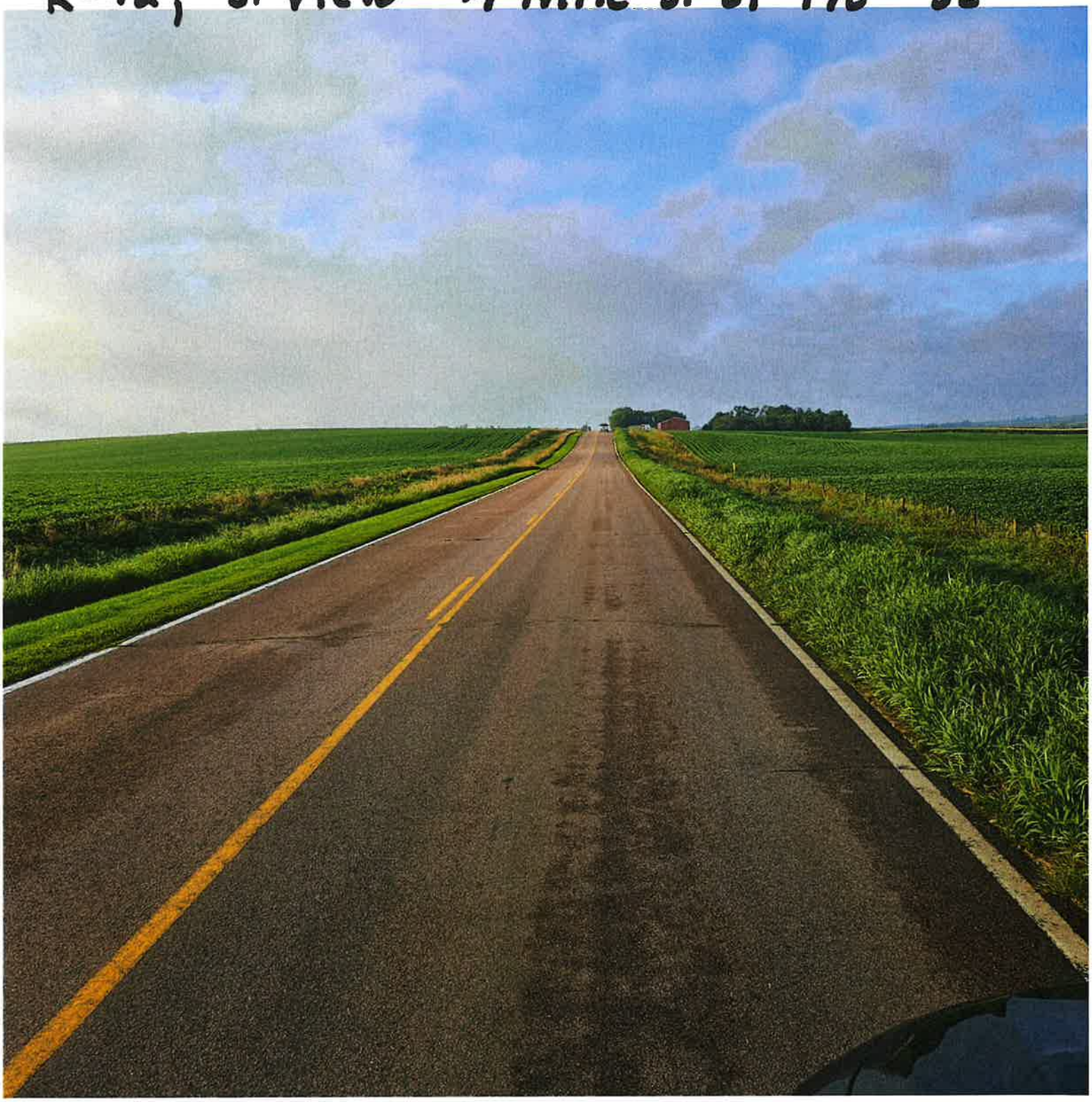
F.

K-42, S. View at intersection of 170th St.



