

Traffic Safety Improvement Program

Applications for Traffic Control Devices FY 2015



Received August 15, 2012

Traffic Control Devices FY 2015

Page No.	Applicant	Title/Subject	\$\$\$	
			Project	Request
1	Iowa DOT, Office of Traffic & Safety	Replacement of Overhead Red-Yellow Flashing Beacons	\$75,000	\$75,000
3	City of West Des Moines	Flashing Yellow Arrow Left Turn Signal Conversion	\$165,000	\$165,000
27	City of Des Moines	Pedestrian Crossing Signal Upgrades	\$190,000	\$150,000
35	City of Des Moines	Traffic Signal Battery Backup Units – 30 Intersections	\$270,000	\$210,000
43	City of Urbandale	Traffic Signal Battery Backup Units – Multiple Locations	\$79,600	\$79,600
65	City of Waterloo	Intersection of W. Ridgeway Ave and W. 11 th St.	\$38,000	\$38,000
77	City of Denison	IA Hwy 39 & Ave C	\$210,000	\$105,000
105	City of Onawa	IA Hwy 175 at the Intersection with 10 th St.	\$46,027.30	\$46,027.30
117	City of Council Bluffs	Council Bluffs/Pedestrian Countdown Indications	\$77,460.20	\$60,404
127	City of Greeley	City of Greeley Street Sign Replacement Project	\$1,185.07	\$699.60
133	City of Dundee	City of Dundee Street Sign Replacement Project	\$1,846.10	\$1,087.42
139	City of Masonville	City of Masonville/Street Sign Replacement Project	\$1,335.10	\$659.60
145	City of Clinton	19 th Ave North & North 3 rd St. Traffic Signal	\$150,000	\$75,000

Continued on next page

Traffic Control Devices (Continued)

Page No.	Applicant	Title/Subject	\$\$\$	
			Project	Request
167	Brinson Kinzer, Mayor	City of Blue Grass Iowa	\$384,000	\$384,000
183	City of Bellevue	Speed Control	\$6,250	\$6,250
	TOTAL	15 PROJECTS	\$1,695,703.77	\$1,396,727.92



Application for TRAFFIC SAFETY FUNDS

GENERAL INFORMATION

Location / Title of Project Replacement of Overhead Red-Yellow Flashing Beacons

Applicant Iowa DOT, Office of Traffic & Safety

Contact Person Steven Schroder Title Traffic Safety Engineer

Complete Mailing Address 800 Lincoln Way
Ames, IA 50010

Phone 515-239-1623 E-Mail steven.schroder@dot.iowa.gov
(Area Code)

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

Co-Applicant(s) _____

Contact Person _____ Title _____

Complete Mailing Address _____

Phone _____ E-Mail _____
(Area Code)

PLEASE COMPLETE THE FOLLOWING PROJECT INFORMATION:

Application Type

- Site Specific
- Traffic Control Device
- Safety Study

Funding Amount

Total Project Cost \$ 75,000

Safety Funds Requested \$ 75,000

- A. Not applicable
- B. In the past, one mitigation for crashes at rural, two-way stop controlled intersections was to install overhead red and yellow flashing beacons over the center of the intersection. The red flashing lights face the stop-controlled minor approach and the yellow flashing lights face the through traffic on the major road approaches.

Research and experience has shown that this arrangement can lead to driver error when minor road drivers see the overhead flashing red beacon and incorrectly assume that all the beacons are flashing red and the entire intersection is all-way stop controlled. The result can be an increase in minor road "failed to yield from stop sign" crashes.

An alternative to overhead flashing red and yellow beacons is to mount red flashing beacons on the top of the stop signs, and mount the yellow flashing beacons on top of intersection ahead warning signs, in advance of the intersection.

These funds will be used to replace overhead red-yellow flashing beacons with sign-mounted signs as described previously. Replacement sites will be prioritized based on applicable crash history and traffic volumes.

- C. In Fiscal Year 2013, \$80,000 was approved for the Overhead Flashing Beacon Replacement Program through TSIP. Most of that funding has been obligated as communities are taking advantage of this program. Additional funding will allow the program to continue uninterrupted.
- D. There is no application deadline. Counties may apply for funds year-round. Funding is limited and applications are received and process on a first-come, first-funded basis.

Applicant

Steven Schroder
Iowa DOT, Office of Traffic & Safety

City of West Des Moines

Traffic Safety Improvement Program Application - 2013



Flashing Yellow Arrow Left Turn Signal Conversion

August 15, 2013

Application for TRAFFIC SAFETY FUNDS

GENERAL INFORMATION

Location / Title of Project Flashing Yellow Arrow Left Turn Signal ConversionApplicant City of West Des Moines, IowaContact Person Jim Dickinson, PE Title Principal Engineer - TrafficComplete Mailing Address 560 South 16th StreetWest Des Moines, Iowa 50265Phone 515-222-3480 E-Mail Jim.Dickinson@wdm.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:

Application Type

Site Specific
Traffic Control Device
Safety Study

Funding Amount

Total Project Cost \$ 165,000Safety Funds Requested \$ 165,000

APPLICATION CERTIFICATION FOR LOCAL GOVERNMENT

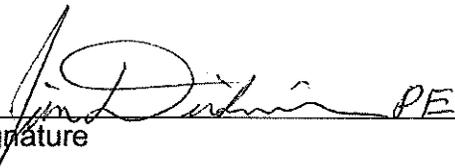
To the best of my knowledge and belief, all information included in this application is true and accurate, including the commitment of all physical and financial resources. This application has been duly authorized by the participating local government(s). I understand the attached resolution(s) binds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

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

Representing the City of West Des Moines

Signed:  8-12-13
Signature Date Signed

Bret Hodne, Director of Public Works
Typed Name

Attest:  PE 8-12-13
Signature Date Signed

Jim Dickinson, Principal Engineer - Traffic
Typed Name

**RESOLUTION APPROVING GRANT APPLICATION
FOR TRAFFIC SIGNAL IMPROVEMENT PROGRAM (TSIP) FUNDS**

WHEREAS, the City Council of the City of West Des Moines strongly promotes the reduction of traffic congestion and the safe, continuous operation of the city's traffic control signals,

therefore,

BE IT RESOLVED BY THE CITY COUNCIL OF THE CITY OF WEST DES MOINES, IOWA, authorization is given to the City Engineer to apply for Traffic Safety Improvement Program (TSIP) Funds.

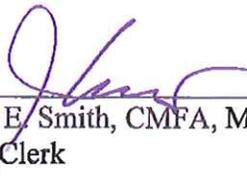
BE IT FURTHER RESOLVED, that if the projects are funded, the City of West Des Moines will adequately maintain the completed project for its intended public use following project completion.

PASSED AND APPROVED this 5th day of August, 2013.



Steven K. Gaer, Mayor

ATTEST:



Jody E. Smith, CMFA, MMC
City Clerk

13-08-05-07

COUNCIL ACTION	YEAS	NAYS	ABST.	ABSENT
TREVILLYAN	✓			
NICKELSON	✓			
TRIMBLE	✓			
OHMART				✓
SANDAGER	✓			
MOTION BY <i>Trimble</i>				
SECOND BY: <i>Sandager</i>				
ROLL CALL # <i>13-289</i>				

NARRATIVE

Flashing Yellow Arrow Left Turn Signal Conversion

West Des Moines, Iowa

The City of West Des Moines is submitting this application for Traffic Safety Improvement Program funds under the Traffic Control Device category. The funding request is to provide for the purchase of traffic signal equipment required for the installation of flashing yellow arrow protected/permissive left turn signals (FYA) at seventy (70) existing signalized intersections throughout the City. The City of West Des Moines is responsible for the operation and maintenance of the signalized intersections.

The City of West Des Moines has used the five-section protected/permissive left turn signal head for over thirty years at intersections with separate left turn lanes. This signal head provided a very good option for signaling a left turn movement over the left turn being permissive only or protected only. It did have problems in that some left turning drivers would interpret the green ball as a "go" rather than yielding to oncoming traffic during the green ball. The five-section signal head also did not allow traffic engineers to lag a left turn movement since it would result in a "yellow trap" for the left turn movement that was opposite of the left turn that was being lagged. The inability to lag a left turn can impact providing good traffic progression along a corridor.

In a press release dated July 2, 2012, the Iowa Department of Transportation promotes the use of flashing yellow left turn arrows at intersections. The press release states:

The flashing yellow left turn arrow is intended to:

- **Help prevent crashes.** *A national study demonstrated that drivers found flashing yellow left turn arrows more understandable than traditional yield-on-green indications.*
- **Reduce traffic delays.** *There are more opportunities to make a left turn with the flashing yellow left turn arrow than with the traditional three-arrow, red, yellow and green indications. This helps reduce delays at intersections, which save time and fuel.*
- **Provide more traffic management flexibility.** *The new traffic signals provide traffic engineers with more options to handle variable traffic volumes.*

The City of West Des Moines has installed flashing yellow arrow left turn signals at seventeen intersections with the first intersection being installed on December 12, 2011. Two of the intersections were new traffic signal installations. Twelve intersections were existing signalized intersections that had five-section protected/permissive left turn signal heads replaced with the four-section flashing yellow arrow left turn signal heads. Three

intersections had one of the turn lanes changed from protected left turn signals to the flashing yellow arrow left turn signal for protected/permissive operation.

With the new left turn signal heads being installed at several intersections for over a year, the City has experienced the benefits of the flashing yellow arrow left turn signals that were outlined in the Iowa Department of Transportation's press release on the new signal left turn head.

Crashes – Left turn crash data for thirteen intersections were examined where the flashing yellow arrow left turn signal had been installed for at least one year. The average annual number of left turn crashes for the previous four years was determined for the thirteen intersections as well as the number of left turn crashes in the year since the flashing yellow left turn signals had been installed. The data indicated the following:

- Average annual number of left turn crashes four years prior to FYA = 20 crashes
- Number of left turn crashes one year after FYA = 10 crashes

We will continue to monitor the crash data at these intersections as well as new installations. From the data we have collected after the first year of operation, the installation of the flashing yellow arrow left turn signal is having an impact on reducing left turn crashes at those intersections.

Reduce Traffic Delays – At three intersections in West Des Moines, protected left turn signal phasing was originally used where a single left turn was opposed by dual left turns. With the dual left turn being protected, the single left turn was also protected. This created delay for the lower volume left turn movement on the single lane as well as requiring the opposing traffic to stop for one vehicle to make the left turn on a protected green left arrow. After residents began seeing the FYA at other intersections in West Des Moines, we received requests to change the protected left turn for the single lane to protected/permissive using the flashing yellow arrow left turn signal. The FYA signal heads were installed and have been well received by the residents.

Provide more traffic management flexibility – The City of West Des Moines has definitely experienced the statement that the FYA signals provide traffic engineers with more options to handle variable traffic volumes. The flashing yellow arrow left turn signal allows us to utilize lead-lag left turn signal phase sequences since the FYA does not provide the “yellow trap” for drivers like the five-section protected permissive signal does. This has enabled us to maximize the green bands on our corridors with traffic signal coordination. On corridors with adaptive traffic signal control, the FYA allows the signal processor to have the left turn lead or lag as an option in the phase pairs it selects to display providing maximum progression along the corridor and minimizing delay to the side street vehicles.

Another traffic management feature of the flashing yellow arrow left turn signal used by the City of West Des Moines at several intersections is the ability to show a protected only signal display by time of day. At two intersections we had experienced a high

number of left turn crashes during certain peak traffic periods during the day. At two other intersections, the volume of oncoming traffic during the afternoon peak traffic period was significant enough that a left turning driver would not be able to have a safe gap in traffic to make the left turn. The solution was to program the signal sequences at the intersection to only display a protected green left turn arrow during certain times of the day and be protected/permissive with the flashing yellow arrow during the rest of the day when traffic opposing traffic volumes were lower.

When the City of West Des Moines installed the first few intersections with the flashing yellow arrow left turn signal, some citizens were skeptical since it was different from the left turn signal display that they had been used to for over 30 years. However that was short lived. Now we have citizens calling requesting that we install that "left turn signal with the flashing yellow arrow" at a particular intersection. The West Des Moines City Council supports the installation of the flashing yellow arrow left turn signals at all intersections in the city that currently use the five-section left turn signal head.

The City of West Des Moines has experienced the benefits provided by the flashing yellow arrow left turn signals. With this proposed project, all existing five-section left turn signal heads will be replaced with four-section flashing yellow arrow left turn signal heads. Residents and visitors to West Des Moines will not see the green ball display during the permissive portion of a protected/permissive left turn signal display. They will see a flashing yellow arrow that conveys the message to use caution when making their left turn. Reduced left turn crashes, reduced traffic delays, and more traffic management flexibility is what the proposed flashing yellow left turn signal conversion project will provide West Des Moines' residents and visitors. We have experienced these benefits with our existing flashing yellow arrow left turn signal installations and know this new signal display works.

ITEMIZED BREAKDOWN OF COST**Flashing Yellow Arrow
Left Turn Signal Conversion****West Des Moines, Iowa**Per Intersection Cost

	Units	Unit Cost	Extension	
Malfunction Monitor Unit	1	870.00	870.00	
Flash Transfer Relay	2	40.00	80.00	
Load Switch	2	30.00	60.00	
Yellow Left Arrow	4	60.00	240.00	
Red Left Arrow	4	65.00	260.00	
Backplate 4-Section	4	90.00	360.00	
U Bolt Kit	4	10.00	40.00	
9" Arm Kit	4	70.00	280.00	
Load Switch Panel	1	585.00	<u>585.00</u>	
Total Per Intersection			\$2,775.00	With Load Switch Panel
			\$2,190.00	W/O Load Switch Panel

70 Intersections

With Load Switch Panel	20	\$2,775.00	\$55,500.00
Without Load Switch Panel	50	\$2,190.00	<u>\$109,500.00</u>

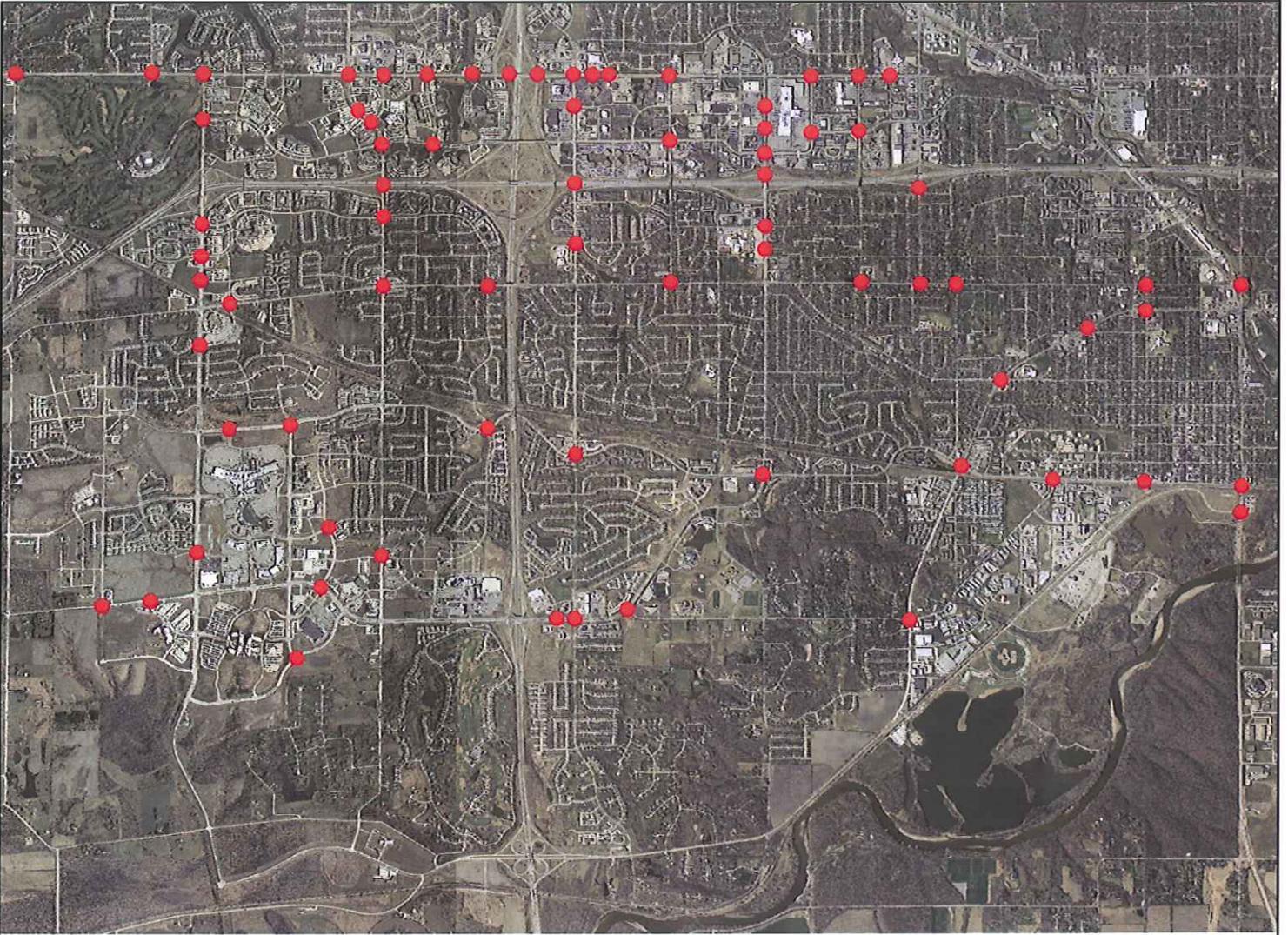
Total Project Cost \$165,000.00

TIME SCHEDULE

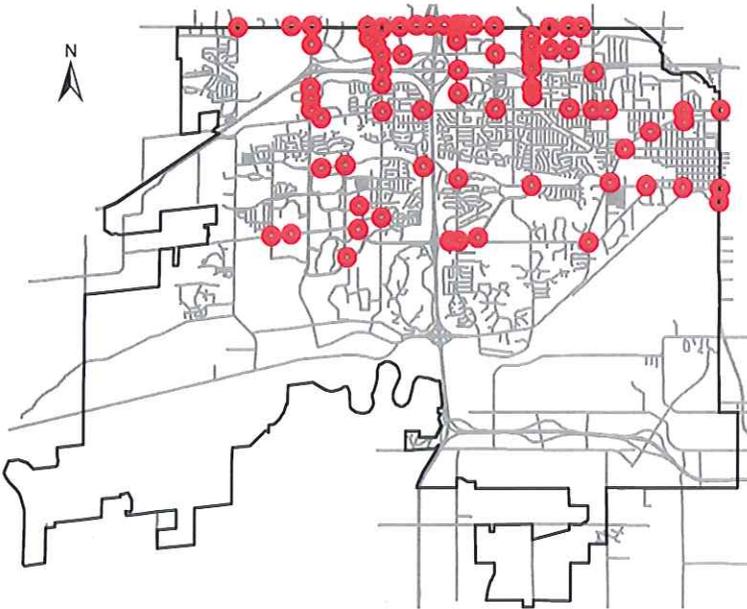
**Flashing Yellow Arrow
Left Turn Signal Conversion**

West Des Moines, Iowa

TSIP Funding Application	August, 2013
TSIP Project Selection	December, 2013
TSIP Funding Available	July, 2014
Project Letting -Equipment	July, 2014
Start Project Installation	August, 2014
Project Completion	June, 2015



VICINITY MAP



LEGEND

PROJECT LOCATION 



**DEPARTMENT OF PUBLIC WORKS
ENGINEERING DIVISION**
560 S. 16TH STREET (515)222-3475
WEST DES MOINES, IOWA 50265
FAX NO. (515)222-3478

PROJECT: **TSIP Funding Flashing Yellow Arrow**
LOCATION: **Various Locations Within West Des Moines**