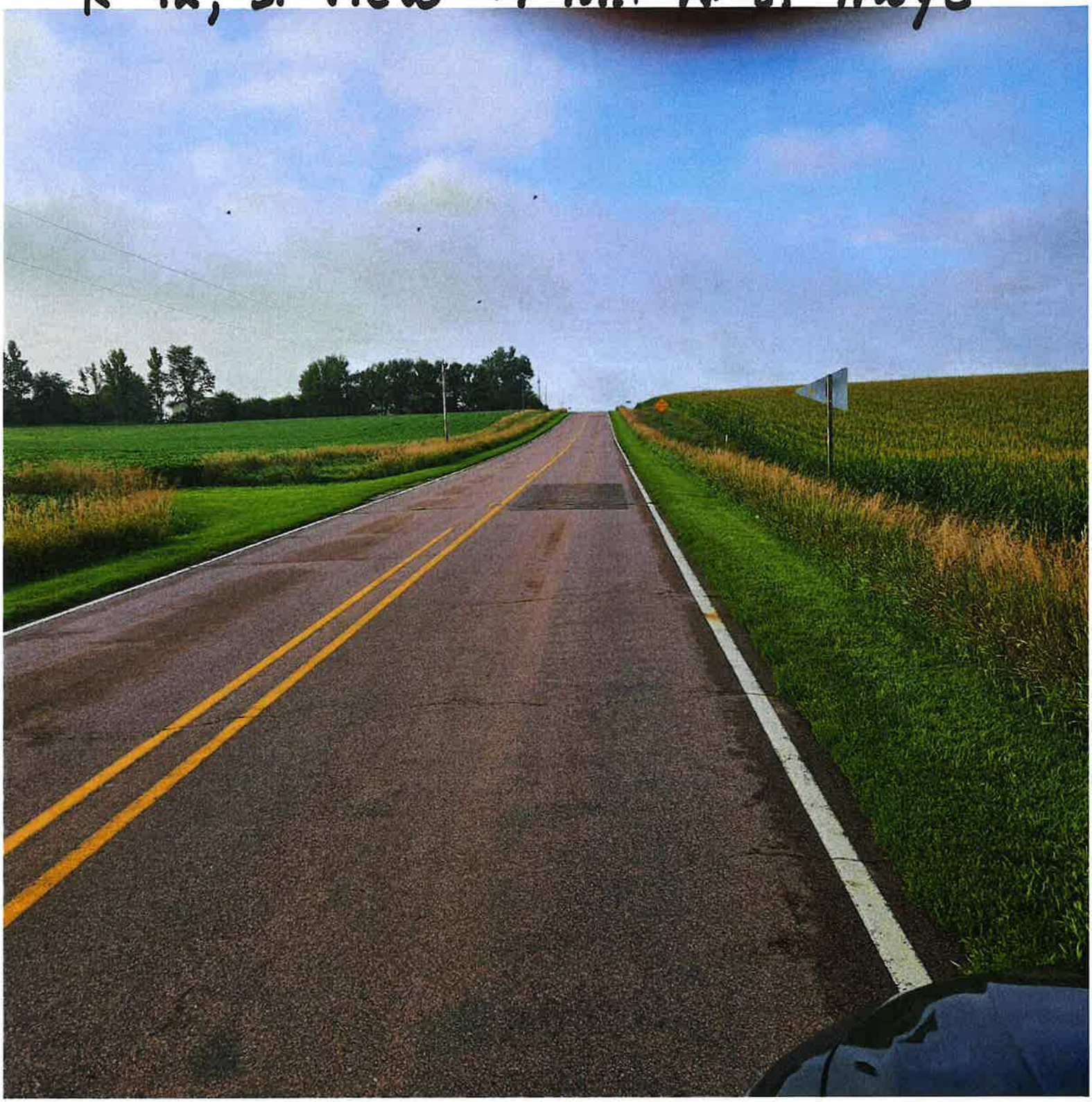
F.

K-42, S. View 1/4 Mile S. of 170th St



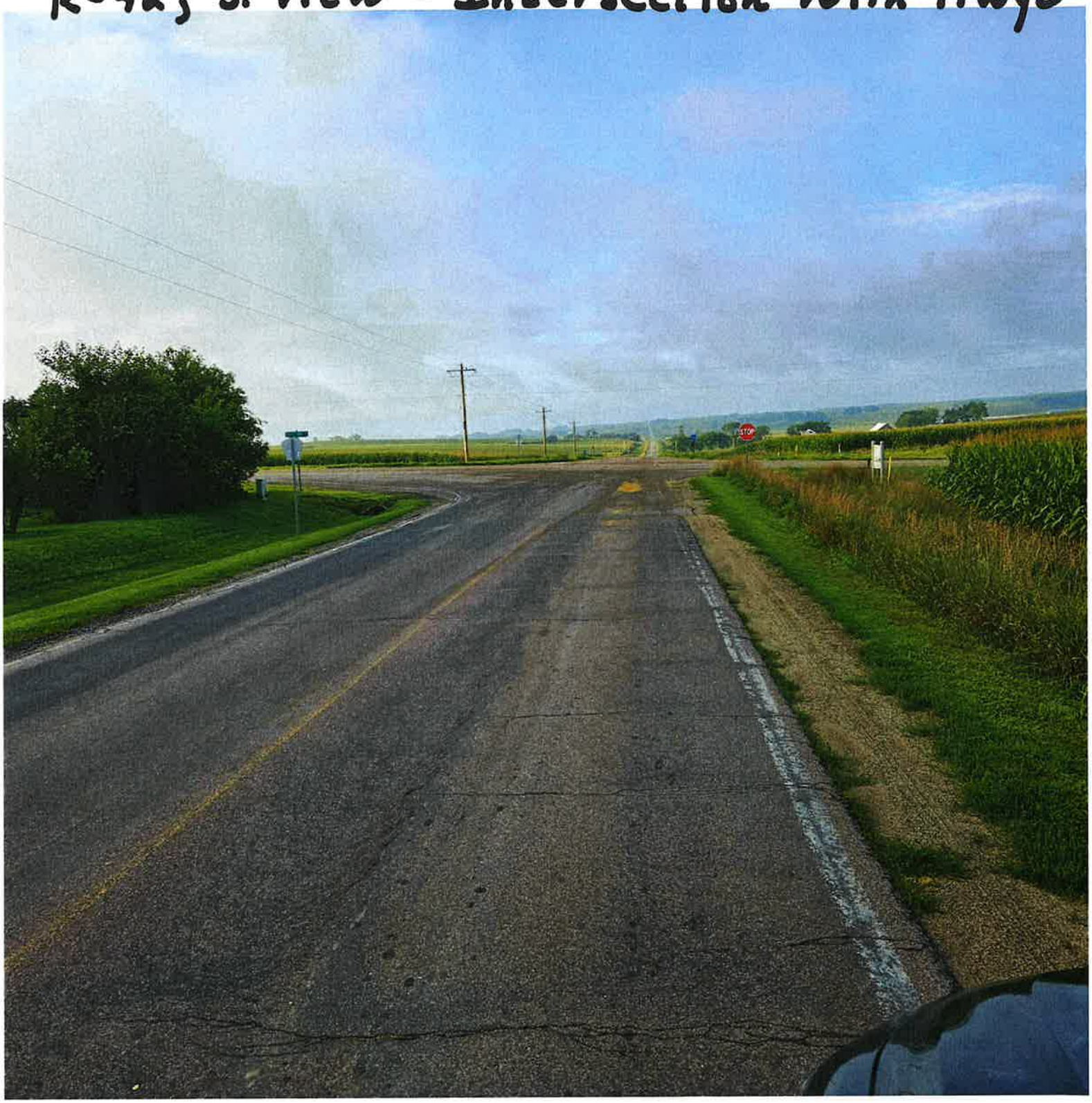
F.

K-42, S. View 1/4 Mi. N. of Hwy 3

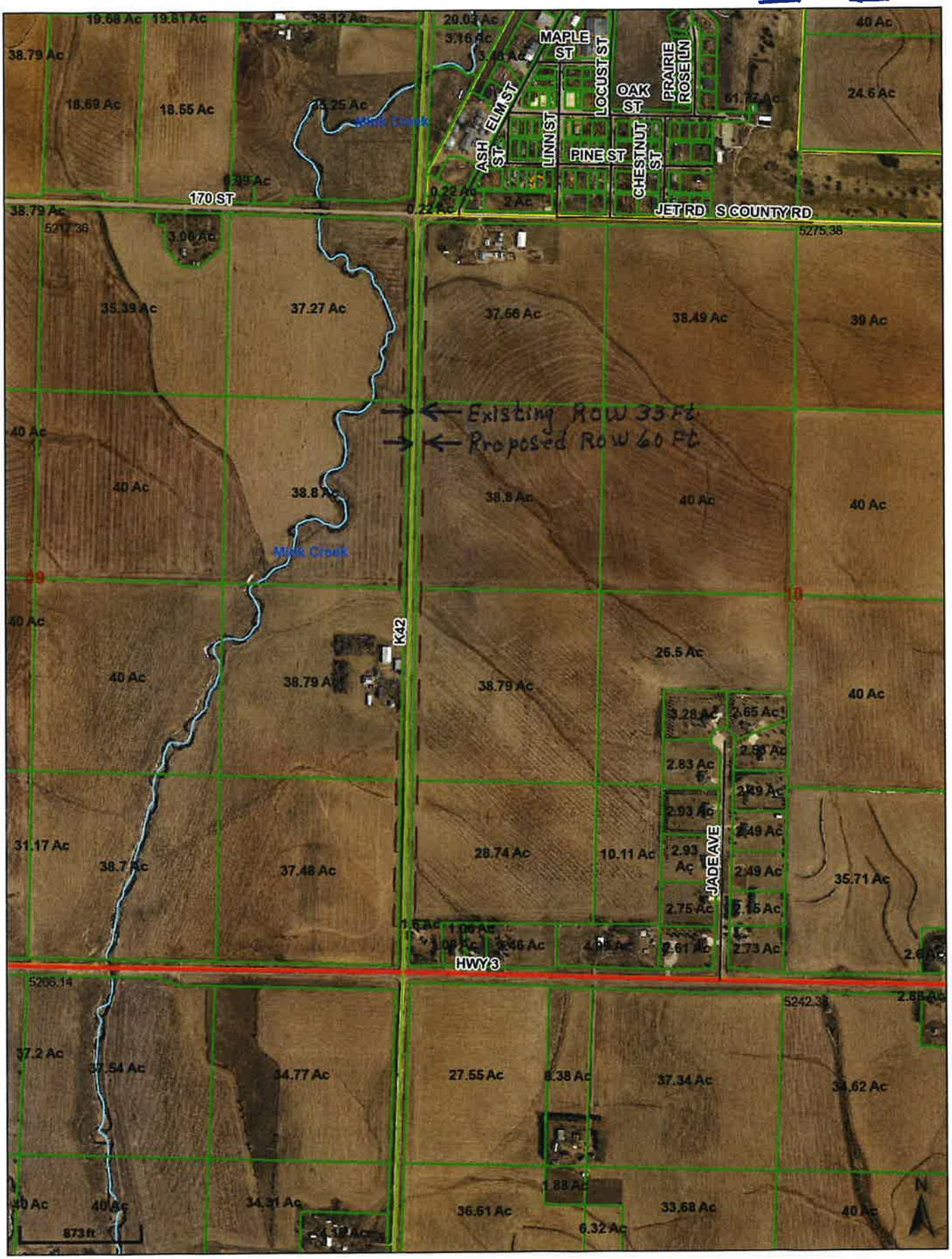


F.

K-42, S. View - Intersection With Hwy3



G. H.


MAPLE ST
LOCUST ST
OAK ST
PRAIRIE ROSE LN
ELM ST
ASH ST
LINN ST
PINE ST
CHESTNUT ST
170 ST
JET RD
S COUNTY RD
Milk Creek
K42
JADE AVE
HWY 3
Existing ROW 33 Ft.
Proposed ROW 60 Ft.
873 ft
N

I.