DRAWN BY: REF

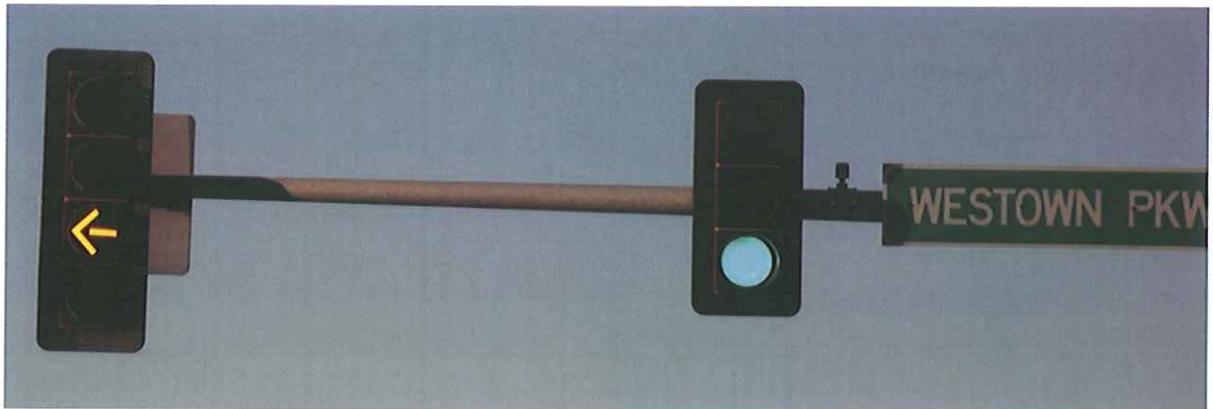
DATE: 8/5/2013

SHT. 1 OF 12

PICTURES

**Flashing Yellow Arrow
Left Turn Signal Conversion**

West Des Moines, Iowa



**Flashing Yellow Arrow Left Turn Signal
Converted From Five-Section Left Turn Signal**

FIVE-SECTION PROTECTED/PERMISSIVE LEFT TURN SIGNALS



Valley West Drive and EP True Parkway/Mills Civic Parkway



Valley West Drive and EP True Parkway/Mills Civic Parkway



Valley West Drive and Sylvania Drive



Valley West Drive and Woodland Avenue



50th Street and Woodland Avenue



60th Street and 59th Place



72nd Street and Ashworth Road



72nd Street and Ashworth Road

FLASHING YELLOW ARROW LEFT TURN SIGNALS



Valley West Drive and Ashworth Road



Valley West Drive and Ashworth Road



50th Street and Ashworth Road



50th Street and Ashworth Road



Jordan Creek Parkway and Office Plaza Drive



Jordan Creek Parkway and Coachlight Drive



60th Street Wistful Vista Drive



South 60th Street and Mills Civic Parkway



South 60th Street and Mills Civic Parkway



South 60th Street and Mills Civic Parkway

TRAFFIC VOLUMES

Flashing Yellow Arrow Left Turn Signal Conversion

West Des Moines, Iowa

2012 TRAFFIC COUNT SUMMARY
CITY OF WEST DES MOINES, IOWA
September 2012

STREET	LOCATION	2012 COUNT
Army Post Road	South 1st Street to S.W. Connector	1613
Ashworth Road	7th Street to 8th Street	6,845
Ashworth Road	18th Street to 19th Street	9,697
Ashworth Road	20th Street to 21st Street	15,125
Ashworth Road	Vine Street to Valley West Dr.	11,201
Ashworth Road	Valley West Dr. to 37th Street	9,808
Ashworth Road	41st Street to 42nd Street	9,442
Ashworth Road	I-35 Bridge to Prairie View Drive	11,609
Ashworth Road	55th Street to 57th Street	11,607
Ashworth Road	58th Street to 60th Street	12,585
Ashworth Road	63rd Street to 68th Street	5,367
Ashworth Road	72nd Street to 74th Street	5,479
Buffalo Road	73rd Street to 19th Street	7,697
Buffalo Road	19th Street to 19th Place	6,735
E.P. True Parkway	Grand Avenue to 19th Street	17,389
E.P. True Parkway	35th Street to 39th Street	11,482
E.P. True Parkway	39th Street to 50th Street	11,704
E.P. True Parkway	52nd Street to I-35 Bridge	14,489
E.P. True Parkway	Prairie View Drive to 56th Street	9,174
E.P. True Parkway	60th Street to 68th Street	8,765
E.P. True Parkway	68th Street to Jordan Creek Pkwy	5,827
E.P. True Parkway	Jordan Creek Pkwy to 81st Street	3,719
Fuller Road	South 19th Street to Grand Avenue	4,273
Fuller Road	Grand Avenue to Heatherwood Drive	5,159
Fuller Road	South 35th Street to G.M. Mills Civic Parkway	5,196
Grand Avenue	1st Street to 4th Street	15,388
Grand Avenue	7th Street to 8th Street	13,067
Grand Avenue	11th Street to 12th Street	12,141
Grand Avenue	16th Street to Vine Street	10,849
Grand Avenue	Elm Street to Railroad Avenue	13,903
Grand Avenue	South 19th Street to Fuller Road	6,164
Grand Avenue	Fuller Road to South 35th Street	6,458

Grand Avenue	South 35th Street to South 42nd Street	6,044
Grand Avenue	South 50th Street to I 35 East Ramps	6,847
Grand Avenue	I-35 West Ramps to Booneville Road	9,277
Grand Avenue	Raccoon River Drive to South 60th Street	3,770
Grand Avenue	South 60th Street to South Jordan Creek Pkwy	3,407
Jordan Creek Pkwy	University Ave to Westtown Pkwy	29,238
Jordan Creek Pkwy	I-80 South Ramp to Vista Drive	37,546
Jordan Creek Pkwy	Vista Drive to Ashworth Road	30,470
Jordan Creek Pkwy	Ashworth Road to Pommel Place	30,037
Jordan Creek Pkwy	Cody Drive to E.P.True Pkwy	28,116
Jordan Creek Pkwy	E.P. True Parkway to Bridgewood Blvd	19,982
S. Jordan Creek Pkwy	Bridgewood Blvd to Mills Civic Pkwy	13,007
S. Jordan Creek Pkwy	Mills Civic Pkwy to West Wells Fargo Entrance	4,453
S. Jordan Creek Pkwy	Stagecoach Drive to Booneville Road	3,867
Lake Drive	Westtown Parkway to Jordan Creek Pkwy	1,781
Mills Civic Pkwy	E.P.True Parkway to South 35th Street	11,706
Mills Civic Pkwy	South 35th Street to Fuller Road	8,735
Mills Civic Pkwy	South 50th Street to I 35 bridge	24,269
Mills Civic Pkwy	I-35 Bridge to Glen Oaks Drive	38,743
Mills Civic Pkwy	South Prairie View Dr to South 60th Street	29,789
Mills Civic Pkwy	South 60th Street to Stagecoach Drive	29,675
Mills Civic Pkwy	Stagecoach Drive to South 68th Street	23,066
Mills Civic Pkwy	South 68th Street to South Jordan Creek Pkwy	9,748
Mills Civic Pkwy	South Jordan Creek Pkwy to South 88th Street	3471
Office Park Road	8th Street to 11th Street	7,569
Prairie View Drive	Ashworth Road to Colt Drive	2,984
Prairie View Drive	Boulder Drive to E.P. True Parkway	3,109
Raccoon River Drive	Grand Ave to West Corporate Limits	4,572
Railroad Avenue	3rd Street to 4th Street	16,530
Railroad Avenue	9th Street to 10th Street	17,370
Railroad Avenue	Fuller Road to Holiday Circle	12,018
Stagecoach Drive	Mills Civic Pkwy to South 68th Street	2,482
Stagecoach Drive	South 68th Street to South Jordan Creek Pkwy	2,293
University Avenue	22nd Street to 25th Street	16,646
University Avenue	25th Street to 28th Street	16,540
University Avenue	31st Street to Valley West Drive	17,366
University Avenue	36th Street to 42nd Street	24,095
University Avenue	42nd Street to 50th Street	20,951
University Avenue	50th Street to East Ramp I-80/35	31,598
University Avenue	I-80/35 West Ramp to West Lakes Parkway	30,376
University Avenue	West Lakes Parkway to 59th Place	26,108
University Avenue	60th Street to 68th Street	18,721
University Avenue	Jordan Creek Pkwy to 142nd Street(Clive)	23,835

University Avenue	142nd Street(Clive) to 92nd Street	24,850
University Avenue	92nd Street to 98th Street	16,689
Valley West Drive	University Ave to Westown Pkwy	18,507
Valley West Drive	Westown Place to Westown Parkway	23,091
Valley West Drive	Westown Pkwy to North Ramp I-235 Bridge	30,381
	South Ramp I-235 Bridge to Woodland Avenue	21,140
Valley West Drive	Woodland Ave to Ashworth Road	17,073
Valley West Drive	Meadow Lane to Giles Street	12,855
Valley West Drive	Maple Street to E.P. True Parkway	12,612
Vine Street	4th Street to 5th Street	3,224
Vine Street	6th Street to 7th Street	3,458
Vine Street	16th Street to Grand Avenue	3,513
Vine Street	Grand Avenue to 18th Street	4,781
Vine Street	29th Street to 30th Street	2,859
Vista Drive	58th Street to 60th Street	3,252
Vista Drive	60th Street to 62nd Street	5,018
Vista Drive	66th Street to Office Plaza Drive	4,738
Vista Drive	Office Plaza Drive to Jordan Creek Pkwy	7,244
Westown Parkway	19th Place to 22nd Street	7,193
Westown Parkway	25th Street to 28th Street	11,411
Westown Parkway	29th Street to 30th Street	8,651
Westown Parkway	31st Street to 35th Street	10,017
Westown Parkway	36th Street to 42nd Street	12,406
Westown Parkway	45th Street to 50th Street	10,673
Westown Parkway	50th Street to West Lakes Parkway	14,036
Westown Parkway	Lake Drive to 68th Street	7,310
Woodland Avenue	33rd Street to Valley West Dr.	2,112
Woodland Avenue	Valley West Drive to 39th Street	4,674
Woodland Avenue	Vividell Lane to 42nd Street	3,193
Woodland Avenue	42nd Street to 45th Street	1,859
Woodland Avenue	45th Street to 49th Street	2,598
5th Street	Elm Street to Maple Street	1,684
8th Street	Office Park Road to Center Street	19,311
8th Street	Clegg Road to Ashworth Road	14,056
8th Street	Prospect Drive to Hillside Street	5,626
8th Street	Walnut Street to Elm Street	4,006
19th Street	Pearl Drive to Vine Street	7,854
19th Street	Locust Street to Elm Street	7,112
22nd Street	University Avenue to Westown Parkway	24,189
22nd Street	Kingman Avenue to North Ramp I-235	28,141
22nd Street	21st Street to Ashworth Road	9,761
25th Street	University Avenue to Westown Parkway	1,977
South 35th Street	Mills Civic Pkwy to Park Haven Dr	2,255
South 35th Street	Thornwood Road to Grand Ave	959
42nd Street	Corporate Drive to Westown Parkway	6,114
42nd Street	Woodland Avenue to Francrest Circle	4,423
50th Street	University Avenue to Corporate Drive	17,127
50th Street	Westown Parkway to I-235	20,781

50th Street	Woodland Avenue to Ashworth Road	18,841
50th Street	Ashworth Road to Colt Drive	17,697
South 50th Street	E.P. True Parkway to Westwood Drive	12,013
South 50th Street	Westwood Drive to Mills Civic Parkway	11,705
South 50th Street	Park Drive to Grand Avenue	4,281
60th Street	University Avenue to Westown Parkway	13,233
60th Street	Westown Parkway to Vista Drive	15,775
60th Street	Vista Drive to Ashworth Road	14,512
60th Street	Ashworth Road to E.P. True Parkway	13,252
South 60th Street	Mills CP to Booneville Road - Gravel	794
68th Street	E.P. True Pkwy to Wistful Vista Drive	6,424
South 68th Street	Coachlight Drive to Mills Civic Pkwy	8,618
South 68th Street	Mills Civic Pkwy to South 64th Street	2,503

***Application for Traffic Safety Funds
Iowa Department of Transportation***

(Traffic Control Device Category)

***Pedestrian Crossing Signal
Upgrades***



***Division of Traffic and Transportation
Jennifer L. Bohac, P.E., P.T.O.E.
City Traffic Engineer***

August 2013

★ Roll Call Number
13-1183

Agenda Item Number
7

Date July 29, 2013

APPROVING FY2015 TRAFFIC SAFETY FUND APPLICATIONS TO THE IOWA DEPARTMENT OF TRANSPORTATION

BE IT RESOLVED, BY THE CITY COUNCIL OF THE CITY OF DES MOINES, IOWA:

That the City Manager is hereby directed to submit applications to the Iowa Department of Transportation for Traffic Safety Funds to cover a portion of the construction costs for the following projects:

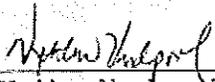
1. East 46th Street and Hubbell Avenue Intersection Widening and Signalization
2. Pedestrian Crossing Signal Upgrades - 15 intersections
3. Traffic Signal Battery Backup Units - 30 intersections

The City further agrees that if these projects are funded and constructed, the City of Des Moines will provide adequate resources to maintain the improvements for their useful life.

(Council Communication Number 13-402 Attached)

Moved by Hensley to adopt.

APPROVED AS TO FORM:


 Kathleen Vanderpool
 Deputy City Attorney

COUNCIL ACTION	YEAS	NAYS	PASS	ABSENT
COWNE	✓			
COLEMAN	✓			
GRISS	✓			
HENSLEY	✓			
MAHAFFEY	✓			
MEYER	✓			
MOORE	✓			
TOTAL	7			

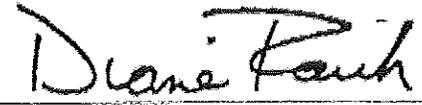
SECTION CARRIED APPROVED

 Y. Mc. Franklin Mayor

CERTIFICATE

I, DIANE RAUH, 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.


 Diane Rauh City Clerk

The City of Des Moines has also received requests to consider adding countdown pedestrian timers to other signalized intersections within the city to provide more information for travelling pedestrians. These timers have also been shown nationally to improve intersection safety.

Proposed Project Scope and Justification:

The project proposes to install APS and countdown pedestrian timers and software to improve pedestrian crossing signals for both our sighted and blind pedestrians at 18 signalized intersections within the City of Des Moines. This Traffic Safety Fund application would provide the necessary equipment for the City of Des Moines to fulfill both objectives. City crews would provide the installation of this equipment.

The Martin Luther King Jr. Parkway Corridor connects I-235 on the north and then bends east to connect to SE 9th Street. This corridor has the Meredith Valley Trail on the south and east sides of the road. This creates a considerable amount of pedestrian activity in the area. Several members of our blind community who walk in this corridor have commented on how complex the intersections are to cross within this corridor due to the wide median and large roadway cross section. The City proposes to upgrade the pedestrian crossing equipment to include APS and pedestrian countdown timers at 13 intersections along this corridor. These intersections scored between 26-29 on the City's APS prioritization worksheet.

The Grand Avenue Corridor from 31st to 38th was upgraded with countdown timers and APS in 2011 as part of an "Older Driver Safety Demonstration" project. The intersections of 28th Street/Grand Avenue and 42nd Street/Grand Avenue were not included in the initial project. We are requesting to have APS installed at these two remaining locations to complete the Grand Avenue corridor with APS from MLK to 42nd Street.

Ingersoll Avenue is a major retail corridor in the city. It is a parallel corridor to Grand Avenue with much of the same characteristics for older drivers, blind pedestrian needs, and high transit use. We are requesting that the three signalized intersections along Ingersoll Avenue from 28th Street to 42nd Street be upgraded to match what is being done on Grand Avenue. The City of Des Moines already has plans to install APS at 42nd Street this fall as this location was reviewed and approved through our APS request process and the Access Advisory Board. These three intersections already have countdown timers installed, so we are requesting to have APS only installed to complete the Ingersoll Avenue corridor with APS from MLK to 42nd Street.

PEDESTRIAN CROSSING SIGNAL UPGRADES

TIME SCHEDULE

Project Approval:	January 2014
Agreement Signed:	March 2014
Project bid (Equipment):	May 2014
Installation completed:	August 2014
Project Closeout:	December 2014



42nd/Grand, NE corner



MLK Pkwy/Ingersoll Ave, NE corner



MLK Pkwy at 5th Street



42nd/Grand, NE corner



Ingersoll Ave at 35th Street

Traffic Volume Information

1. M.L. King Jr. Parkway – 10,000 to 14,000 vehicles per day
2. West M.L. King Jr. Parkway – 36,000 to 39,000 vehicles per day
3. Grand Avenue – 10,000 to 12,000 vehicles per day
4. Ingersoll Avenue – 12,000 to 15,000 vehicles per day

***Application for Traffic Safety Funds
Iowa Department of Transportation***

(Traffic Control Device Category)

***Citywide Traffic Signal Battery
Backup Project***



***Division of Traffic and Transportation
Jennifer L. Bohac, P.E., P.T.O.E.
City Traffic Engineer***

August 2013

★ Roll Call Number

Agenda Item Number

13-1183

7

Date July 29, 2013

APPROVING FY2015 TRAFFIC SAFETY FUND APPLICATIONS TO THE IOWA DEPARTMENT OF TRANSPORTATION

BE IT RESOLVED, BY THE CITY COUNCIL OF THE CITY OF DES MOINES, IOWA:

That the City Manager is hereby directed to submit applications to the Iowa Department of Transportation for Traffic Safety Funds to cover a portion of the construction costs for the following projects:

1. East 46th Street and Hubbell Avenue Intersection Widening and Signalization
2. Pedestrian Crossing Signal Upgrades - 15 intersections
3. Traffic Signal Battery Backup Units - 30 intersections

The City further agrees that if these projects are funded and constructed, the City of Des Moines will provide adequate resources to maintain the improvements for their useful life.

(Council Communication Number 13-402 Attached)

Moved by Hensley to adopt.

APPROVED AS TO FORM:


 Kathleen Vanderpool
 Deputy City Attorney

COUNCIL ACTION	YEAS	NAYS	ABSENT
COWNE	✓		
COLEMAN	✓		
GRIFE	✓		
HENSLEY	✓		
MALONEY	✓		
MEYER	✓		
MOORE	✓		
TOTAL	7		


 T. M. Franklin
 Mayor

CERTIFICATE

I, DIANE RAUH, 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.


 Diane Rauh
 City Clerk

Historically, the power outages are a result of some severe weather, which could be a thunderstorm system in the summer months or a blizzard event in the winter. These conditions are not at all desirable to have non-operating traffic signals present, nor to have city workers out in the roadway attempting to place 4-way stop signs. Also, the city has paid several claims to motorists for vehicle damages caused by temporary stop signs that were installed in the roadway during signal outages, because the signs were blown into vehicles by high winds.

The objective of installing traffic signal battery backup units is to increase public safety and reduce traffic congestion by allowing traffic signals to function even during power outages. Based on West Des Moines experience, the average traffic signalized intersection experiences 8-10 local power outages per year. By immediately going to battery backup, the motorist and the city's working staff will be provided additional safety benefits.

**CITYWIDE TRAFFIC SIGNAL BATTERY BACKUP
PROJECT**

TIME SCHEDULE

Project Approval:	January 2014
Agreement Signed:	May 2014
Project bid (Equipment):	November 2014
Installation completed:	October 2015
Project Closeout:	December 2015

Photographs of existing City Battery Back-up Installation



Interior view of "Piggyback" cabinet assembly attached to traffic signal controller cabinet
(SE 14th Street and Indianola Avenue)

Traffic Volume Information

1. SE 14th Street Corridor: 25,000 – 38,000 vehicles/day
2. Merle Hay Rd. Corridor: 20,000 – 26,000 vehicles/day
3. East University Ave. Corridor: 20,000 – 26,000 vehicles/day
4. ML King / Douglas Corridor: 22,000 – 25,000 vehicles/day

A. APPLICATION, CERTIFICATION, & RESOLUTION

APPLICATION:



Iowa Department of Transportation

Rev. 3/08

Application for TRAFFIC SAFETY FUNDS

GENERAL INFORMATION

Location / Title of Project Traffic Signal Battery Backup Units - Multiple Locations

Applicant City of Urbandale

Contact Person David J. McKay, P.E. Title Director of Engineering & Public Works

Complete Mailing Address 3600 86th Street
Urbandale, IA 50322-4057

Phone 515-278-3950 E-Mail dmckay@urbandale.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:

Application Type

Site Specific	<input type="checkbox"/>
Traffic Control Device	<input checked="" type="checkbox"/>
Safety Study	<input type="checkbox"/>

Funding Amount

Total Project Cost	\$ <u>79,600.00</u>
Safety Funds Requested	\$ <u>79,600.00</u>

A. APPLICATION, CERTIFICATION, & RESOLUTION CONT.

CERTIFICATION:

Rev. 3/08

APPLICATION CERTIFICATION FOR LOCAL GOVERNMENT

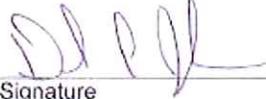
To the best of my knowledge and belief, all information included in this application is true and accurate, including the commitment of all physical and financial resources. This application has been duly authorized by the participating local government(s). I understand the attached resolution(s) binds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

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

Representing the City of Urbandale

Signed:  7-8-13
Signature Date Signed

David J. McKay, P.E.
Typed Name

Attest:  7-08-13
Signature Date Signed

Derek A. Johnson, P.E.
Typed Name

A. APPLICATION, CERTIFICATION, & RESOLUTION CONT.

RESOLUTION:

E

RESOLUTION 83-2013

A RESOLUTION AUTHORIZING THE CITY OF URBANDALE, IOWA, TO MAKE AN APPLICATION TO THE IOWA DEPARTMENT OF TRANSPORTATION TRAFFIC SAFETY IMPROVEMENT PROGRAM FOR THE FUNDING OF THE INSTALLATION OF BATTERY BACKUP UNITS AT EIGHT (8) TRAFFIC SIGNALS AND FURTHER APPROVING THE APPLICATION WHICH OBLIGATES THE CITY TO MAINTAIN THE FUNDED IMPROVEMENTS.