Crash Detail Report

20241402315	**01/09/2024 11:00**	K42 AND IA 3 E
County: Plymouth	**City:**	

Major Cause: Ran stop sign

Roadway Type: Intersection: Four-way intersection

Severity:: Suspected Minor Injury Crash — **Manner of Crash:** Broadside (front to side)

Fatalities: 0 — **Surface Conditions:** Snow

Major Injuries: 0 — **Light Conditions:** Daylight

Minor Injuries: 1 — **Weather Conditions:** Cloudy

Possible Injuries: 0 — **Drug/Alc Involved:** None Indicated

Severity:: Suspected Minor Injury Crash — **Property Damage:** $215,000 — **Number of Vehicles:** 2

	Unit 1	Unit 2	Unit
Init Trav Dir:	South	West	
Veh Action:	Movement essentially straight	Movement essentially straight	
Configuration:	Tractor/semi-trailer	Tractor/semi-trailer	
Driver Age:	37	48	
Driver Gender:	M	M	
Driver Cond:	Apparently normal	Apparently normal	
Driver Contr 1:	Ran stop sign	No improper action	
Driver Contr 2:	Driving too fast for conditions	Not reported	
Fixed Object:	None (no fixed object struck)	None (no fixed object struck)	

20241429477	**06/26/2024 15:56**	K42 AND IA 3 E
County: Plymouth	**City:**	

Major Cause: Ran stop sign

Roadway Type: Intersection: Four-way intersection

Severity:: Property Damage Only — **Manner of Crash:** Broadside (front to side)

Fatalities: 0 — **Surface Conditions:** Dry

Major Injuries: 0 — **Light Conditions:** Daylight

Minor Injuries: 0 — **Weather Conditions:** Clear

Possible Injuries: 0 — **Drug/Alc Involved:** None Indicated

Severity:: Property Damage Only — **Property Damage:** $27,000 — **Number of Vehicles:** 2

	Unit 1	Unit 2	Unit
Init Trav Dir:	West	North	
Veh Action:	Movement essentially straight	Movement essentially straight	
Configuration:	Four-tire light truck (pick-up)	Passenger car	
Driver Age:	38	75	
Driver Gender:	F	M	
Driver Cond:	Apparently normal	Apparently normal	
Driver Contr 1:	No improper action	Ran stop sign	
Driver Contr 2:	Not reported	Not reported	
Fixed Object:	None (no fixed object struck)	None (no fixed object struck)	

I.

Crash Detail Report

20221304493	**06/10/2022 15:14**	K42 AND IA 3 E
County: Plymouth	City:	

Major Cause: Ran stop sign

Roadway Type: Intersection: Four-way intersection

Severity:: Property Damage Only **Manner of Crash:** Broadside (front to side)

Fatalities: 0 **Surface Conditions:** Dry

Major Injuries: 0 **Light Conditions:** Daylight

Minor Injuries: 0 **Weather Conditions:** Clear

Possible Injuries: 0 **Drug/Alc Involved:** None Indicated

Severity:: Property Damage Only **Property Damage:** $25,000 **Number of Vehicles:** 2

	Unit 1	Unit 2	Unit
Init Trav Dir:	West	South	
Veh Action:	Movement essentially straight	Turning left	
Configuration:	Tractor/semi-trailer	Passenger car	
Driver Age:	31	86	
Driver Gender:	M	M	
Driver Cond:	Apparently normal	Apparently normal	
Driver Contr 1:	Swerved to avoid: vehicle, object,	Ran stop sign	
Driver Contr 2:	Not reported	FTYROW: From stop sign	
Fixed Object:	None (no fixed object struck)	None (no fixed object struck)	

20221307617	**06/29/2022 08:17**	K-42/ JET RD(COUNTY RD)
County: Plymouth	City:	

Major Cause: FTYROW: From stop sign

Roadway Type: Intersection: Four-way intersection

Severity:: Possible/Unknown Injury Crash **Manner of Crash:** Broadside (front to side)

Fatalities: 0 **Surface Conditions:** Dry

Major Injuries: 0 **Light Conditions:** Daylight

Minor Injuries: 0 **Weather Conditions:** Clear

Possible Injuries: 1 **Drug/Alc Involved:** None Indicated

Severity:: Possible/Unknown Injury Crash **Property Damage:** $50,000 **Number of Vehicles:** 2

	Unit 1	Unit 2	Unit
Init Trav Dir:	West	South	
Veh Action:	Turning left	Movement essentially straight	
Configuration:	Tractor/semi-trailer	Sport utility vehicle	
Driver Age:	64	31	
Driver Gender:	M	F	
Driver Cond:	Apparently normal	Apparently normal	
Driver Contr 1:	FTYROW: From stop sign	No improper action	
Driver Contr 2:	Not reported	Not reported	
Fixed Object:	None (no fixed object struck)	Ditch	

I.

Crash Detail Report

20191102041	03/01/2019 17:12	K042/K42 AND 170TH ST AND JET RD
County: Plymouth	City:	

Major Cause: FTYROW: From stop sign

Roadway Type: Intersection: Four-way intersection

Severity:: Property Damage Only **Manner of Crash:** Broadside (front to side)

Fatalities: 0 **Surface Conditions:** Dry

Major Injuries: 0 **Light Conditions:** Daylight

Minor Injuries: 0 **Weather Conditions:** Cloudy

Possible Injuries: 0 **Drug/Alc Involved:** None Indicated

Severity:: Property Damage Only **Property Damage:** $13,000 **Number of Vehicles:** 2

	Unit	Unit	Unit
Init Trav Dir:			
Veh Action:			
Configuration:			
Driver Age:			
Driver Gender:			
Driver Cond:			
Driver Contr 1:			
Driver Contr 2:			
Fixed Object:			

20191126466	07/31/2019 18:07	K042/K42 MEASURING 15 FEET SOUTH FROM K042/K42 AND 170TH ST AND JET RD
County: Plymouth	City:	

Major Cause: Ran stop sign

Roadway Type: Intersection: Four-way intersection

Severity:: Possible/Unknown Injury Crash **Manner of Crash:** Broadside (front to side)

Fatalities: 0 **Surface Conditions:** Dry

Major Injuries: 0 **Light Conditions:** Daylight

Minor Injuries: 0 **Weather Conditions:** Clear

Possible Injuries: 2 **Drug/Alc Involved:** None Indicated

Severity:: Possible/Unknown Injury Crash **Property Damage:** $5,177 **Number of Vehicles:** 2

	Unit	Unit	Unit
Init Trav Dir:			
Veh Action:			
Configuration:			
Driver Age:			
Driver Gender:			
Driver Cond:			
Driver Contr 1:			
Driver Contr 2:			
Fixed Object:			

I.

Crash Detail Report

20171019228	12/03/2017 21:10	STATE 3/IOWA 3 MEASURING 200 FEET WEST FROM K042/K42 AND STATE 3/IOWA 3
County: Plymouth	City:	

Major Cause: Animal

Roadway Type: Feature: Non-junction/no special feature

Severity:: Property Damage Only — **Manner of Crash:** Non-collision (single vehicle)

Fatalities: 0 — **Surface Conditions:** Dry

Major Injuries: 0 — **Light Conditions:** Dark - roadway not lighted

Minor Injuries: 0 — **Weather Conditions:** Clear

Possible Injuries: 0 — **Drug/Alc Involved:** None Indicated

Severity:: Property Damage Only — **Property Damage:** $3,000 — **Number of Vehicles:** 1

	Unit	Unit	Unit
Init Trav Dir:			
Veh Action:			
Configuration:			
Driver Age:			
Driver Gender:			
Driver Cond:			
Driver Contr 1:			
Driver Contr 2:			
Fixed Object:			

20181058333	06/17/2018 05:50	K042/K42 AND 170TH ST AND JET RD MEASURING 1649 FEET SOUTH FROM K042/K42
County: Plymouth	City:	

Major Cause: Animal

Roadway Type: Not reported

Severity:: Property Damage Only — **Manner of Crash:** Not reported

Fatalities: 0 — **Surface Conditions:** Not reported

Major Injuries: 0 — **Light Conditions:** Not reported

Minor Injuries: 0 — **Weather Conditions:** Not reported

Possible Injuries: 0 — **Drug/Alc Involved:** None Indicated

Severity:: Property Damage Only — **Property Damage:** $4,500 — **Number of Vehicles:** 1

	Unit	Unit	Unit
Init Trav Dir:			
Veh Action:			
Configuration:			
Driver Age:			
Driver Gender:			
Driver Cond:			
Driver Contr 1:			
Driver Contr 2:			
Fixed Object:			

I.

Crash Detail Report

2015891965	**11/27/2015 14:00**	K042/K42 MEASURING 2161 FEET NORTH FROM STATE 3/IOWA 3 AND K042/K42
County: Plymouth	**City:**	

Major Cause: Ran off road - right

Roadway Type: Feature: Non-junction/no special feature

Severity:: Possible/Unknown Injury Crash — **Manner of Crash:** Non-collision (single vehicle)

Fatalities: 0 — **Surface Conditions:** Ice/frost

Major Injuries: 0 — **Light Conditions:** Daylight

Minor Injuries: 0 — **Weather Conditions:** Clear

Possible Injuries: 1 — **Drug/Alc Involved:** None Indicated

Severity:: Possible/Unknown Injury Crash — **Property Damage:** $1,750 — **Number of Vehicles:** 1

	Unit 1	Unit	Unit
Init Trav Dir:	South		
Veh Action:	Movement essentially straight		
Configuration:	Sport utility vehicle		
Driver Age:	42		
Driver Gender:	F		
Driver Cond:	Unknown		
Driver Contr 1:	Lost control		
Driver Contr 2:	Not reported		
Fixed Object:	Tree		

20160949742	**11/02/2016 10:45**	K042/K42 MEASURING 3303 FEET NORTH FROM STATE 3/IOWA 3 AND K042/K42
County: Plymouth	**City:**	

Major Cause: Followed too close

Roadway Type: Feature: Non-junction/no special feature

Severity:: Possible/Unknown Injury Crash — **Manner of Crash:** Sideswipe (same direction)

Fatalities: 0 — **Surface Conditions:** Dry

Major Injuries: 0 — **Light Conditions:** Daylight

Minor Injuries: 0 — **Weather Conditions:** Cloudy

Possible Injuries: 1 — **Drug/Alc Involved:** None Indicated

Severity:: Possible/Unknown Injury Crash — **Property Damage:** $18,000 — **Number of Vehicles:** 2

	Unit	Unit	Unit
Init Trav Dir:			
Veh Action:			
Configuration:			
Driver Age:			
Driver Gender:			
Driver Cond:			
Driver Contr 1:			
Driver Contr 2:			
Fixed Object:			

I.

Crash Detail Report

2014779254	01/11/2014 00:30	K042/K42 MEASURING 1349 FEET NORTH FROM STATE 3/IOWA 3 AND K042/K42
County: Plymouth	City:	

Major Cause: Ran off road - left

Roadway Type: Feature: Non-junction/no special feature

Severity:: Suspected Minor Injury Crash

Manner of Crash: Non-collision (single vehicle)

Fatalities: 0

Surface Conditions: Ice/frost

Major Injuries: 0

Light Conditions: Dark - roadway not lighted

Minor Injuries: 1

Weather Conditions: Clear

Possible Injuries: 0

Drug/Alc Involved: None Indicated

Severity:: Suspected Minor Injury Crash

Property Damage: $5,050

Number of Vehicles: 1

	Unit 1	Unit	Unit
Init Trav Dir:	North		
Veh Action:	Movement essentially straight		
Configuration:	Sport utility vehicle		
Driver Age:	28		
Driver Gender:	M		
Driver Cond:	Unknown		
Driver Contr 1:	Lost control		
Driver Contr 2:	Not reported		
Fixed Object:	None (no fixed object struck)		