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

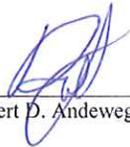
WHEREAS, said program allows for the distribution of traffic safety funds to cities, counties and the Iowa DOT for roadway safety improvements, research, studies, or public information initiatives.; and

WHEREAS, the City of Urbandale has determined that by providing battery backups for these traffic signals there will be continued operation of signals during power outages thereby reducing traffic congestion and improving the safety of the intersection;

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

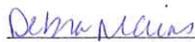
1. The City Council supports and approves the attached application for Iowa Department of Transportation Traffic Safety Improvement Program funding.
2. The City Council hereby commits to accepting and maintaining these improvements.
3. The Mayor is hereby authorized to execute the application on behalf of the City.

PASSED AND APPROVED this 23rd day of July, 2013.



Robert D. Andeweg, Mayor

Attest:



Debra Mains, City Clerk

B. NARRATIVE

Traffic Signal Battery Backup Units – Multiple Locations Urbandale, Iowa

The City of Urbandale is submitting this application for Traffic Safety Improvement Program Funds under the Traffic Control Device category. The funding request is to provide for the purchase of battery backup units and the associated equipment to retrofit the existing signalized intersections described below. The battery backup unit is installed in a separate cabinet that is either mounted on or adjacent to the existing traffic signal cabinet. The City of Urbandale is responsible for the operation and maintenance of the signals.

Douglas Avenue at I-80/35 - Douglas Avenue at the I-80/35 Interchange is a 4 lane divided facility with a right turn lane at each on ramp. The traffic volume for Douglas Avenue at the I80/35 interchange is 25,250 vehicles per day based on the 2012 DOT Traffic Flow Map. This arterial serves as a major route to office and commercial areas.

Douglas Avenue and 100th Street - Douglas Avenue at 100th Street is a 4 lane divided roadway with dual lefts and a right turn lane in each direction. The traffic volume for Douglas Avenue at 100th Street is 19,250 vehicles per day based on the 2012 DOT Traffic Flow Map. 100th Street at Douglas Avenue is a 4 lane divided roadway with a right turn lane and a left turn lane in each direction. The traffic volume for 100th Street at Douglas Avenue is 17,500 vehicles per day for a total volume in the intersection of 36,750 vehicles per day. Additionally, the Norfolk Southern Railroad crosses Douglas Avenue 190' west of the intersection. Based on guidance provided in MUTCD this signal should be outfitted with a backup power supply. These arterials serve as major routes to office and commercial areas.

Douglas Avenue and 86th Street - Douglas Avenue at 86th Street is a 4 lane divided roadway with dual lefts and a right turn lane in each direction. The traffic volume for Douglas Avenue at 86th Street is 17,100 vehicles per day based on the 2012 DOT Traffic Flow Map. 86th Street at Douglas Avenue is a 4 lane roadway with dual left turns and a right turn lane in each direction. The traffic volume for 86th Street at Douglas Avenue is 19,800 vehicles per day, for a total volume in the intersection of 36,900 vehicles per day. These arterials serve as major routes to office and commercial areas.

86th Street at I-80/35 – 86th Street at the I-80/35 interchange is a 4 lane divided roadway with a right turn lane at each on ramp. The traffic volume for 86th Street at I-35/80 is 25,150 vehicles per day based on the 2012 DOT Traffic Flow Map. This arterial serves as a major route to office and commercial areas.

86th Street and Meredith Drive – 86th Street at Meredith Drive is a 4 lane divided roadway with a right turn lane and a left turn lane in each direction. The traffic volume for 86th Street at Meredith Drive is 23,550 vehicles per day based on the 2012 DOT Traffic Flow Map. Meredith Drive at 86th Street is a 4 lane roadway with a northbound left turn lane, a southbound right turn lane, and a southbound left turn lane.

B. NARRATIVE CONT.

The traffic volume for Meredith Drive at 86th Street is 11,800 vehicles per day for a total volume in the intersection of 35,350 vehicles per day. These arterials serve as major routes to office and commercial areas.

86th Street and Plum Drive – The intersection of 86th Street and Plum Drive is a T-intersection. 86th Street at Plum Drive is a 4 lane divided roadway with a southbound right turn lane, southbound left turn lane, and a northbound left turn lane. The traffic volume for 86th Street at Plum Drive is 22,550 vehicles per day based on the 2012 DOT Traffic Flow Map. Plum Drive west of 86th Street is a 4 lane divided roadway with an eastbound left turn lane. The traffic volume for Plum Drive at 86th Street is 5,400 vehicles per day for a total volume in the intersection of 27,950 vehicles per day. 86th Street is an arterial that serves as a major route to office and commercial areas, while Plum Drive is a collector that primarily serves a commercial area.

During a power outage in the City of Urbandale the affected signals cease to operate, creating a blacked out signal condition. This condition requires that drivers treat the intersection as an all way stop. However, in many instances drivers on the major street will treat this as a green and proceed through the intersection.

During a power outage the Public Works Department will mobilize and install temporary signs. This is a time consuming process as staff must first travel to the facility, load the signs, travel to the affected intersections, and install the signage. Depending on the severity of the power outage the City may or may not have enough signs to cover all impacted intersections. During this time public works staff and police personnel are unable to focus on their primary duties. The response time is increased when the outages occur outside of business hours as staff has to be notified and travel from their residences to the public works facility to load the signs.

The use of LED traffic signal indicators has made it possible to install battery backup units that can provide power during electrical outages. The battery backup unit can provide full operation of a traffic signal for over five hours. The additional hours of operation provided by battery backups during a power outage will allow for the continued operation of the signal while the electrical supply is restored. During outages that exceed the battery life, the additional hours will allow for signage to be installed at a controlled intersection, thereby reducing the risk to staff. The intersections that are equipped with a battery backup will provide a safer environment for the traveling public and city staff by reducing traffic confusion, congestion and delays, and limiting the exposure of city of staff to traffic.

In conjunction with the installation of the battery backup system additional modifications will be made to various signals as needed. These modifications include the installation of a media switch, conflict monitor, and card rack modifications. The conflict monitor will be updated at 6 of the intersections. This update will replace the existing monitor with a smart monitor that will communicate directly with the traffic signal monitoring system. This will provide notification when the system is operating on the battery backup, which will allow staff to analyze the

B. NARRATIVE CONT.

problem remotely and make more timely repairs or to install signage if the outage is likely to exceed the battery life of the backup system.

By installing battery backups at 100th Street and Douglas Avenue, the intersection will be brought into compliance with MUTCD guidance for signals at railroad crossings.

The installation of battery backups at these critical intersections will increase public safety by reducing driver confusion and traffic congestion during power outages. Additionally, this will reduce the exposure of City staff to traffic in an uncontrolled intersection, and allow staff to focus on their primary duties. The continuous signal operation provided by battery backup systems during a power outage will allow for improved safety and traffic flow as well as reduce the traffic congestion and limit the potential for accidents.

C. ITEMIZED BREAKDOWN OF COSTS

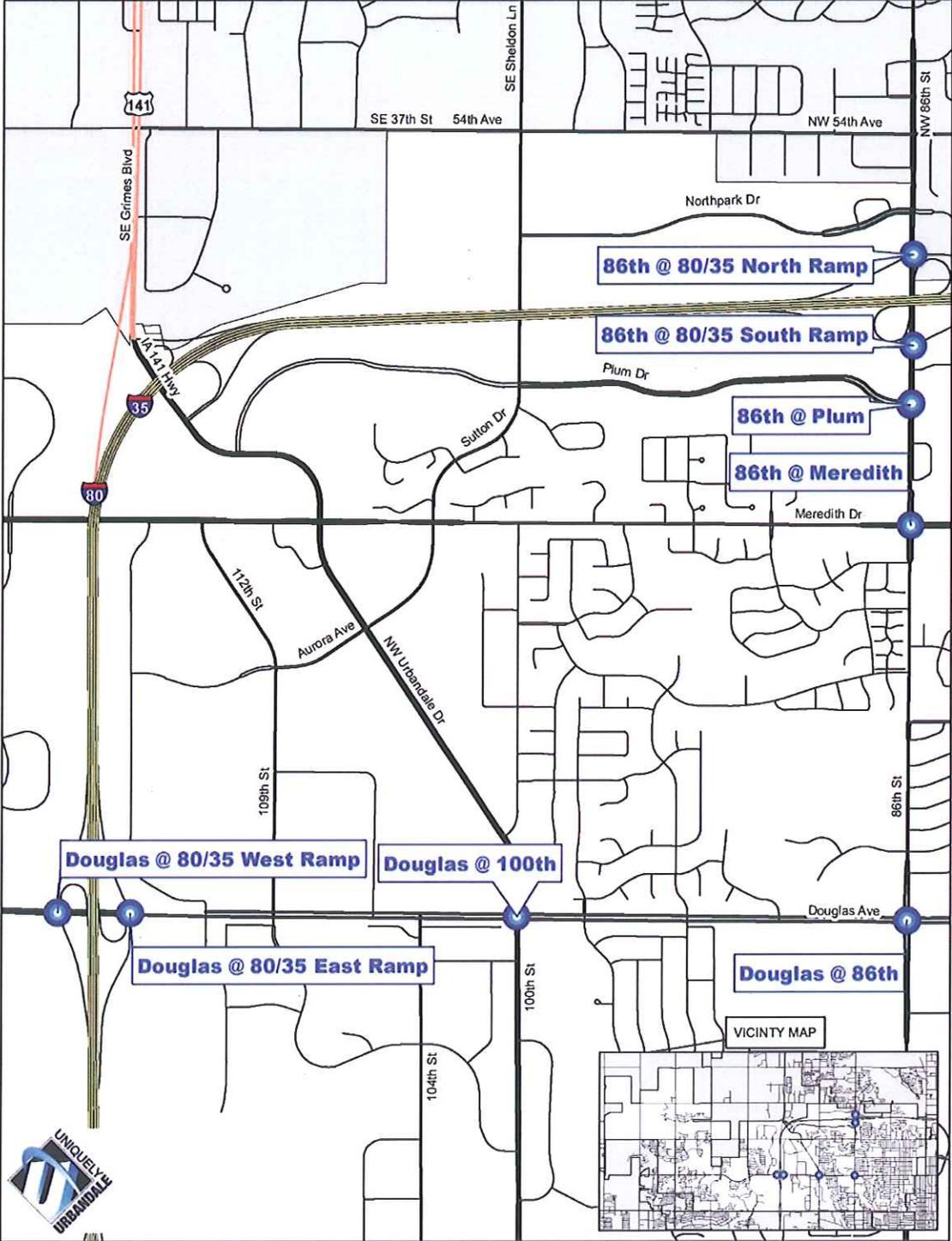
Intersection	Battery Backup	Media Switch	Conflict Monitor	Card Rack Modifications	Total
Douglas & I-35/80 West Ramp	\$6,500.00	\$1,200.00	\$2,000.00	-	\$9,700.00
Douglas & I-35/80 East Ramp	\$6,500.00	\$1,200.00	\$2,000.00	-	\$9,700.00
Douglas Avenue & 100 th Street	\$6,500.00	\$1,200.00	\$2,000.00	-	\$9,700.00
Douglas Avenue & 86 th Street	\$6,500.00	\$1,200.00	-	-	\$7,700.00
86 th Street & I-35/80 South Ramp	\$6,500.00	\$1,200.00	\$2,000.00	\$3,000.00	\$12,700.00
86 th Street & I-35/80 North Ramp	\$6,500.00	\$1,200.00	\$2,000.00	\$3,000.00	\$12,700.00
86 th Street & Meredith Drive	\$6,500.00	\$1,200.00	\$2,000.00	-	\$9,700.00
86 th Street & Plum Drive	\$6,500.00	\$1,200.00	-	-	\$7,700.00
				TOTAL	\$79,600.00*

* Unit prices are based on previously received contractor's bids for installation and material costs provided by suppliers adjusted for the 2014 construction schedule.

D. TIME SCHEDULE

TSIP Funding Application due	August 15, 2013
TSIP Notification of Award	December 15, 2013
TSIP Funding Available	July 1, 2014
Project Letting	July 15, 2014
Project Construction	July, 2014
Project Completion	November, 2014

E. LOCATION MAP



F. PICTURES



Douglas Avenue at I-35/80
West Ramp – Looking East



Douglas Avenue at I-35/80
West Ramp – Looking West

F. PICTURES CONT.



Douglas Avenue at I-35/80
East Ramp – Looking East



Douglas Avenue at I-35/80
East Ramp – Looking West

F. PICTURES CONT.



Douglas Avenue and 100th Street
Looking North



Douglas Avenue and 100th Street
Looking South

F. PICTURES CONT.



Douglas Avenue and 100th Street
Looking East



Douglas Avenue and 100th Street
Looking West

F. PICTURES CONT.



Douglas Avenue and 86th Street
Looking North



Douglas Avenue and 86th Street
Looking South

F. PICTURES CONT.



Douglas Avenue and 86th Street
Looking East



Douglas Avenue and 86th Street
Looking West

F. PICTURES CONT.



86th Street at I-35/80
North Ramp - Looking North



86th Street at I-35/80
North Ramp - Looking South

F. PICTURES CONT.



86th Street at I-35/80
South Ramp - Looking North



86th Street at I-35/80
South Ramp - Looking South

F. PICTURES CONT.



86th Street and Meredith Drive
Looking North



86th Street and Meredith Drive
Looking South

F. PICTURES CONT.



86th Street and Meredith Drive
Looking East



86th Street and Meredith Drive
Looking West

F. PICTURES CONT.



86th Street and Plum Drive
Looking North



86th Street and Plum Drive
Looking South

F. PICTURES CONT.



86th Street and Plum Drive
Looking East

G. PLAN LAYOUT

NOT APPLICABLE

H. TRAFFIC VOLUMES

2012 Two-Way Daily Traffic Volumes (Vehicles per Day)

Douglas Avenue at I-35/80	22,500
Douglas Avenue at 100 th Street	19,250
100 th Street at Douglas Avenue	17,500
Douglas Avenue at 86 th Street	17,100
86 th Street at Douglas Avenue	19,800
86 th Street at I-35/80	25,150
86 th Street at Plum Drive (West)	22,550
Plum Drive (West) at 86 th Street	5,400

2012 Intersection Daily Traffic Volumes (Vehicles per Day)

Douglas Avenue and 100 th Street	36,750
Douglas Avenue and 86 th Street	36,900
86 th Street and Meredith Drive	35,350
86 th Street and Plum Drive (West)	27,950

I. SIGNAL LAYOUT

NOT APPLICABLE

I. BENEFIT / COST WORKSHEET

NOT APPLICABLE

Application for TRAFFIC SAFETY FUNDS

GENERAL INFORMATION

Location / Title of Project INTERSECTION OF W. RIDGEWAY AVENUE AND W. 11TH STREET

Applicant City of Waterloo

Contact Person Mohammad Elahi Title Traffic Engineer

Complete Mailing Address 408 E. 6th Street
Waterloo, Iowa 50703

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

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

Co-Applicant(s) _____

Contact Person _____ Title _____

Complete Mailing Address _____

Phone _____ E-Mail _____
(Area Code)

PLEASE COMPLETE THE FOLLOWING PROJECT INFORMATION:

Application Type

Site Specific
Traffic Control Device
Safety Study

Funding Amount

Total Project Cost \$ 38,000

Safety Funds Requested \$ 38,000

APPLICATION CERTIFICATION FOR LOCAL GOVERNMENT

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

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

Representing the City of Waterloo

Signed: Mohammad Elahi Aug 14-2013
Signature Date Signed

Mohammad Elahi
Typed Name

Attest: Susan Holmes 081413
Signature Date Signed

Susan Holmes
Typed Name

INTERSECTION OF W. RIDGEWAY AVENUE AND W. 11TH STREET SIGNALIZED CROSSING

B. NARRATIVE

The intersection of W. Ridgeway Avenue with W.11th Street has a non-standard traffic control setup. This proposal is for replacing the existing control with an upgraded signalized crossing. W. 11th is stop sign controlled while Ridgeway has pedestrian actuated traffic signals. Both Ridgeway and W. 11th are arterial streets. Ridgeway has 35 mph posted speed limit. W. 11th has 30 mph posted speed limit. The mix of stop sign and signal control has traffic safety implications due to potential conflicting messages it can give to the drivers. Confusion can take place during red and signal change interval. During green the main line drivers do not expect a side street vehicle to turn in front of them but a stop sign driver might use an acceptable gap to make a turn. MUTCD Section 4C.05 Part 06-A indicates that if pedestrian signalized crossing is installed at an intersection it should also control the minor-street and should be traffic-actuated. MUTCD Section 2B.04 Part 10 states STOP signs shall not be used in conjunction with any traffic control signal operation, unless the side street flashes red all the time. W.11th has a stop sign and a flashing red signals which turn into solid red when the push button is activated.

The existing signals are pedestal mounted and have a visibility problem due to the vertical alignment of Ridgeway Avenue. Section 4D.12 of the MUTCD requires continuous visibility at 390 feet for 40 mph 85th percentile speeds. Westbound approach Ridgeway has a vertical curve with a high point at about 100 feet from the intersection as shown in the picture below. It limits the visibility of pedestal mounted signals and the pedestrian crossing.



Ridgeway Avenue: Looking East at Westbound Approach

To upgrade and update the traffic control it is proposed to replace the pedestal mounted signals with mast arm mounted signals and to install one signal head over each lane. To eliminate the mix of stop sign and signal control we can either convert the intersection to a fully-actuated signalized intersection, or install pedestrian hybrid beacons also known as HAWK signals. HAWK signals will require installation 100' away from the stop sign. The HAWK is proposed because it will help eliminate the sight distance problem, and is cost effective. HAWK is proposed to be installed close to about 120' east of the intersection. The installation of mast-arm signals and the relocation will increase visibility.