2015891025	11/20/2015 07:42	STATE 3/IOWA 3 AND K042/K42
County: Plymouth	City:	

Major Cause: Driving too fast for conditions

Roadway Type: Intersection: Four-way intersection

Severity:: Property Damage Only

Manner of Crash: Rear-end (front to rear)

Fatalities: 0

Surface Conditions: Snow

Major Injuries: 0

Light Conditions: Daylight

Minor Injuries: 0

Weather Conditions: Snow

Possible Injuries: 0

Drug/Alc Involved: None Indicated

Severity:: Property Damage Only

Property Damage: $5,000

Number of Vehicles: 2

	Unit 1	Unit 2	Unit
Init Trav Dir:	South	East	
Veh Action:	Slowing/stopping (deceleration)	Turning left	
Configuration:	Four-tire light truck (pick-up)	Tractor/semi-trailer	
Driver Age:	31	70	
Driver Gender:	M	M	
Driver Cond:	Apparently normal	Apparently normal	
Driver Contr 1:	Driving too fast for conditions	No improper action	
Driver Contr 2:	Not reported	Not reported	
Fixed Object:	None (no fixed object struck)	None (no fixed object struck)	

I.

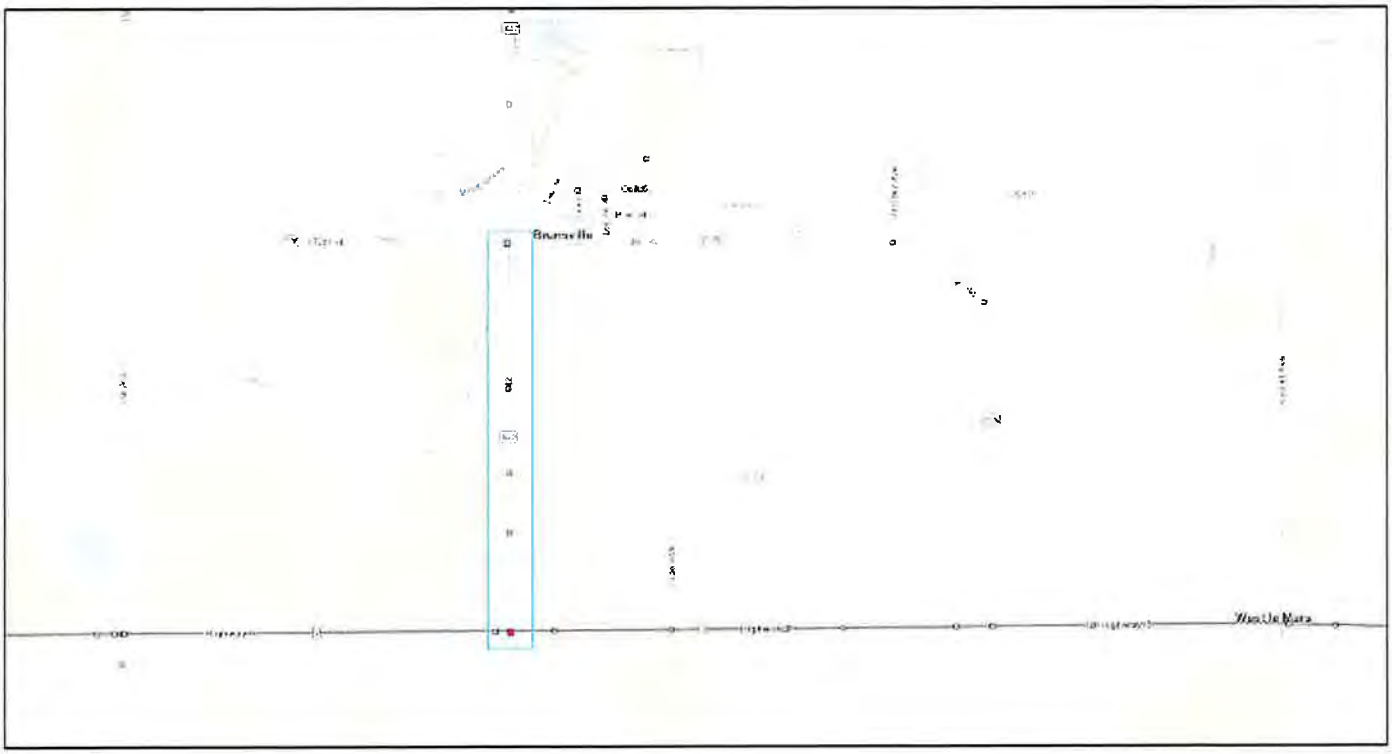
Iowa Crash Analysis Tool
Quick Report
2024

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

Injury Status Summary	1
Fatalities	0
Suspected serious/incapacitating	0
Suspected minor/non-incapacitating	1
Possible (complaint of pain/injury)	0
Uninjured	0
Unknown	0
Not Reported	0

Property/Vehicles/Occupants	
Property Damage Total (dollars):	242,000.00
Average (per crash dollars):	121,000.00
Total Vehicles:	4.00
Average (per crash):	2.00
Total Occupants:	4.00
Average (per crash):	2.00

Average Severity	
Fatalities/Fatal Crash:	0.00
Fatalities/Crash:	0.00
Injuries/Crash:	0.50
Major Injuries/Crash:	0.00
Minor Injuries/Crash:	0.50
Possible/Unknown Injuries/Crash:	0.00



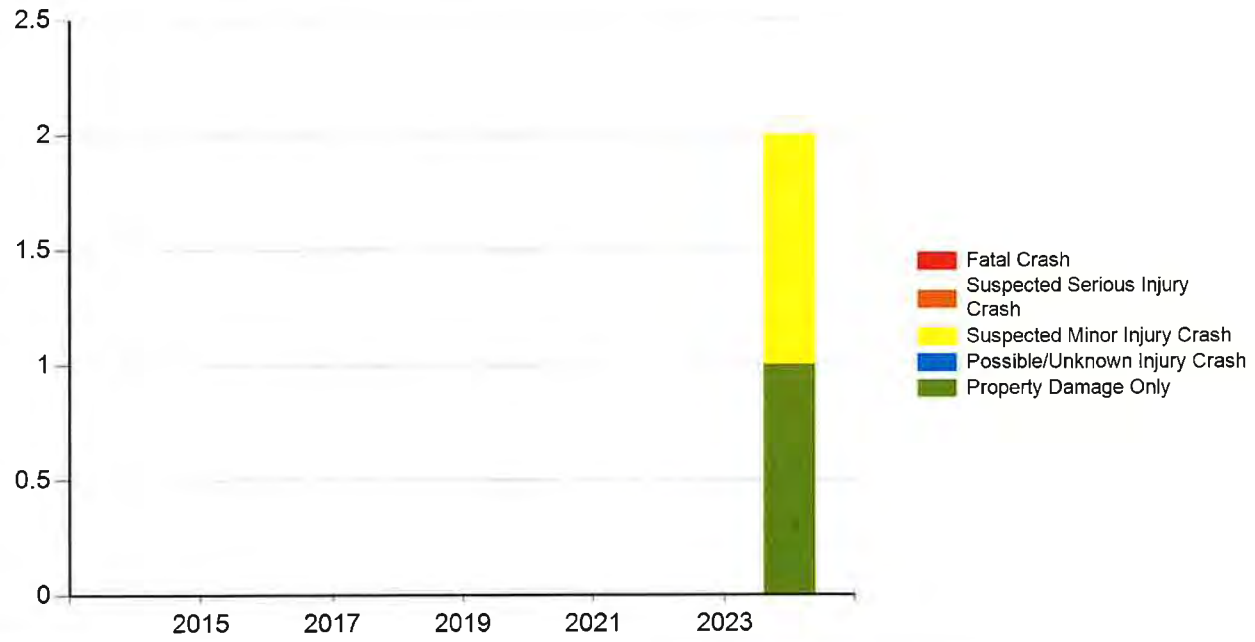
I.

Iowa Crash Analysis Tool
Quick Report
2024

Crash Severity - Annual

Crash Year	Fatal Crash	Suspected Serious Injury Crash	Suspected Minor Injury Crash	Possible/Unknown Injury Crash	Property Damage Only	Total
2014	0	0	0	0	0	0
2015	0	0	0	0	0	0
2016	0	0	0	0	0	0
2017	0	0	0	0	0	0
2018	0	0	0	0	0	0
2019	0	0	0	0	0	0
2020	0	0	0	0	0	0
2021	0	0	0	0	0	0
2022	0	0	0	0	0	0
2023	0	0	0	0	0	0
2024	0	0	1	0	1	2
Total	0	0	1	0	1	2