C. ITEMIZED BREAKDOWN OF COST

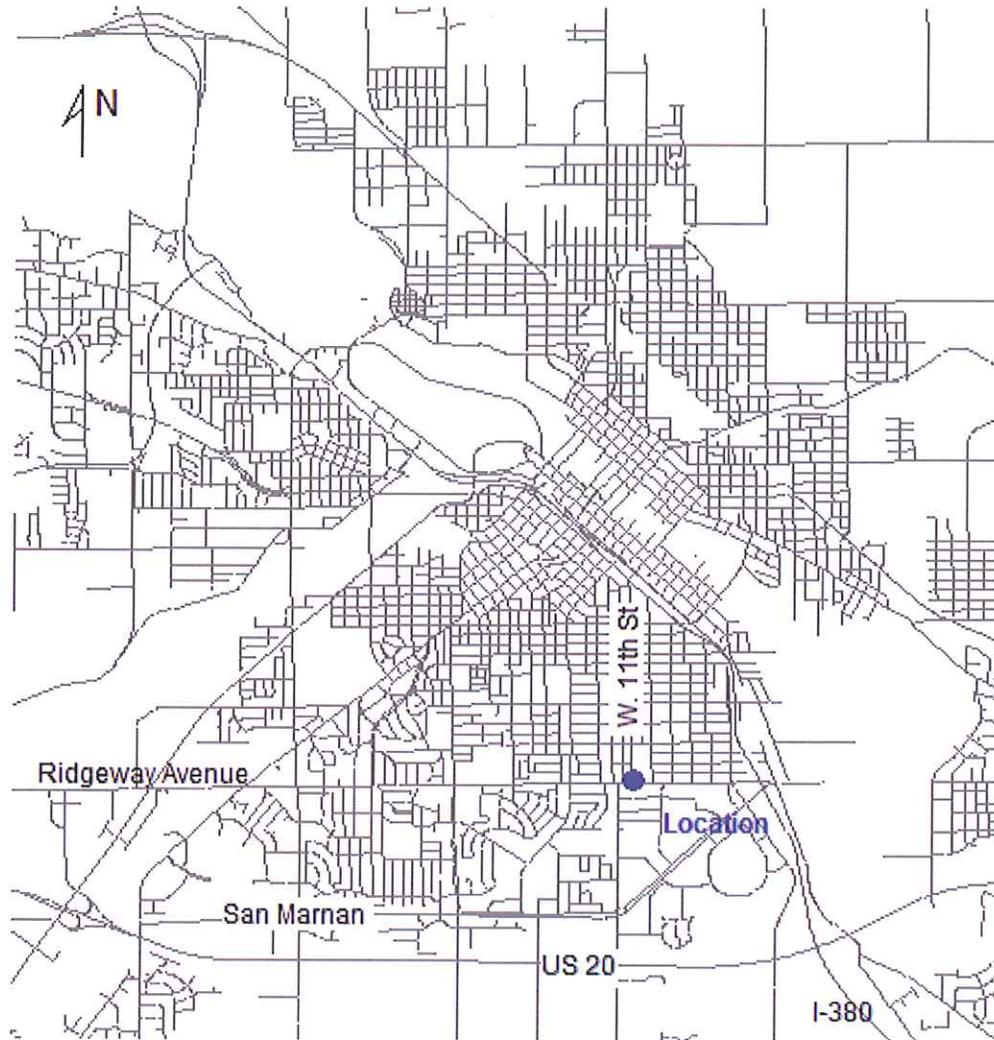
1	MAST-ARM POLES COMPLETE WITH LUMINAIRE EXTENSION, TRANSFORMER BASE AND ANCHOR BOLTS		17,000	
2	SIGNAL EQUIPMENT		10,600	
	2-1) PEDESTAL POLE WITH BREAKAWAY BASE AND ANCHOR BOLTS	1,200		
	2-2) 3-SECTION LED HYBRID SIGNAL HEADS, RYG 12" SOLID BALL COMPLETE WITH CABLE-TYPE MOUNTING BRACKETS	4,200		
	2-3) COUNTDOWN PEDESTRIAN SIGNAL HEADS AND MOUNTING HARDWARE	800		
	2-4) SIGNAL CONTROLLER AND CABINET	4,000		
	2-5) PEDESTRIAN PUSH BUTTONS AND SIGNS	400		
3	WIRES AND CABLES		500	
4	CONDUIT		500	
5	CONDUIT, BORE UNDER PAVEMENT		1,000	
6	INCIDENTALS (ELECTRICAL CONNECTORS & SUPPLIES, FORMS, ETC.)		1000	
7	SIGNS		400	
8	CONCRETE		3,200	
	8-1) CONCRETE FOR SIGNAL POLE BASES	2,000		
	8-2) CONCRETE FOR SIDEWALK AND PEDESTRIAN RAMPS	1,200		
9	STEEL REBARS AND TIES FOR BASES		1,200	
10	LUMINAIRE, LED		500	
11	DETECTABLE PEDESTRIAN PANELS		600	
12	PAVEMENT MARKINGS		0	BY CITY
13	TRAFFIC CONTROL		0	BY CITY
14	CONTINGENCY		1,500	
TOTAL:			\$38,000	

D. TIME SCHEDULE

D

	2014												2015											
	FEB	MARCH	APRIL	MAY	JUNE	JULY	AUGUST	SEPT	OCT	NOV	DEC	JAN	FEB	MARCH	APRIL	MAY	JUNE	JULY						
START	◆																							
DOT Agreement Exchange	■																							
Contract Documents & DOT Review & Approval				■																				
Purchasing								■																
Installation											■													
END																		◆						

E. LOCATION MAP



F. COLOR PICTURES

F



Looking East



W. 11th Looking South: The Property Owner's Rocks Garden is Protection Against Errant Drivers.



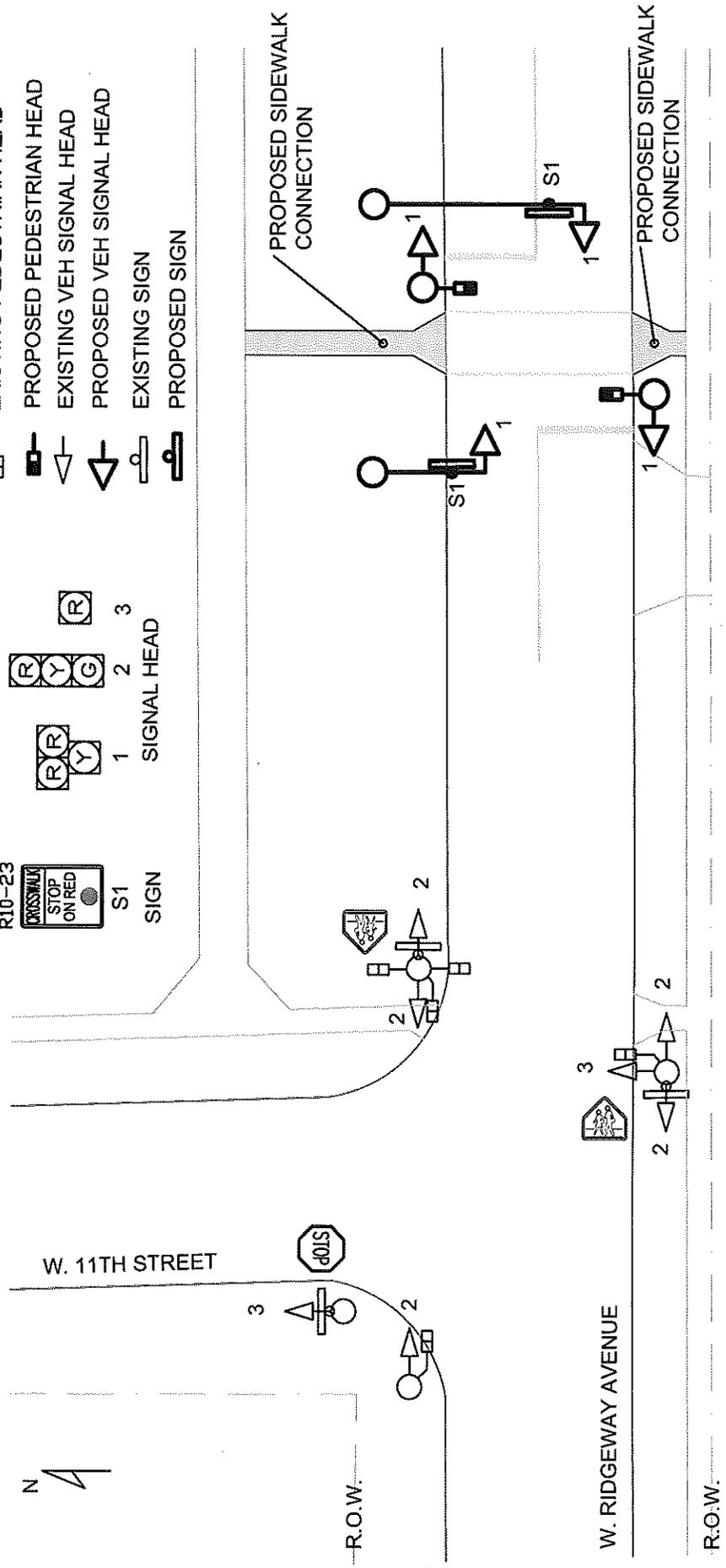
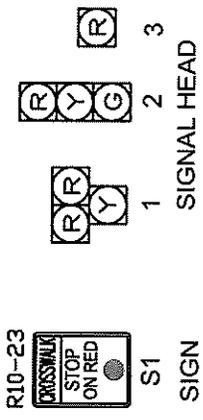
Westbound Approach

G

R.O.W. NOTE: THE ENTIRE NORTHEAST CORNER IS OWNED BY THE CITY OF WATERLOO.

LEGEND

- EXISTING PEDESTAL POLE
- PROPOSED PEDESTAL POLE
- PROPOSED MAST-ARM POLE
- EXISTING PEDESTRIAN HEAD
- PROPOSED PEDESTRIAN HEAD
- EXISTING VEH SIGNAL HEAD
- PROPOSED VEH SIGNAL HEAD
- EXISTING SIGN
- PROPOSED SIGN



G. EXISTING AND PROPOSED SIGNALIZED CROSSING
INTERSECTION OF W. 11TH STREET AND W. RIDGEWAY AVENUE

H. AERIAL PHOTOGRAPH

H



I. SIGNAL LAYOUT

Signal layout is shown on part "G" which shows the existing and the proposed plans.

Application for TRAFFIC SAFETY FUNDS

GENERAL INFORMATION

Location / Title of Project IA Highway 39 & Avenue C

Applicant City of Denison

Contact Person Terence E. Crawford Title City Manager/Engineer

Complete Mailing Address 111 North Main Street
Denison, Iowa 51442

Phone 712-263-3143 E-Mail citymanager@denisonia.com
(Area Code)

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

Co-Applicant(s) _____

Contact Person _____ Title _____

Complete Mailing Address _____

Phone _____ E-Mail _____
(Area Code)

PLEASE COMPLETE THE FOLLOWING PROJECT INFORMATION:

Application Type

Site Specific
Traffic Control Device
Safety Study

Funding Amount

Total Project Cost \$ 210,000.00

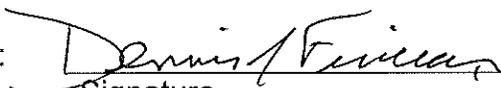
Safety Funds Requested \$ 105,000.00

APPLICATION CERTIFICATION FOR LOCAL GOVERNMENT

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

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

Representing the City of Denison, Iowa

Signed:  8-6-13
Signature Date Signed

Dennis Fineran, Mayor
Typed Name

Attest:  8-6-13
Signature Date Signed

Lisa K. Koch
Typed Name

RESOLUTION NO. 2013-27

**A RESOLUTION APPROVING TRAFFIC SAFETY
IMPROVEMENT PROGRAM FUNDING APPLICATION FOR
IOWA HIGHWAY 39 AND AVENUE C IN DENISON, IOWA**

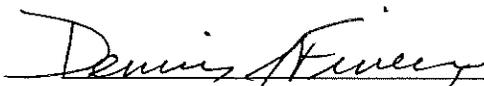
WHEREAS, the City of Denison desires to upgrade permanent traffic signals at the intersection of Iowa Highway 39 with Avenue C; and

WHEREAS, the City of Denison, Iowa, desires to determine whether any traffic safety improvement funds would be available to help finance this project.

NOW, THEREFORE, BE IT RESOLVED BY THE CITY COUNCIL, CITY OF DENISON, IOWA:

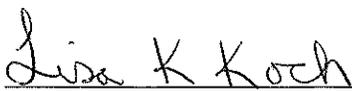
That the Traffic Safety Improvement Program Funding Application for upgrading permanent traffic signals at the intersection of Iowa Highway 39 with Avenue C in the City of Denison, Iowa, is hereby approved, and the Mayor and City Clerk are hereby authorized to execute such application and deliver it to the Iowa Department of Transportation.

Passed and approved by the City Council of the City of Denison, Iowa, this 6th day of August, 2013.



Dennis Fineran, Mayor

ATTEST:



Lisa K. Koch, City Clerk

(CITY SEAL)

It was moved by Council member Ahart and seconded by Council member Mahrt that the foregoing Resolution be adopted.

The motion was duly put to vote of the Council, the ayes and nays were called and the vote thereon was as follows:

AYES: Ahart, Mahrt, Rodriguez, Hough

NAYS: None

ABSENT: Leinen

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

CERTIFICATE

I, Lisa K. Koch, City Clerk of the City of Denison, Iowa, hereby certify that the foregoing is a true copy of a Resolution adopted by the City Council of the City of Denison, Iowa, at a regular meeting of the City Council held on the 6th day of August, 2013, and the vote thereon as recorded in the records of the City now in my custody.

Dated this 6th day of August, 2013.

Lisa K Koch
Lisa K. Koch, City Clerk

(CITY SEAL)

B. NARRATIVE

The existing traffic signals at the intersection of Iowa Highway 39 and Avenue C were originally installed in 1991.

When the signals were installed in the fall of 1991, widening the intersection was considered but was not done due to the lack of funds available to the City of Denison at that time.

Over the years, it has become obvious that the intersection needs to be expanded to allow safe truck turning movements with the signal poles in place. The poles have been hit by turning trucks numerous times. Damage has ranged from simply knocking off traffic signal heads to actually dislodging a mast arm pole from its anchor bolts on the footing and nearly knocking the mast arm and pole over. Accidents caused by turning trucks being in the wrong lane or by vehicles backing up to avoid being hit and colliding with other vehicles has become the more common/acute problem.

Most of the crashes are a direct result of the intersection being too small for large turning trucks with the traffic signal poles positioned where they are. The trucks have either sideswiped a vehicle stopped in a queue of vehicles waiting for the light to go green or caused them to back up in order to miss a collision and to strike another vehicle behind them.

The proposed project would add pavement widening at each corner of the intersection so that the turning trucks can stay in their lane throughout the entire turning movement. The traffic signal mast arms and poles would be replaced with longer mast arms so that the new pole would be a minimum of ten feet from the edge of the newly widened pavement.

Pre-emption equipment will be upgraded for a safer intersection during an emergency.

Loop and magnetic detection equipment will be replaced, if needed, and the controller upgraded.

The entire intersection inside the widening should be overlaid with HMA to eliminate potholes and rutting in the existing pavement. The City of Denison hereby requests that this expense, along with the widening, be shared by the Iowa Department of Transportation.

C. ITEMIZED BREAKDOWN OF COST

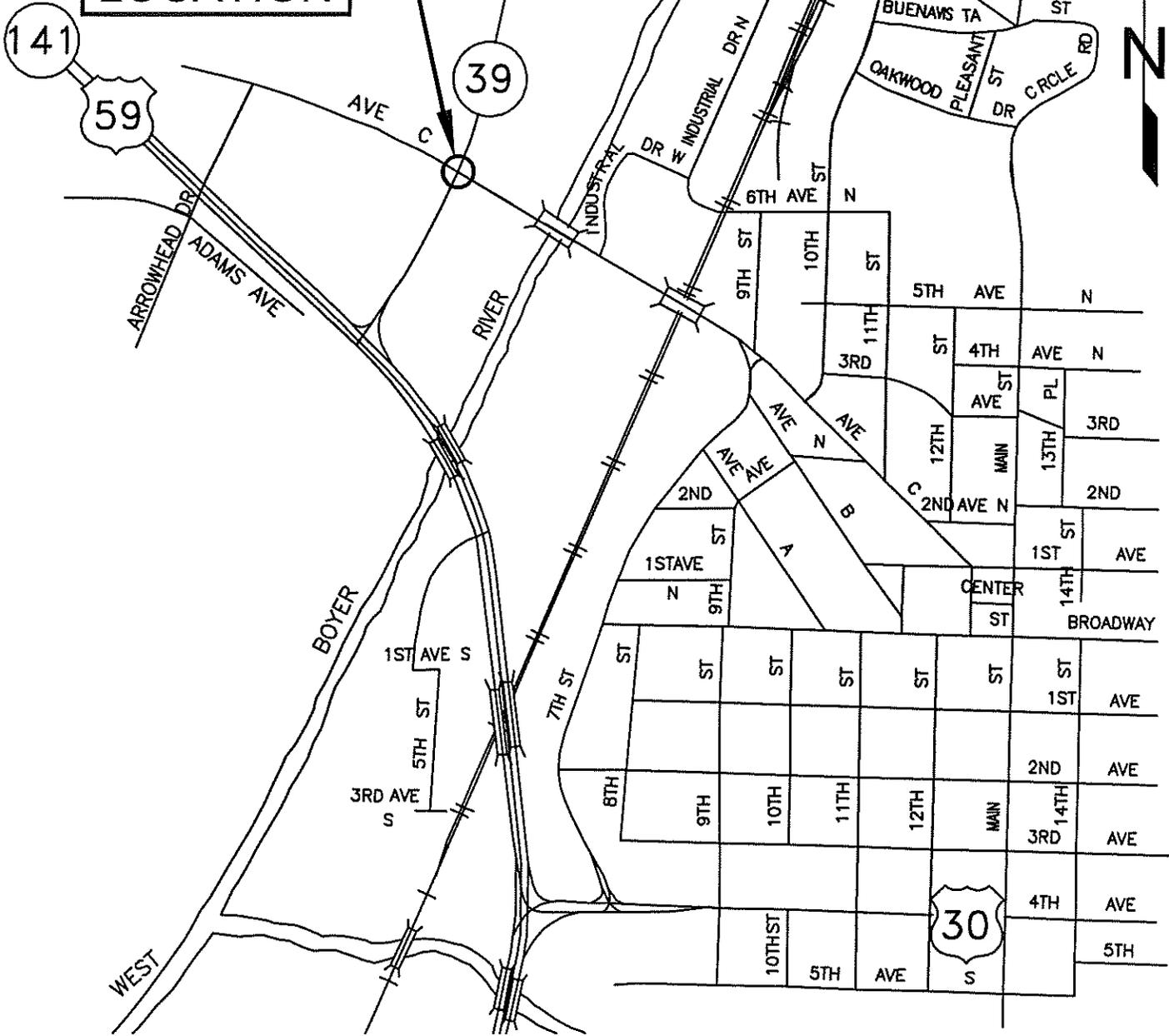
1. MAST ARMS, 4 @ \$12,000.00	\$ 48,000.00	
2. SIGNAL HEADS MAST-ARM MTD., 4 @ \$750.00	\$ 3,000.00	
3. SIGNAL HEADS, POLE MTD., 8 @ \$700.00	\$ 5,600.00	
4. TRAFFIC SIGNAL CABLE & LOOP DETECTOR WIRE	\$ 3,500.00	
5. PEDESTRIAN PUSH BUTTON, 4 @ \$250.00	\$ 1,000.00	
6. PEDESTRIAN SIGNAL, 6 @ \$550.00	\$ 3,300.00	
7. CONTROLLER, 1 @ \$15,000.00	\$ 15,000.00	
8. CONDUIT, JUNCTION BOXES AND MISCELLANEOUS MATERIALS	\$ 5,000.00	
9. MAGNETIC DETECTORS, 2 @ \$2,500.00	\$ 5,000.00	
10. EMERGENCY VEHICLE PRE-EMPTION	\$ 8,500.00	
11. OTHER INTERSECTION PRE-EMPTION	<u>\$ 7,100.00</u>	
TOTAL ESTIMATED MATERIALS COST		\$ 105,000.00
TSIP FUNDS REQUESTED		<u>\$ 105,000.00</u>
12. RE-PAINT SIGNAL MAST ARMS & POLES @ HIGHWAY 30 & SOUTH 16 TH STREET, SOUTH 20 TH STREET	\$ 10,500.00	
13. EARTHWORK, 750 CY @ \$12.00/CY	\$ 9,000.00	
14. SEEDING, LS	\$ 2,500.00	
15. PAVING, 540 SY @ \$50.00/SY	<u>\$ 27,000.00</u>	
SUBTOTAL		\$ 154,000.00
16. PAVEMENT MARKING	\$ 4,000.00	
17. SIGNALS, INSTALL	<u>\$ 55,000.00</u>	
TOTAL		<u>\$ 210,000.00</u>
LESS TSIP FUNDS		<u>\$ 105,000.00</u>
SUBTOTAL ESTIMATED CONSTRUCTION COSTS		\$ 105,000.00
REQUESTED IDOT FUNDING ON INTERSECTION WIDENING		<u>\$ 38,500.00</u>
CITY OF DENISON ESTIMATED CONSTRUCTION COST		\$ 66,500.00

D. TIME SCHEDULE

- | | |
|-----------------------------|----------|
| 1. GRANT APPROVAL | 08/01/13 |
| 2. IDOT COMMISSION APPROVAL | 12/01/13 |
| 3. DESIGN COMPLETED | 02/01/13 |
| 4. TAKE BIDS | 04/01/13 |
| 5. COMPLETE CONSTRUCTION | 10/01/13 |

CITY OF DENISON

**PROJECT
LOCATION**



120 S. MAIN, P.O. BOX 220, DENISON, IOWA 51442
 PHONE: (712)263-8118 FAX: (712)263-2181
 SUNDQUISTENGINEERING.COM

LOCATION MAP
 IA. HWY. NO. 39 AND AVENUE C
 DENISON, IOWA

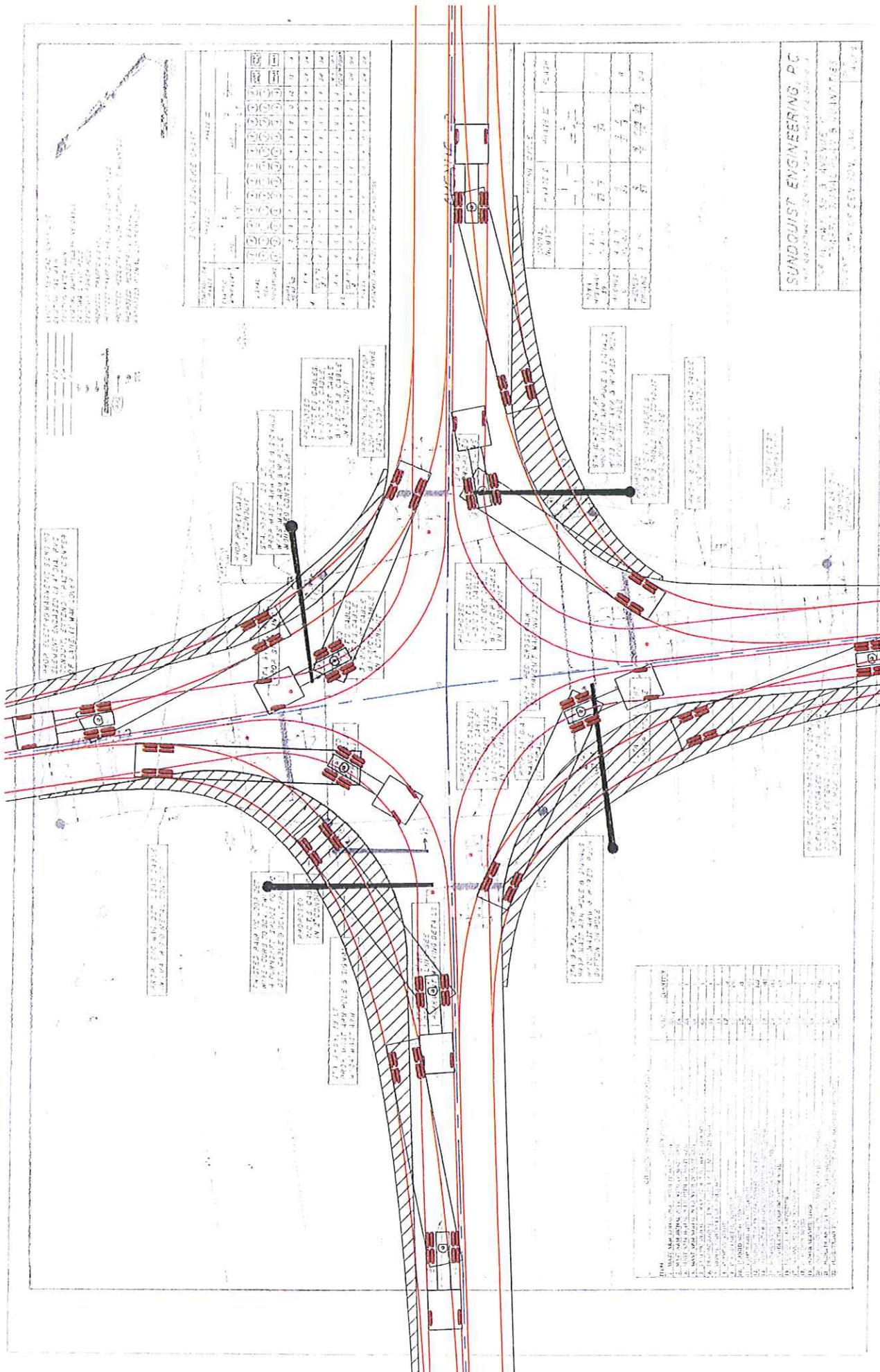


TABLE 1
TOWER DATA

TOWER NO.	TYPE	HEIGHT (FT)	SPACING (FT)	LOAD (KIP)	WIND (PSF)	ICE (IN)	TEMP (°F)	WIND DIR.	ICE DIR.	TEMP DIR.
1	1	100	100	100	10	1	50	0	0	0
2	1	100	100	100	10	1	50	0	0	0
3	1	100	100	100	10	1	50	0	0	0
4	1	100	100	100	10	1	50	0	0	0
5	1	100	100	100	10	1	50	0	0	0
6	1	100	100	100	10	1	50	0	0	0
7	1	100	100	100	10	1	50	0	0	0
8	1	100	100	100	10	1	50	0	0	0
9	1	100	100	100	10	1	50	0	0	0
10	1	100	100	100	10	1	50	0	0	0
11	1	100	100	100	10	1	50	0	0	0
12	1	100	100	100	10	1	50	0	0	0
13	1	100	100	100	10	1	50	0	0	0
14	1	100	100	100	10	1	50	0	0	0
15	1	100	100	100	10	1	50	0	0	0
16	1	100	100	100	10	1	50	0	0	0
17	1	100	100	100	10	1	50	0	0	0
18	1	100	100	100	10	1	50	0	0	0
19	1	100	100	100	10	1	50	0	0	0
20	1	100	100	100	10	1	50	0	0	0
21	1	100	100	100	10	1	50	0	0	0
22	1	100	100	100	10	1	50	0	0	0
23	1	100	100	100	10	1	50	0	0	0
24	1	100	100	100	10	1	50	0	0	0
25	1	100	100	100	10	1	50	0	0	0
26	1	100	100	100	10	1	50	0	0	0
27	1	100	100	100	10	1	50	0	0	0
28	1	100	100	100	10	1	50	0	0	0
29	1	100	100	100	10	1	50	0	0	0
30	1	100	100	100	10	1	50	0	0	0
31	1	100	100	100	10	1	50	0	0	0
32	1	100	100	100	10	1	50	0	0	0
33	1	100	100	100	10	1	50	0	0	0
34	1	100	100	100	10	1	50	0	0	0
35	1	100	100	100	10	1	50	0	0	0
36	1	100	100	100	10	1	50	0	0	0
37	1	100	100	100	10	1	50	0	0	0
38	1	100	100	100	10	1	50	0	0	0
39	1	100	100	100	10	1	50	0	0	0
40	1	100	100	100	10	1	50	0	0	0
41	1	100	100	100	10	1	50	0	0	0
42	1	100	100	100	10	1	50	0	0	0
43	1	100	100	100	10	1	50	0	0	0
44	1	100	100	100	10	1	50	0	0	0
45	1	100	100	100	10	1	50	0	0	0
46	1	100	100	100	10	1	50	0	0	0
47	1	100	100	100	10	1	50	0	0	0
48	1	100	100	100	10	1	50	0	0	0
49	1	100	100	100	10	1	50	0	0	0
50	1	100	100	100	10	1	50	0	0	0

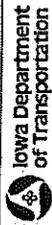
TABLE 2
LOAD DATA

TOWER NO.	LOAD (KIP)	WIND (PSF)	ICE (IN)	TEMP (°F)
1	100	10	1	50
2	100	10	1	50
3	100	10	1	50
4	100	10	1	50
5	100	10	1	50
6	100	10	1	50
7	100	10	1	50
8	100	10	1	50
9	100	10	1	50
10	100	10	1	50
11	100	10	1	50
12	100	10	1	50
13	100	10	1	50
14	100	10	1	50
15	100	10	1	50
16	100	10	1	50
17	100	10	1	50
18	100	10	1	50
19	100	10	1	50
20	100	10	1	50
21	100	10	1	50
22	100	10	1	50
23	100	10	1	50
24	100	10	1	50
25	100	10	1	50
26	100	10	1	50
27	100	10	1	50
28	100	10	1	50
29	100	10	1	50
30	100	10	1	50
31	100	10	1	50
32	100	10	1	50
33	100	10	1	50
34	100	10	1	50
35	100	10	1	50
36	100	10	1	50
37	100	10	1	50
38	100	10	1	50
39	100	10	1	50
40	100	10	1	50
41	100	10	1	50
42	100	10	1	50
43	100	10	1	50
44	100	10	1	50
45	100	10	1	50
46	100	10	1	50
47	100	10	1	50
48	100	10	1	50
49	100	10	1	50
50	100	10	1	50

SUNDQUIST ENGINEERING PC
 1000 WEST 10TH AVENUE
 DENVER, COLORADO 80202
 PHONE: 303.733.1111
 FAX: 303.733.1112
 WWW: WWW.SUNDQUIST.COM

TABLE 3
REVISIONS

NO.	DATE	DESCRIPTION
1	10/1/00	ISSUED FOR PERMIT
2	10/1/00	ISSUED FOR PERMIT
3	10/1/00	ISSUED FOR PERMIT
4	10/1/00	ISSUED FOR PERMIT
5	10/1/00	ISSUED FOR PERMIT
6	10/1/00	ISSUED FOR PERMIT
7	10/1/00	ISSUED FOR PERMIT
8	10/1/00	ISSUED FOR PERMIT
9	10/1/00	ISSUED FOR PERMIT
10	10/1/00	ISSUED FOR PERMIT
11	10/1/00	ISSUED FOR PERMIT
12	10/1/00	ISSUED FOR PERMIT
13	10/1/00	ISSUED FOR PERMIT
14	10/1/00	ISSUED FOR PERMIT
15	10/1/00	ISSUED FOR PERMIT
16	10/1/00	ISSUED FOR PERMIT
17	10/1/00	ISSUED FOR PERMIT
18	10/1/00	ISSUED FOR PERMIT
19	10/1/00	ISSUED FOR PERMIT
20	10/1/00	ISSUED FOR PERMIT
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31	10/1/00	ISSUED FOR PERMIT
32	10/1/00	ISSUED FOR PERMIT
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34	10/1/00	ISSUED FOR PERMIT
35	10/1/00	ISSUED FOR PERMIT
36	10/1/00	ISSUED FOR PERMIT
37	10/1/00	ISSUED FOR PERMIT
38	10/1/00	ISSUED FOR PERMIT
39	10/1/00	ISSUED FOR PERMIT
40	10/1/00	ISSUED FOR PERMIT
41	10/1/00	ISSUED FOR PERMIT
42	10/1/00	ISSUED FOR PERMIT
43	10/1/00	ISSUED FOR PERMIT
44	10/1/00	ISSUED FOR PERMIT
45	10/1/00	ISSUED FOR PERMIT
46	10/1/00	ISSUED FOR PERMIT
47	10/1/00	ISSUED FOR PERMIT
48	10/1/00	ISSUED FOR PERMIT
49	10/1/00	ISSUED FOR PERMIT
50	10/1/00	ISSUED FOR PERMIT



Abbreviated Crash Report

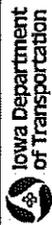
IA HWY 39 and AVENUE C

Report Version 1.2 April 2008

Date	DOT Case #	Agency Case #	City	Crash Sev.	Literal Description
07/28/2003	2003036266		Denison	PDO	AVE C and Iowa 0039 / IOWA 39
07/30/2003	2003036890		Denison	PDO	AVE C and Iowa 0039 / IOWA 39
09/10/2003	2003044803		Denison	PDO	AVE C and Iowa 0039 / IOWA 39
02/26/2004	2004211809		Denison	PDO	Iowa 0039 / IOWA 39 and AVE C
03/15/2004	2004213661		Denison	Poss/Unk	Iowa 0039 / IOWA 39 and AVE C
04/13/2004	2004217870		Denison	PDO	Iowa 0039 / IOWA 39 and AVE C
07/22/2004	2004233564		Denison	PDO	Iowa 0039 / IOWA 39 and AVE C
08/20/2004	2004242793		Denison	PDO	Iowa 0039 / IOWA 39 and AVE C
12/08/2004	2004262605		Denison	PDO	Iowa 0039 / IOWA 39 and AVE C
07/29/2005	2005233287		Denison	PDO	Iowa 0039 / IOWA 39 and AVE C
09/12/2005	2005248339		Denison	Poss/Unk	Iowa 0039 / IOWA 39 and AVE C
10/28/2005	2005255560		Denison	Poss/Unk	Iowa 0039 / IOWA 39 and AVE C
11/05/2006	2006251531	064341	Denison	Minor	IOWA 0039 / IOWA 39 AND AVE C
05/03/2007	2007372911	071644	Denison	PDO	Iowa 0039 / IOWA 39 and AVE C
07/03/2007	2007384544	072610	Denison	PDO	Iowa 0039 / IOWA 39 and AVE C
09/29/2007	2007396264	073858	Denison	PDO	Iowa 0039 / IOWA 39 and AVE C
02/11/2008	2008427431	080475	Denison	PDO	Iowa 0039 / IOWA 39 and AVE C
04/17/2008	2008437100	081390	Denison	PDO	Iowa 0039 / IOWA 39 and AVE C
08/28/2008	2008458161	083237	Denison	Poss/Unk	AVE C
09/05/2008	2008458163	083362	Denison	Minor	AVE C and Iowa 0039 / IOWA 39
09/22/2008	2008461049	083612	Denison	PDO	AVE C and Iowa 0039 / IOWA 39
10/06/2008	2008464429	083792	Denison	PDO	AVE C AND IOWA 0039 / IOWA 39
02/06/2009	2009491952	090456	Denison	PDO	AVE C and Iowa 0039 / IOWA 39
11/01/2010	2010597915	104225	Denison	PDO	Iowa 0039 / IOWA 39 and AVE C
01/15/2011	2011612670	110173	Denison	PDO	Iowa 0039 / IOWA 39 and AVE C
01/24/2011	2011614227	110286	Denison	PDO	Iowa 0039 / IOWA 39 and AVE C
10/30/2011	2011653897	113697	Denison	PDO	Iowa 0039 / IOWA 39 and AVE C
11/17/2011	2011658357	113920	Denison	PDO	Iowa 0039 / IOWA 39 and AVE C
12/05/2011	2011660503	114134	Denison	PDO	Iowa 0039 / IOWA 39
03/29/2012	2012679333	120967	Denison	PDO	Iowa 0039 / IOWA 39 and AVE C
05/05/2012	2012684270	121389	Denison	PDO	AVE C
06/20/2012	2012690831	122033	Denison	PDO	Iowa 0039 / IOWA 39 and AVE C

7/29/2013

Crash Mapping Analysis Tool



Abbreviated Crash Report

IA HWY 39 and AVENUE C

Report Version 1.2 Mar 2005

Date	DOT Case #	Agency Case #	City	Crash Sev.	Literal Description
08/10/2012	2012697960	122711	Denison	Poss/Unk AVE C	
12/14/2012	2012717397	124125	Denison	PDO AVE C AND STATE 39/IOWA 39	

Selection Filter:

None

Analyst: DRD

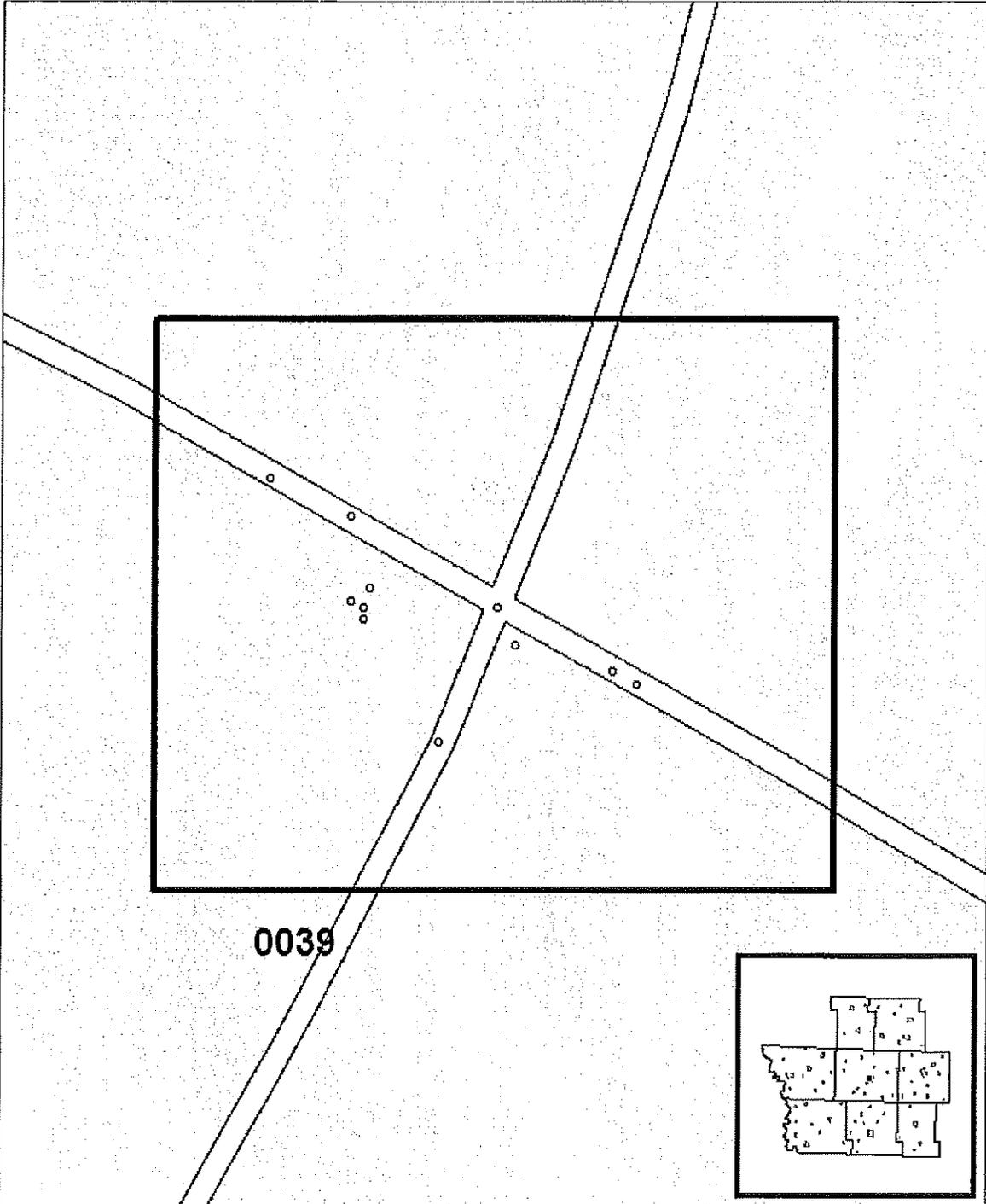
Notes: CRASHES 2003-2012

Location Map

IA HWY 39 and AVENUE C

Incidents: 34

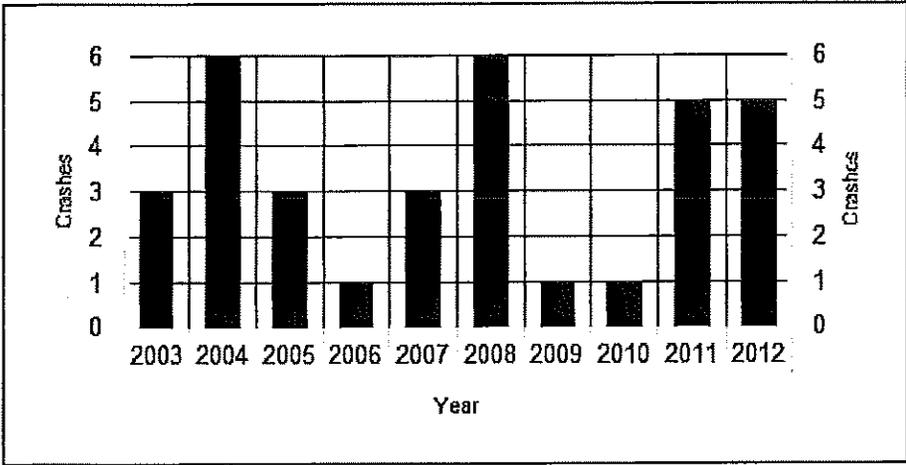
Report Version 1 | Mar 2013



Analyst: DRD

Notes: CRASHES 2003-2012

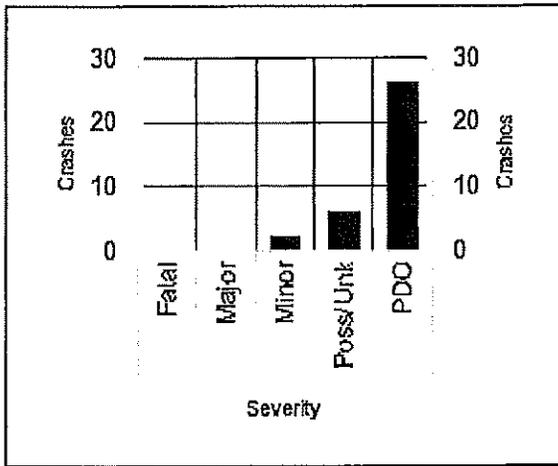
IA HWY 39 and AVENUE C



7/29/2013

Incidents: 34

IA HWY 39 and AVENUE C



7/29/2013

Incidents: 34



Major Cause Summary

IA HWY 39 and AVENUE C

Report Version 1.1 Jan 2008

Analysis Years: 2003 [3], 2004 [6], 2005 [3], 2006 [1], 2007 [3], 2008 [6], 2009 [1], 2010 [1], 2011 [5], 2012 [5]