Severity/Year

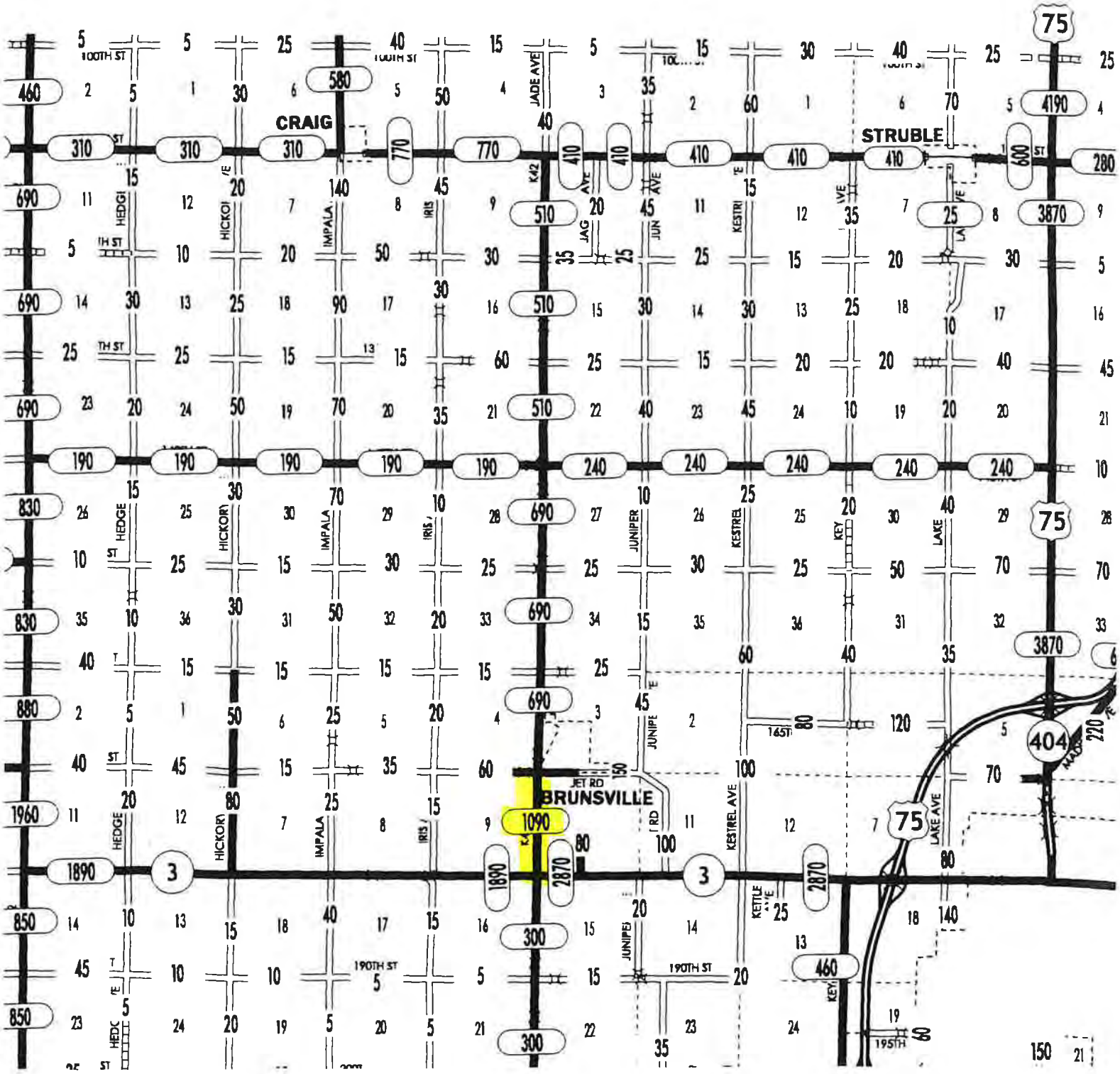


J

2023 ANNUAL AVERAC

HISTORICAL ANNUAL A

R-46W



County:	Plymouth	Prepared By:	Thomas Rohe
Location:	On K-42 From Hwy 3 North 1 Mi	Date Prepared:	8/15/24
Proposed Improvements:	Widen Shoulders, Flatten Foreslopes.		
Estimated Improvement Cost:	$15,000		
Inflation on Crash Costs:	4%	Annual Maintenance: (% of Improvement Cost)	2%
Discount Rate:	4%		
Estimated Service Life:	20	Annual Maintenance Cost:	$ -
Method Choice:	CRF Method		

The Crash Reduction Factor (CRF) Method applies one to three CRFs to historical crashes to estimate reductions in future crashes. Crash Modification Factors (CMFs) can be converted to CRFs. For additional information, click the "Learn More" button.

Total Benefits and Costs

		Implementation Cost	$ -
		Present Value of Maint.	$ -
Present Value Benefits (Societal Benefits)	**$ -**	**Present Value Costs (Impl. and Maint. Costs)**	**$ -**
Present Value Net Return	$ -		
Benefit Cost Ratio			

Form continues on next page

County:	Plymouth	Prepared By:	Thomas Rohe
Location:	K42 from Hwy 3 North 1 mile	Date Prepared:	8/16/2024
Proposed Improvements:	shoulder widening, flatting foreslopes		
Estimated Improvement Cost:	$ 915,000		
Inflation on Crash Costs:	4%	Annual Maintenance:	2%
Discount Rate:	4%	(% of Improvement Cost)	
Estimated Service Life:	20	Annual Maintenance Cost:	$ 18,300

Method Choice: CRF Method

The Crash Reduction Factor (CRF) Method applies one to three CRFs to historical crashes to estimate reductions in future crashes. Crash Modification Factors (CMFs) can be converted to CRFs. For additional information, click the "Learn More" button.

Crash Reduction Factor (CRF) Method

Traffic Growth Factor:	1%
Number of CRFs:	2
Years of Crash History:	5

Combined CRF (Dominant Common Residuals Method)

Iowa DOT's preferred methodology for combining CRFs is Dominant Common Residuals, since it is more conservative than the other options.

	CRF 1:	CRF 2:	Combined CRF
CRF Value (%)	3%	6	5.7

Crash Severity	Rounded Societal Costs	Crash History (Total):	CRF (from above)	Crash History - Annual Avg	Crashes Saved Annually
Fatal (K)	$ 4,200,000	0	5.7	**0.00**	**0.00**
Serious Injury (A)	$ 4,200,000	0	5.7	**0.00**	**0.00**
Minor Injury (B)	$ 280,000	1	5.7	**0.20**	**0.01**
Possible/Unknown Injury (C)	$ 130,000	0	5.7	**0.00**	**0.00**
Property Damage Only (O)	$ 20,000	1	5.7	**0.20**	**0.01**

Crash Severity	Annual Societal Benefit
Fatal (K)	$ -
Serious Injury (A)	$ -
Minor Injury (B)	$ **3,179**
Possible/Unknown Injury (C)	$ -
Property Damage Only (O)	$ **227**

Total Benefits and Costs

		Implementation Cost	$ 915,000
		Present Value of Maint.	$ 248,703
Present Value Benefits (Societal Benefits)	$ **50,312**	**Present Value Costs (Impl. and Maint. Costs)**	$ 1,163,703
Present Value Net Return	$ (1,113,391)		
Benefit Cost Ratio	**0.04**		

Form continues on next page

County: Plymouth
Location: K42 from Hwy 3 North 1 mile
Prepared By: Thomas Rohe
Date Prepared: 8/16/2024

No Input Necessary - No Custom Values In Use

General Customizations

No change to Crash Costs

No change to Discount Rate

No change to Maintenance Costs

Method-Specific Customizations

No change to Traffic Growth Rate

No change to Crash History