Crash Summary:

Fatal	-
Major Injury	-
Minor Injury	2
Possible/Unknown	6
PDO	26
Total Crashes	34

Injury Summary:

Fatal	-
Major Injury	-
Minor Injury	2
Possible	8
Unknown	2
Total Injuries	12

Surface Condition Summary:

Dry	26
Wet	5
Ice	1
Snow	2
Slush	-
Sand/Dirt/Oil/Gravel	-
Water	-
Other	-
Unknown	-
Not Reported	-
Total Crashes	34

TOT Property Damage: \$143,810

AVG Property Damage: \$4,230

Major Cause Summary:

- | | |
|---|--|
| Animal | Improper Backing |
| 8 Ran Traffic Signal | Illegally Parked/Unattended |
| Ran Stop Sign | 1 Swerving/Evasive Action |
| 1 Crossed Centerline | Over-Correcting/Over-Steering |
| FTYROW: At Uncontrolled Intersection | Downhill Runaway |
| FTYROW: Making Right Turn on Red Signal | Equipment Failure |
| FTYROW: From Stop Sign | Separation of Units |
| FTYROW: From Yield Sign | Ran Off Road - Right |
| 7 FTYROW: Making Left Turn | Ran Off Road - Straight |
| FTYROW: From Driveway | 1 Ran Off Road - Left |
| FTYROW: From Parked Position | 1 Lost Control |
| FTYROW: To Pedestrian | Inattentive/Distracted By: Passenger |
| FTYROW: Other (explain in narrative) | 1 Inattentive/Distracted By: Use of Phone or Other |
| Traveling Wrong Way or on Wrong Side of Rd | Inattentive/Distracted By: Fallen Object |
| 2 Driving Too Fast for Conditions | Inattentive/Distracted By: Fatigued/Asleep |
| Exceeded Authorized Speed | 2 Other: Vision Obstructed |
| 1 Made Improper Turn | Oversized Load/ Oversized Vehicle |
| Improper Lane Change | Cargo/Equipment Loss or Shift |
| 2 Followed Too Close | 6 Other: Other Improper Action |
| Disregarded Railroad Signal | Unknown |
| Disregarded Warning Sign | Other: No Improper Action |
| 1 Operating Vehicle in Reckless/Aggressive Manner | None Indicated |

Selection Filter:

None

Analyst: DRD

Notes: CRASHES 2003-2012

**2003 - 2012 Reportable Crash History
Intersection of US 39 and Avenue C
Denison
Crawford Co, Iowa**

Year	County	Crashes					Injuries						
		Crashes	Fatal	Major	Minor	Poss/Unk	PDO	Injuries	Fatalities	Major	Minor	Possible	Unknown
2003	Crawford	3	0	0	0	0	3	0	0	0	0	0	0
2004	Crawford	2	0	0	0	0	2	0	0	0	0	0	0
2005	Crawford	3	0	0	0	2	1	3	0	0	0	1	2
2006	Crawford	1	0	0	1	0	0	1	0	0	1	0	0
2007	Crawford	3	0	0	0	1	2	2	0	0	0	2	0
2008	Crawford	5	0	0	1	1	3	3	0	0	1	2	0
2009	Crawford	1	0	0	0	0	1	0	0	0	0	0	0
2010	Crawford	1	0	0	0	0	1	0	0	0	0	0	0
2011	Crawford	4	0	0	0	0	4	0	0	0	0	0	0
2012	Crawford	3	0	0	0	0	3	0	0	0	0	0	0
Totals:		26	0	0	2	4	20	9	0	0	2		7

meeting the following criteria:
(This feature currently not operational.)

Feature Count Report (Tuesday, July 30, 2013 7:58:20 AM Central Daylight Time)
produced using: Iowa's Safety Analysis, Visualization, and Exploration Resource (SAVER)
by:

[print version](#)

**2003 - 2012 Reportable Crash History
Intersection of US 39 and Avenue C
Denison
Crawford Co, Iowa**

Year	County	Crashes					PDO	Injuries					
		Fatal	Major	Minor	Poss/Unk	Injuries		Fatalities	Major	Minor	Possible	Unknown	
2003	Crawford	3	0	0	0	0	3	0	0	0	0	0	0
2004	Crawford	2	0	0	0	0	2	0	0	0	0	0	0
2005	Crawford	3	0	0	0	2	1	3	0	0	0	1	2
2006	Crawford	1	0	0	1	0	0	1	0	0	1	0	0
2007	Crawford	3	0	0	0	1	2	2	0	0	0	2	0
2008	Crawford	5	0	0	1	1	3	3	0	0	1	2	0
2009	Crawford	1	0	0	0	0	1	0	0	0	0	0	0
2010	Crawford	1	0	0	0	0	1	0	0	0	0	0	0
2011	Crawford	4	0	0	0	0	4	0	0	0	0	0	0
2012	Crawford	3	0	0	0	0	3	0	0	0	0	0	0
Totals:		26	0	0	2	4	20	9	0	0	2	7	

meeting the following criteria:
(This feature currently not operational.)

Feature Count Report (Tuesday, July 30, 2013 7:58:20 AM Central Daylight Time)
produced using: Iowa's Safety Analysis, Visualization, and Exploration Resource (SAVER)
by:

[copy version](#)

July 17, 2012

To: Terry Crawford -- City Manager

Welcome to City Hall. Congratulations! Hopefully this journey will be a good one.

The timing of your decision to accept the City Manager's position is good for me. In the past, we have discussed Ave C, and especially the intersection with Hwy 39. With the retail expansion to the west, it would be beneficial to address traffic flow on Ave C and especially potential turning lanes at the intersection of Ave C and Hwy 39. I respectfully request that this issue be addressed with haste. Thank you.

Sincerely,

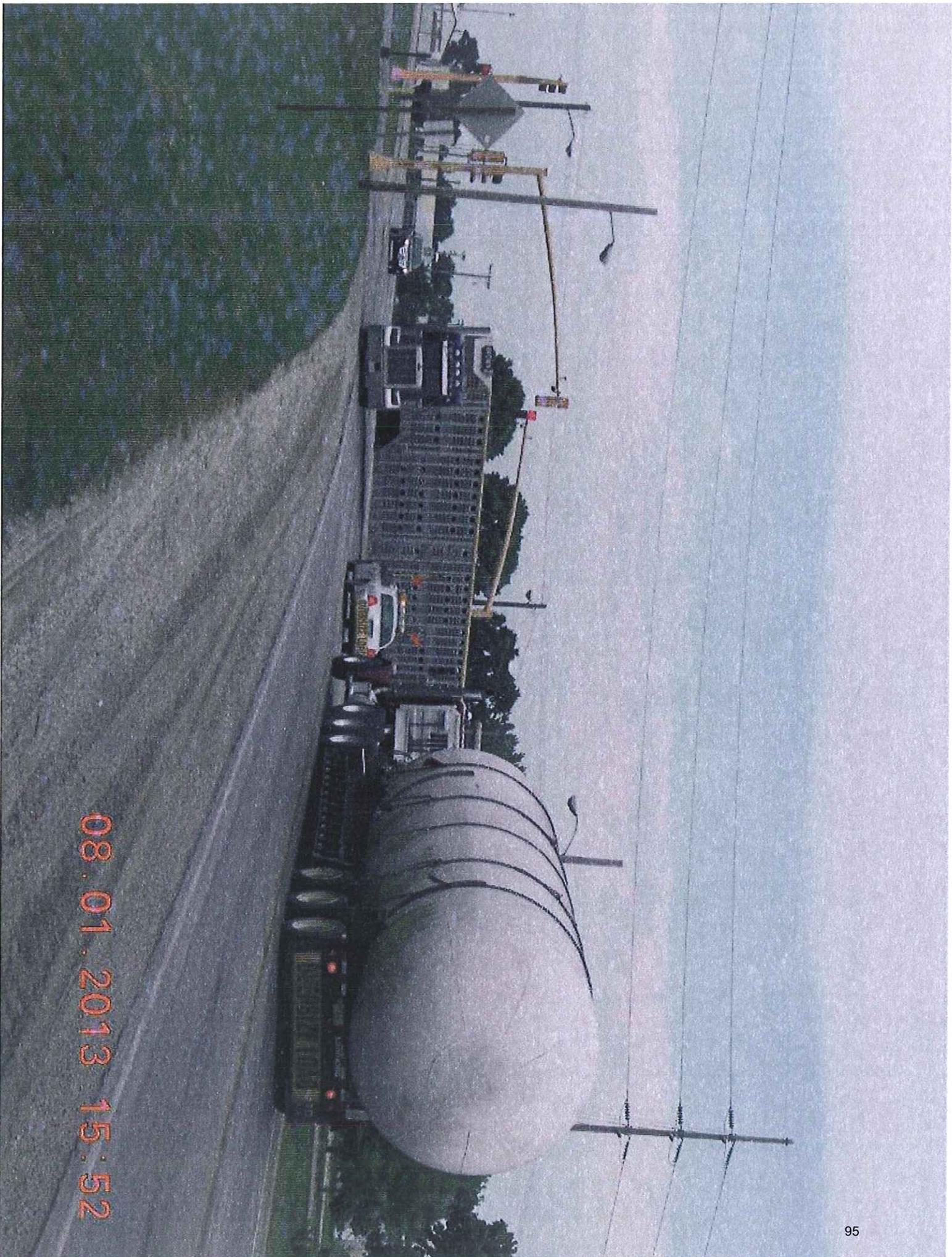


Kent V. Hollrah

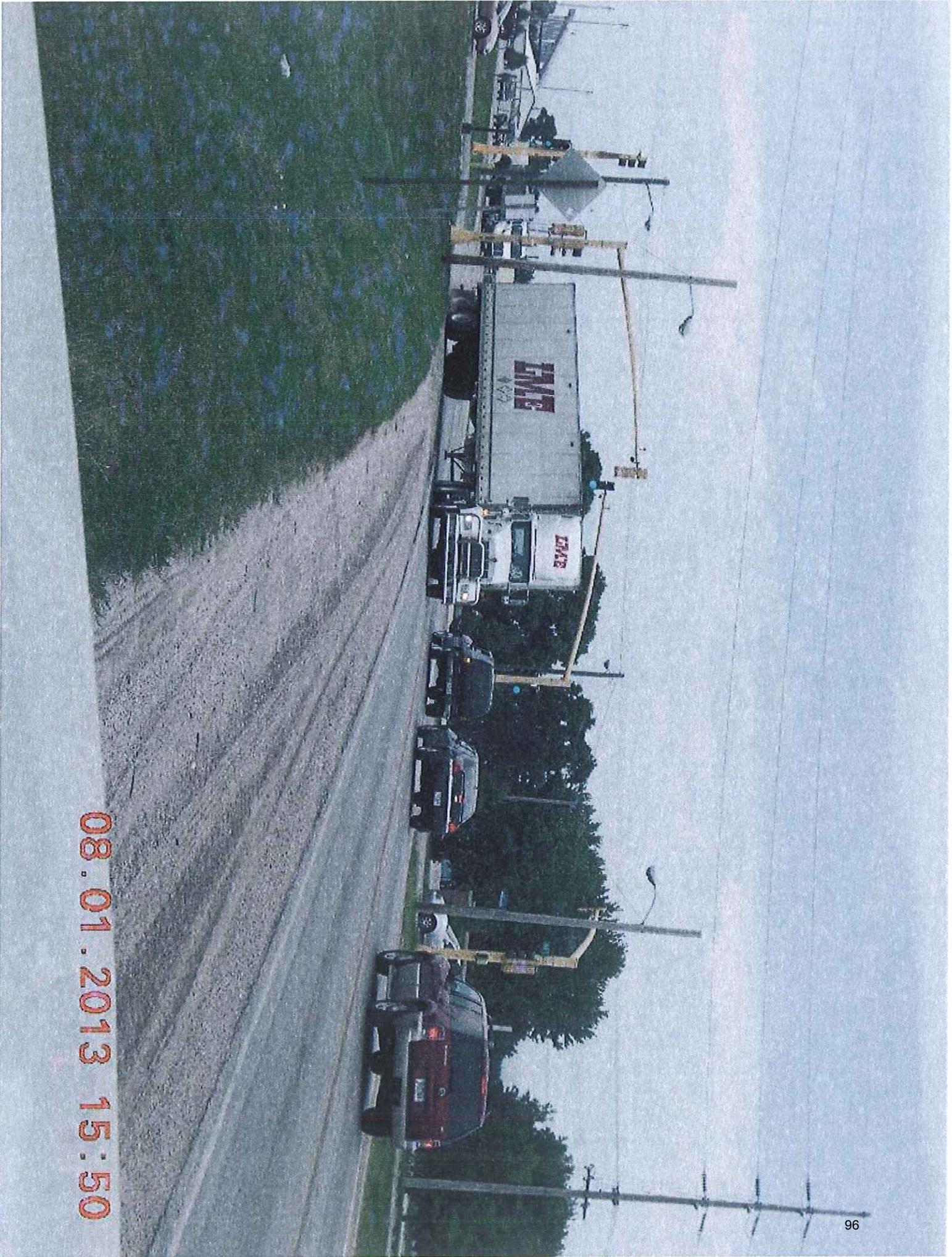
P.S. The enclosed accident describes a problem at that intersection.

Accidents

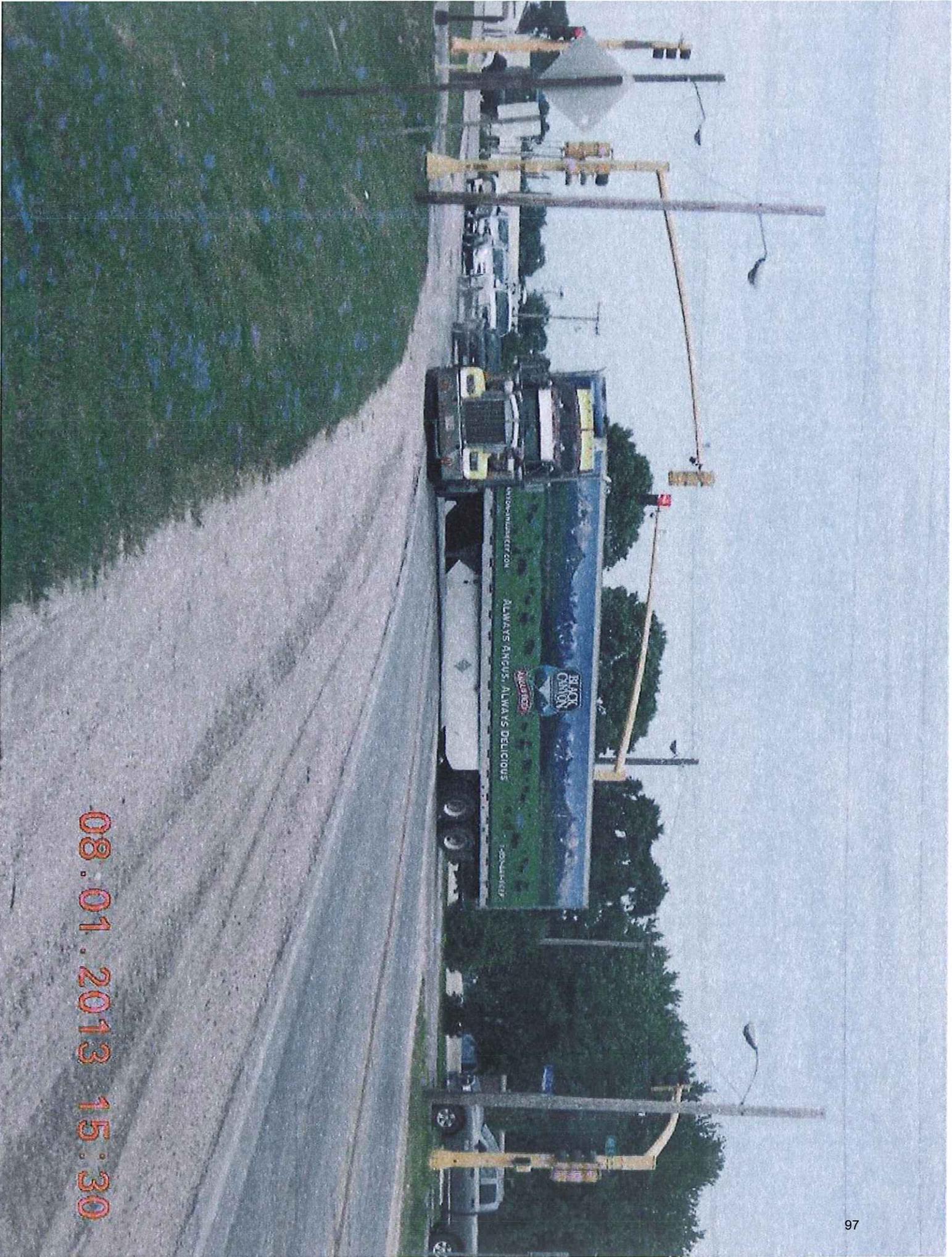
At 8:27 a.m. on June 20, a 2005 Peterbilt semi, driven by Ricky Darrell Brodersen, 42 of Kiron, and a 2011 Ford Fusion, driven by Amy Marie Miller, 34 of Schleswig, were waiting for the signal light to change at the intersection of Highway 39 and Avenue C. As they were waiting, another semi was attempting to turn right from Highway 39 onto Avenue C. Brodersen said he wanted to back up to allow the turning semi room. Brodersen stated he looked in his mirrors but could not see Miller's vehicle behind him. He started to back up and the back of his trailer slid onto the front end of Miller's car and smashed it down. Damage was estimated at \$200 to Brodersen's semi and \$5,200 to Miller's vehicle. Brodersen was cited for unsafe backing on the highway. No accidents were reported.



08.01.2013 15:52



08.01.2013 15:50



08.01.2013 15:30

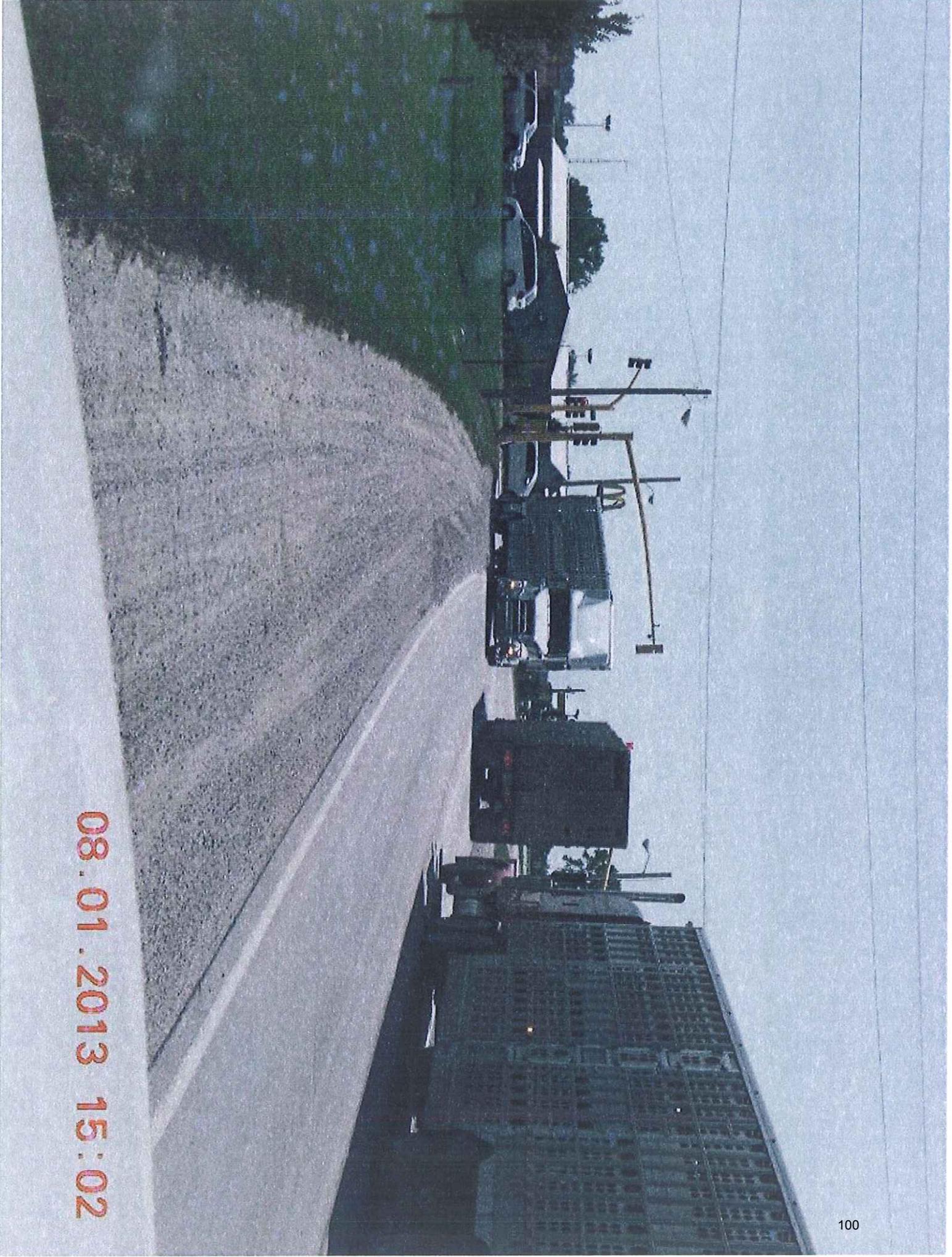


DENISON NAILS
GRAND
OPENING
←

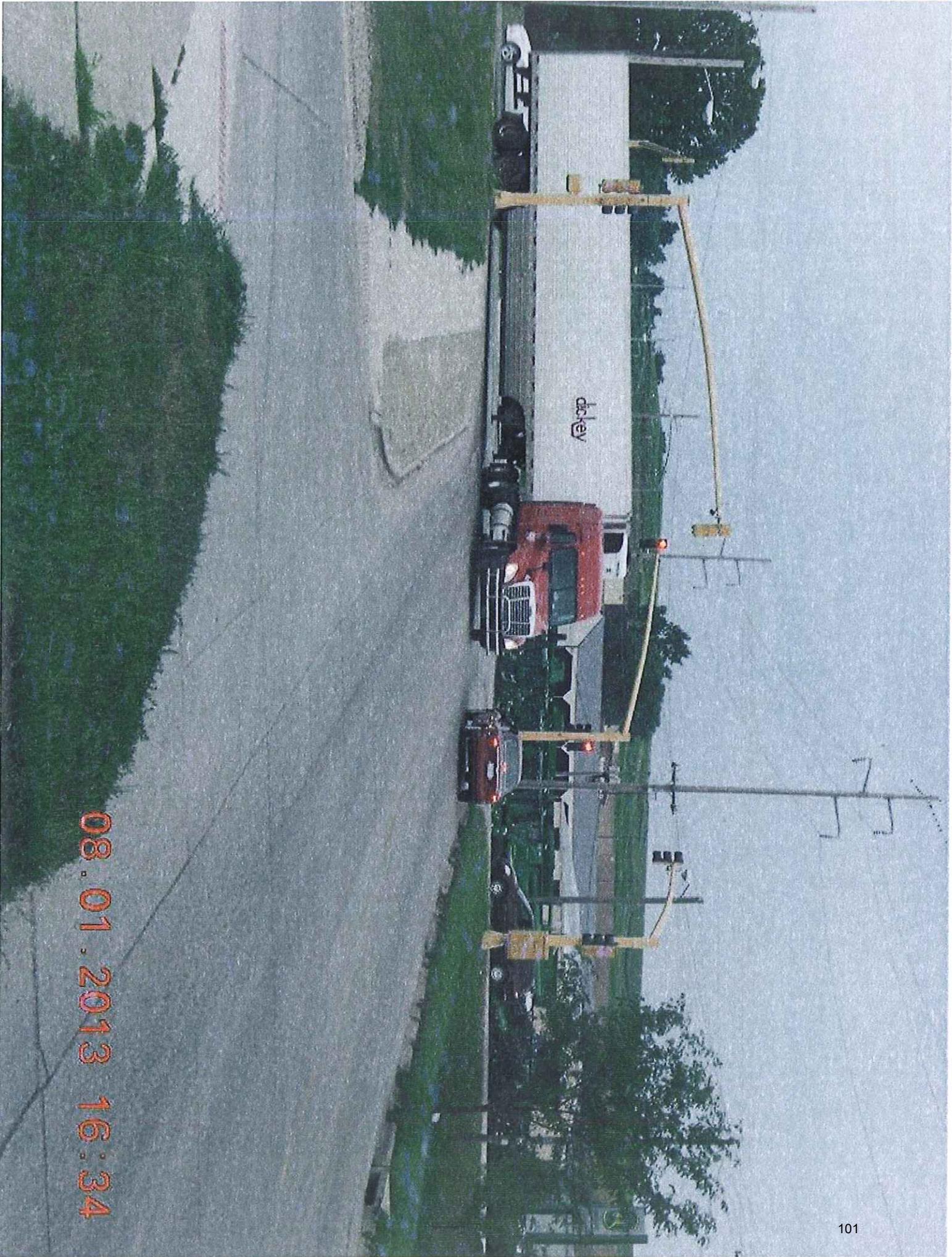
08.01.2013 15:14



08-01-2013 14:57



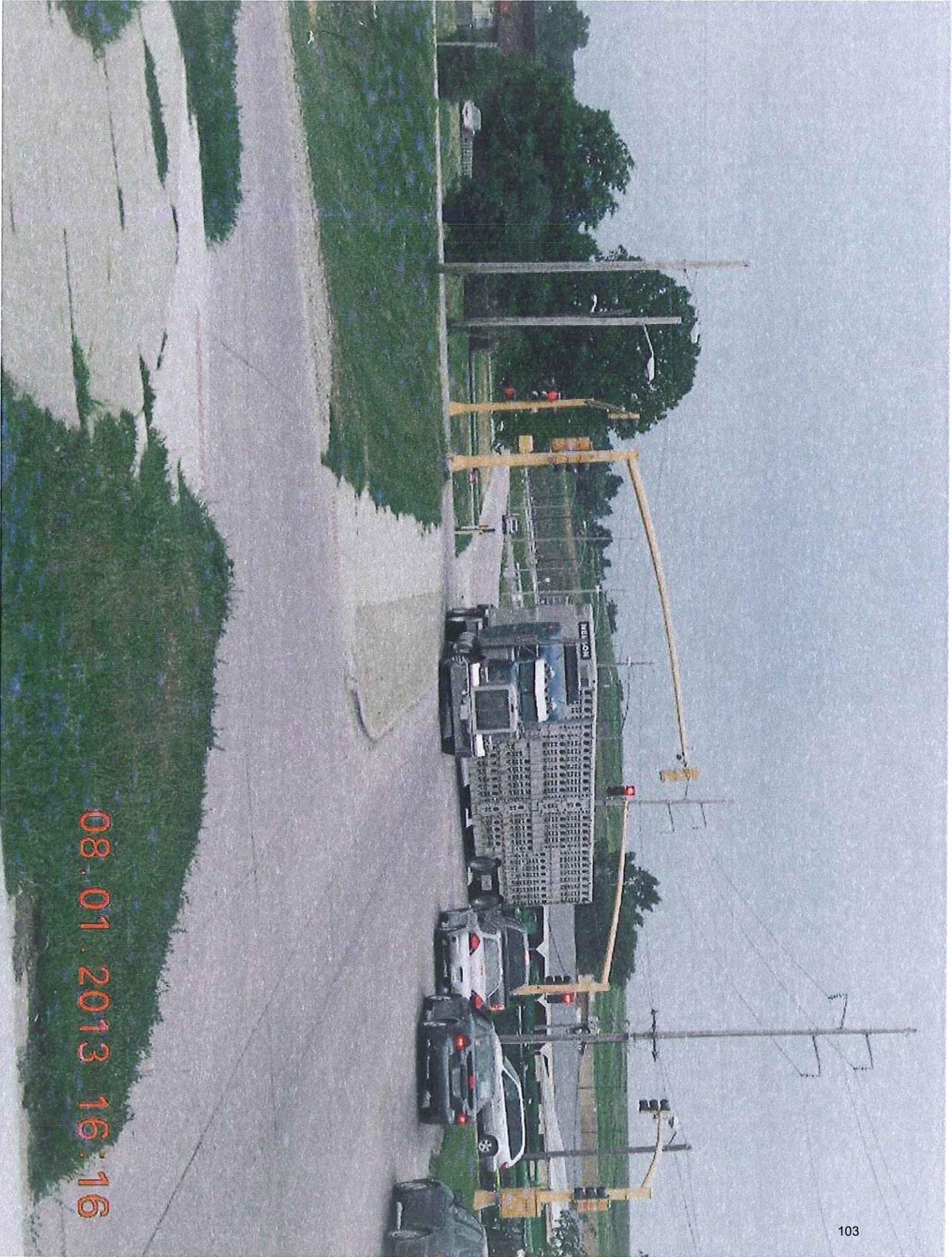
08.01.2013 15:02



08.01.2013 16:34



08-01-2013 16:34



08.01.2013 16:16



Application for TRAFFIC SAFETY FUNDS

GENERAL INFORMATION

Location / Title of Project Iowa Highway 175 at the Intersection with 10th Street

Applicant City of Onawa

Contact Person Bradley Hanson Title City Administrator

Complete Mailing Address 914 Diamond Street Onawa, IA 51040

Phone 712.433.1181 (Area Code) E-Mail onawaca@longlines.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:

Application Type

- Site Specific []
Traffic Control Device [x]
Safety Study []

Funding Amount

Total Project Cost \$ 46,027.30

Safety Funds Requested \$ 46,027.30

APPLICATION CERTIFICATION FOR LOCAL GOVERNMENT

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

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

Representing the City of Onawa

Signed:  8.15.2013
Signature Date Signed

Bob Skelton, Mayor
Typed Name

Attest:  08/15/13
Signature Date Signed

Bradley J. Hanson
Typed Name

RESOLUTION NO. 2013.16

A RESOLUTION AUTHORIZING AND DESIGNATING THE NORTH FRONTAGE ROAD, ALONG IOWA AVENUE, TO BE RIGHT TURN ONLY AT THE INTERSECTION WITH 10th STREET

WHEREAS, the City Council believes that the traffic patterns around the North Frontage Road and 10th Street require changes for the safe operations of motor vehicles and pedestrian traffic.

WHEREAS, the chief of police has recommended that the North Frontage Road along Iowa Avenue be a right turn only at the intersection of 10th Street; and

WHEREAS, a resolution is required to change streets to right turn only; and

WHEREAS, the City Council believes that changing the North Frontage Road to right turn only is appropriate for the safe operations of motor vehicles and pedestrian traffic.

NOW THEREFORE BE IT RESOLVED that the North Frontage Road along Iowa Avenue be a right turn only at the intersection of 10th Street.

BE IT FURTHER RESOLVED that the changes shall become effective upon placing of the appropriate signage as required by Onawa Code §61.06 and any other signs deemed appropriate by the chief of police and the street superintendent regarding right turn only streets and safety thereof.

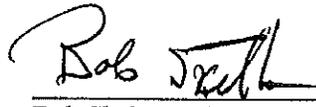
Councilperson Bone caused to be read and moved the adoption of the foregoing resolution.

Councilperson Campbell seconded the motion to adopt. Upon due consideration by the Council, the Mayor put the question; and, upon the roll being called, the vote was:

Ayes: Bone, Campbell, Coyle, Moser, Habinck

Nays: none

WHEREUPON, the Mayor declared the foregoing resolution duly adopted on August 27, 2013.



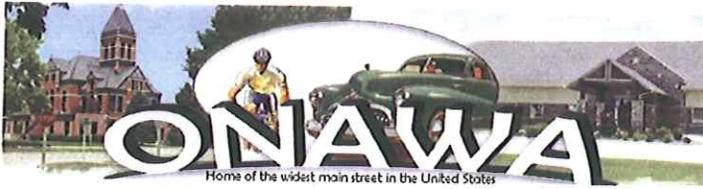
Bob Skelton, Mayor

ATTEST:



Terry R. Christensen, Deputy Clerk





Robert Skelton, Mayor
 Bradley J. Hanson, City Administrator
 Chris R. Hogan, City Clerk
 Terry R. Christensen, Deputy Clerk
 Elaine D. Miller, Adm. Assistant
 (712) 433-1181
 (712) 433-1128 Fax

Vince Phillips
 Public Works Director /
 Superintendent
 Roger Gries
 Assistant Superintendent
 (712) 433-1511

CITY OF ONAWA, 914 Diamond Street, Onawa, Iowa 51040

A. APPLICATION CERTIFICATION OR RESOLUTION:

On July 23, 2013 the Council unanimously approved the direction of removing the stop lights at the intersection of 10th Street and Iowa Avenue (Iowa Highway 175) and replaces them with a four way stop sign and flashing red light overhead. On August 13, 2013 the City Council approved the north frontage road along Iowa Avenue, of west bound traffic to be a right turn only with a stop sign located at the intersection with 10th Street. Both of these Council directions will be formally approved with a resolution on August 27, 2013. Those formal resolutions will be forwarded as soon as they are passed. The City Council further approved a conversion to a three (3) lane road, consisting of one west bound lane, one east bound lane, and a turn lane in the middle of Iowa Avenue (Iowa Highway 175) with Resolution 2011.49 on September 27, 2011 (See attached copy of Resolution).

B. NARRATIVE:

This past May through June the City of Onawa experienced some severe spring storms which included some high winds. During one of those storms, the stop light at the intersection of Iowa Avenue (Iowa Highway 175) at intersection with 10th Street was damaged. The stop lights are from the 1960s and mechanical in nature; which results in parts that are hard to come by. It was because of this that it took the City of Onawa approximately one month to repair and replace the stop light. During this time the intersection was controlled by a temporary four-way stop sign; which was very functional. It was during this time that the residents, City Council and City Staff noticed a decrease in through traffic speeds and an increase in complete stops. Through traffic during regular operation seem to speed up to make it through the green light; especially commercial truck traffic. Therefore, it is the desire of the City Council to remove the current stop light signal and replace it with a four way stop sign and flashing red lights to increase the safety of our pedestrian traffic and sustain a better flow of vehicle traffic.

City Council approved a conversion to a three (3) lane road, consisting of one west bound lane, one east bound lane, and a turn lane in the middle of Iowa Avenue (Iowa Highway 175) with Resolution 2011.49 on September 27, 2011 (See attached copy of Resolution). City Council further approved of the north frontage road along Iowa Avenue to be a right turn only at the intersection of 10th Street on August 13, 2013. Therefore, the four way stop sign will only control north and south bound traffic on 10th Street and east and west bound traffic on Iowa Avenue (Iowa Highway 175). The west bound traffic on the north frontage road (running along the north side of Iowa Avenue) will be controlled by its own stop sign and must yield right of way to traffic at the four way stop sign at the intersection of Iowa Avenue and 10th Street.

C. ITEMIZED BREAKDOWN OF COSTS: (All costs are estimated)

<u>MATERIAL COSTS</u>		<u>EQUIPMENT COSTS</u>	
Concrete	\$1,100.00	Skid loader	\$125.00 \$25.00/hr @ 5 hrs
Rebar	\$150.00	Mini excavator	\$100.00 \$25.00/hr @ 4 hrs
Stop Signs (5)	\$400.00	Dump Truck	\$168.00 \$42.00/hr @ 4 hrs
Flashing Stop Ahead Signs (4)	\$7,000.00	Concrete Saw	\$80.00 \$10.00/hr @ 8 hrs
Sign Tubing (9)	\$315.00	Water Truck	\$600.00 \$75.00/hr @ 8 hrs

Break-away Sign Bases (9)	\$720.00
Surface Mount Base (9)	\$270.00
Paint for Crosswalks	\$75.00
Poles (4)	\$20,000.00
Power Cable (350')	\$200.00
Flashing Red LED Light (4)	\$800.00
Controller	\$800.00
TOTAL MATERIAL COSTS	\$31,830.00

Vac Truck	\$800.00	\$100.00/hr @ 8 hrs
Paint Striper	\$140.00	
TOTAL EQUIP. COSTS	\$2,013.00	

<u>LABOR & ENGINEERING COSTS</u>	
TOTAL L & E COSTS	\$8,000.00

GRAND TOTAL ESTIMATED COSTS (+10% Contingency): \$46,027.30

D. TIME SCHEDULE:

The City of Onawa City Council would like to begin the transition from a stop light set-up to a four way stop sign as soon as possible, if funding is available prior to the next fiscal year. Otherwise, the City of Onawa would like to begin the transition on August 1, 2014 with a projected completion date within 30 days of September 1, 2014.

E. MAP:



F. PHOTOS OF PROJECT SITE:

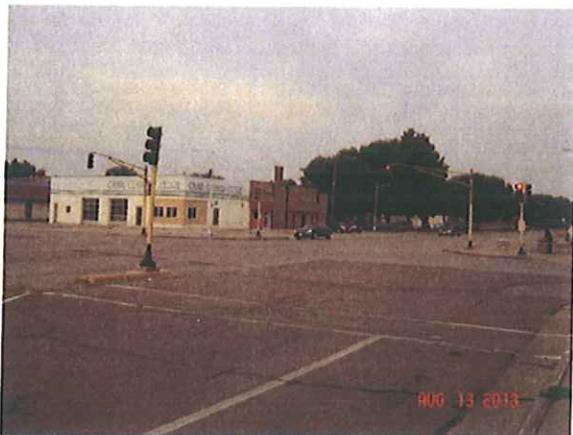


Photo taken from north-east corner, looking west, on the north frontage road of Iowa Avenue (Highway 175) at the intersection with 10th Street.

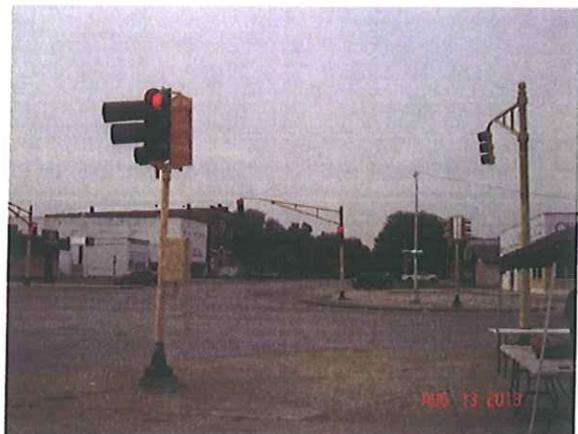


Photo taken from north-west corner, looking south, on 10th Street at the intersection with Iowa Avenue (Highway 175).

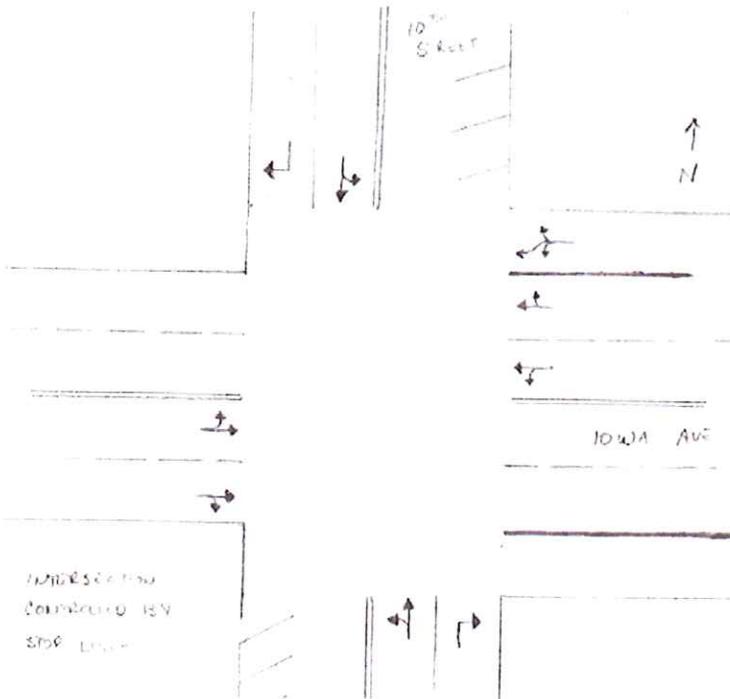


Photo taken from south-east corner, looking north, on 10th Street at the intersection with Iowa Avenue (Highway 175).



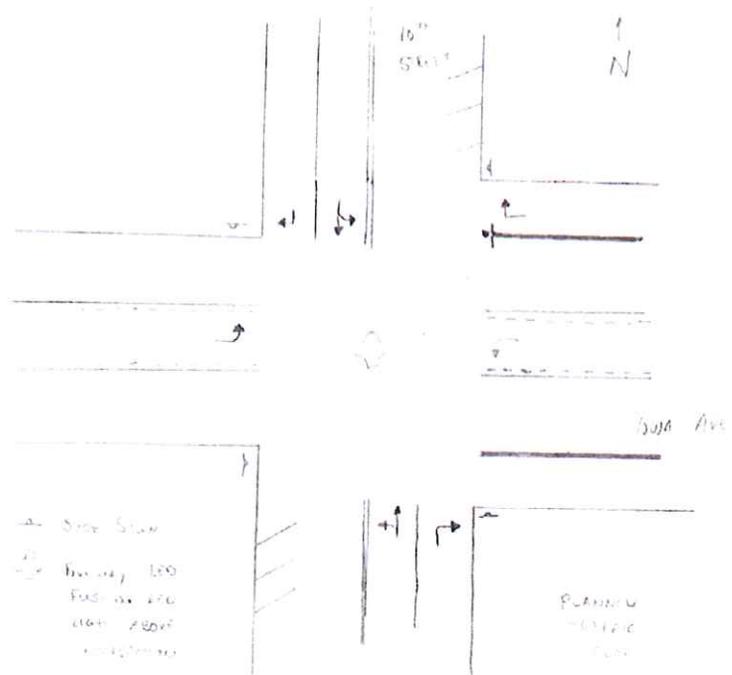
Photo taken from south-west corner, looking east, on Iowa Avenue (Highway 175) at the intersection with 10th Street.

G. PLAN VIEWS:



The diagram to the left is the existing traffic flow for the intersection of 10th Street with Iowa Avenue that is currently controlled by a traffic signal. Currently the traffic for the east-west bound traffic and the north-south bound traffic have a green light for approximately 28 seconds. The north frontage road that runs along Iowa Ave with west bound traffic has a 13 second green light.

The diagram to the right is the planned intersection of 10th Street and Iowa Avenue (Iowa State Highway 175). The two inside lanes have been converted to a left turn only section. There is a flashing red light above the intersection. The west bound traffic on the north frontage road of Iowa Ave (Highway 175) will become a right turn only with a stop sign and shall yield right of way to traffic at the main intersection. The traffic pattern for 10th Street at the intersection with Iowa Avenue will remain the same, except that south bound traffic stop line/position shall be moved south towards the actual intersection with Iowa Avenue.



H. TRAFFIC VOLUMES AND/OR TURNING MOVEMENT:

The below diagram is from the Iowa Department of Transportation, courtesy of Roxanne Seward, which demonstrates that the traffic volumes meet the minimums for a four way stop sign at the intersection of Iowa Avenue (Iowa State Highway 175) and 10th Street:

Location: IA 175 and 10th Street, Onawa
 Counts taken: 08/29/12

	IA 175 West Leg Major					IA 175 East Leg Major					10th Street North Leg Minor					10th Street South Leg Minor					Total Major Rd	Both Minor Rd
	L	S	R	T		L	S	R	T		L	S	R	T		L	S	R	T			
7:00	30	72	20	122		5	110	14	129		33	28	79	140		19	59	19	97		251	237
8:00	41	96	31	168		12	116	17	145		34	60	85	179		16	65	10	91		313	270
9:00				0					0					0					0		0	0
11:00	39	110	28	177		11	116	22	149		35	59	71	165		24	46	13	83		326	248
12:00	51	173	51	275		15	159	19	193		41	58	88	187		47	53	17	117		468	304
15:00	57	166	42	265		23	135	21	179		46	58	97	201		21	58	22	101		444	302
16:00	43	165	46	254		13	153	23	189		54	89	96	239		36	58	18	112		443	351
17:00	48	189	52	289		21	135	19	175		68	88	89	245		33	73	22	128		464	373
																					2709	

4-Way Stop Warrant: Major (both approaches) 300 vehicles per hour. Minor (both approaches) 200 vehicles per hour.

6 Hours Met - See red hours/volumes above

NOTE: Estimated at least 2 more hours between 9:00 am - 11:00 am or 1:00 pm - 3:00 pm would also be met.

Summary: 4-Way Stop Warrant Met

I. TRAFFIC SIGNAL LAYOUT, TYPE, PROPOSED PHASING, AND DETECTOR LOCATIONS:

The current set-up for the intersection of 10th Street and Iowa Avenue (Highway 175) has three (3) directional traffic segments. The first segment will be green for approximately 28 seconds for the north and south bound traffic on 10th Street. The second segment is green for also approximately 28 seconds for the east and west bound traffic on Iowa Avenue (Highway 175). The final segment is for the north frontage road that runs parallel with Iowa Avenue. The current traffic pattern for the final segment can turn south or north on 10th Street, or head west on Iowa Avenue or make a u-turn onto west bound Iowa Avenue (Highway 175) during a green light. The light remains green for the frontage road approximately 13 seconds per segment.



The current traffic signal was originally installed in the 1960s and parts are near non-existent and need to be sent away for repair and/or re-manufactured. Due to the approval of the City Council, the City will be removing the traffic signal and replace them with a four-way stop sign with a flashing red LED light hanging over the intersection; which will have a light facing all four compass directions. The north frontage road that runs parallel to Iowa Avenue (Highway 175) will also have a stop sign and a right turn only, onto north bound 10th Street, at the intersection with 10th Street; which must further yield right of way to the main intersection traffic of 10th Street and Iowa Avenue (Highway 175). See the photo to the left for the locations of the center aligned LED Flashing Red Light support poles and support and power lines. The current four lanes of traffic will be three lanes with the outside lanes in each direction being used as straight or right turns and the middle lane for

left turns off of Iowa Avenue (Highway 175) as approved by Resolution 2011.49.

RESOLUTION NO. 2011.49

RESOLUTION ADOPTING CORE CONFIGURATION
FOR IA 175 (IOWA AVENUE) CORRIDOR

WHEREAS, the City of Onawa is desirous of improving the Iowa Avenue corridor for the safe operations of motor vehicles and pedestrian traffic; and

WHEREAS, Iowa Avenue is four (4) traffic lanes, two (2) traffic lanes going east and two (2) traffic lanes going west; and

WHEREAS, the City has considered several options and have narrowed the core configuration to the following:

1. Conversion of existing 4-lane configuration of IA 175 (Iowa Avenue) to a 3-lane configuration with a two-way left turn lane (TWLTL) as outlined in the February 2, 2010 Traffic Engineering Assistance Program (TEAP) study.
2. No change to the existing 4-lane configuration.

WHEREAS, the City Council is desirous of adopting a configuration for Iowa Avenue corridor so that it may continue the planning process for engineering and budgeting purposes.

NOW THEREFORE BE IT RESOLVED that the City Council hereby adopts the _____¹ configuration for IA 175 (Iowa Avenue) corridor.

BE IT FURTHER RESOLVED specific design characteristics, described in detail in the Traffic Engineering Assistance Program (TEAP) of February 2, 2010, will be decided at a later time by the City subject to Iowa Department of Transportation (IDOT) approval.

Councilperson Campbell caused to be read and moved the adoption of the foregoing resolution.

Councilperson Moser seconded the motion to adopt. Upon due consideration by the Council, the Mayor put the question; and, upon the roll being called, the vote was:

Ayes: Campbell, Stangel, Moser, Noer

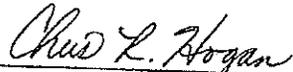
Nays: Nelson

WHEREUPON, the Mayor declared the foregoing resolution duly adopted on September 27, 2011.



Bob Skelton, Mayor

ATTEST:



Chris R. Hogan, City Clerk

Application for TRAFFIC SAFETY FUNDS

GENERAL INFORMATION

Location / Title of Project Council Bluffs/Pedestrian Countdown IndicationsApplicant City of Council BluffsContact Person Mark Franz Title Traffic SuperintendentComplete Mailing Address 1001 10th Avenue
Council Bluffs, IA 51501Phone (712)328-4645 E-Mail mfranz@councilbluffs-ia.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:

Application Type

Site Specific
Traffic Control Device
Safety Study

Funding Amount

Total Project Cost \$ 77,460.20Safety Funds Requested \$ 60,404.00



APPLICATION CERTIFICATION FOR LOCAL GOVERNMENT

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

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

Representing the City of Council Bluffs

Signed: Gregory W. Reeder 8/7/13
Signature Date Signed

GREGORY W. REEDER
Typed Name

Attest: Matthew S. Cox 8/7/13
Signature Date Signed

Matthew S. Cox
Typed Name

2014 TSIP Application, City of Council Bluffs Pedestrian Countdown Indications

The City of Council Bluffs is requesting Traffic Safety Improvement funds to purchase pedestrian countdown indications to improve pedestrian accommodations and safety at 45 signalized intersections and 12 signalized mid-block pedestrian crossings.

Enclosed are the specified documents for the City's Traffic Safety Improvement grant application.

Narrative

Pedestrian countdown indications have been shown to improve safety by:

- Reducing pedestrian collisions.
- Reducing the numbers of pedestrian in the street during the flashing Don't Walk interval.
- Improving driver behavior when pedestrians are present.

San Francisco's pedestrian countdown signals have been associated with a 52 percent reduction in pedestrian injury collisions at pilot locations; in addition, about 92 percent of post-installation interviewees explicitly said the countdown signals were "more helpful" than conventional pedestrian signals, primarily because they showed the time remaining to cross. This is consistent with recent FHWA research that showed that a pedestrian sample strongly preferred the countdown signal to actual and theoretical versions of pedestrian signals, and that the countdown version was "most easily understood."

Existing installations indicate that the technology is relatively straightforward and easy to apply.

The MUTCD, 2009 edition, states in Section 4E.07 Countdown Pedestrian Signals:

Standard:

⁰¹ All pedestrian signal heads used at crosswalks where the pedestrian change interval is more than 7 seconds shall include a pedestrian change interval countdown display in order to inform pedestrians of the number of seconds remaining in the pedestrian change interval.

Council Bluffs' standard specifications for traffic signals specify that all new traffic signal installations incorporating pedestrian signals will use countdown indications. Through new installations and completed retrofits, 25 signalized intersections and one mid-block signalized crossing are currently using countdown pedestrian signals.

2014 TSIP Application, City of Council Bluffs

C

Cost Breakdown			
Materials			
Conversion Type	Qty	Cost Each	Cost
12"	152	\$ 270.75	\$ 41,154.00
16"	110	\$ 175.00	\$ 19,250.00
Total Cost of Materials	262		\$ 60,404.00
Labor			
Man/hours - 0.7 per conversion	183.4	\$50	\$ 9,170.00
Equipment			
AR150 Bucket Truck - hours	183.4	\$43	\$ 7,886.20
Total Project Cost			\$ 77,460.20
TSIP Funds Requested			\$ 60,404.00

Signalized Intersections	Countdowns needed	Size
16th St & Ave B	8	12
16th St & Big Lake Rd	2	12
16th St & Nash Blvd	2	12
9th Ave & 35th St	8	12
9th Ave & I-29 North	2	12
9th Ave & I-29 South	2	12
Bennett Ave & Bonham Ave	4	12
Bennett Ave & McPherson Ave	4	12
Broadway & 6th St	8	12
Broadway & 7th St	4	12
Broadway & Frank St	8	12
East Pierce St & North Ave	4	12
Kanesville & 2nd St	8	12
Kanesville & 6th St	4	12
Kanesville & 7th St	2	12
Kanesville & Frank St	8	12
Kanesville & Main St	8	12
Kanesville & North Ave	8	12
Kanesville & Oakland Ave	8	12
Madison Ave & Rue St	2	12
Madison Ave & Valley View Dr	4	12
Madison Ave & Woodbury Ave	2	12
Mall Dr & Bennett Ave	4	12
Mall Dr & Valley View Dr	2	12
N. 25th St & Ave N/Nash Blvd	8	12
W. Broadway & 28th St	8	12
W. Broadway & 32nd St	8	12
23rd Ave & 10/11th St	2	12
35th St & 5/6th Ave	2	12
8th St & 3rd Ave	2	12
N. Broadway & Hunter	2	12
N. Broadway & Oak St	2	12
N. Broadway & Sylvan Dr	2	12
2nd Ave & 22nd St	2	16

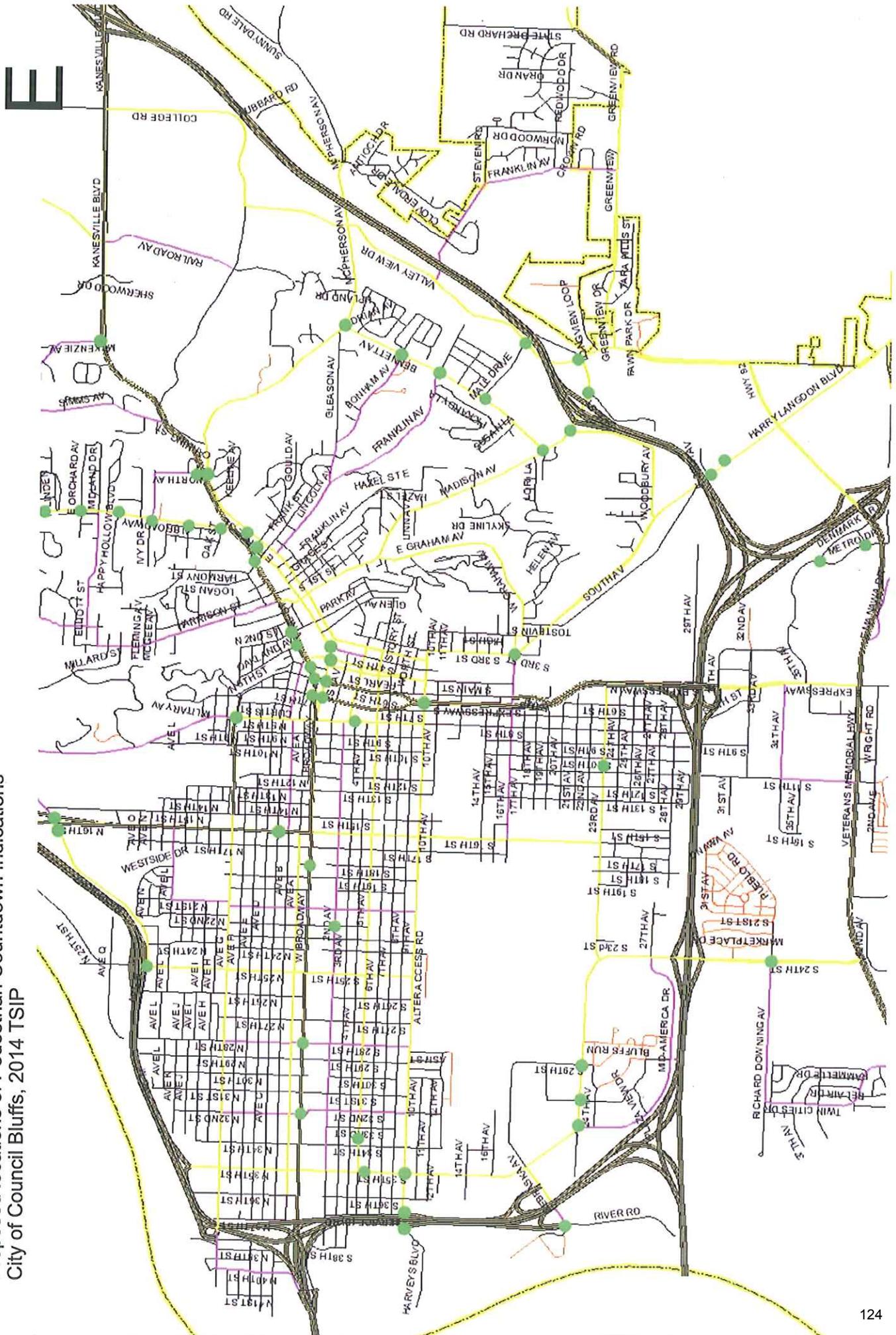
5th Ave & 33/34th St	2	16
E. Pierce St & Oak St	2	16
23rd Ave & 29th St	8	16
23rd Ave & 32nd St	8	16
23rd Ave & MidAmerica Dr	6	16
24th St & Downing Dr	2	16
8th St & Ave G	8	16
9th Ave & Main St	8	16
Bennett Ave & Franklin Ave	8	16
Broadway & 4th St	6	16
Broadway & Main	8	16
Hwy 6 & McKenzie	2	16
Langdon Blvd & L.C. High School Entrance	2	16
Langdon Blvd & L.C. Mid School Entrance	2	16
Langdon Blvd/3rd St & 16th Ave	4	16
Madison Ave & Bennett Ave	6	16
Metro Dr & Denmark Dr	6	16
Metro Dr & McDermott St	4	16
Nebraska Ave & I-29S/River Rd	2	16
W. Broadway & 18th St	8	16
N. Broadway & Happy Hollow	2	16
N. Broadway & Locust Lodge	2	16
N. Broadway & Orchard Ave	2	16
Total 16" Conversions	110	
Total 12" Conversions	152	
(Midblock Crossings in blue)		

**2014 TSIP Application, City of Council Bluffs
Pedestrian Countdown Indications**

Time Schedule

1 January 2014	Notification of Approval
1 July 2014	Funds become available
1 August 2014	Materials received and work begins
1 April 2015	Project completion

Proposed locations of Pedestrian Countdown Indications
City of Council Bluffs, 2014 TSIP





Typical 12" Countdown Display



Typical 12" Non-Countdown Display



Typical 16" Countdown Display



Typical 16" Non-Countdown Display



Application for TRAFFIC SAFETY FUNDS

GENERAL INFORMATION

Location / Title of Project City of Greeley Street Sign Replacement Project

Applicant City of Greeley

Contact Person Marge Horstman Title City Clerk

Complete Mailing Address P.O. Box 37 Greeley, IA 52050

Phone 563-925-2988 (Area Code) E-Mail cityofgreeley@iowatelecom.net

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

Co-Applicant(s)

Contact Person Title

Complete Mailing Address

Phone (Area Code) E-Mail

PLEASE COMPLETE THE FOLLOWING PROJECT INFORMATION:

Application Type Site Specific [] Traffic Control Device [X] Safety Study []

Funding Amount

Total Project Cost \$ 1185.07

Safety Funds Requested \$ 699.60

APPLICATION CERTIFICATION FOR LOCAL GOVERNMENT

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

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

Representing the City of Greeley

Signed:  8/13/13
Signature Date Signed

David Kruse
Typed Name

Attest:  8/13/13
Signature Date Signed

Marge Horstman
Typed Name

City of Greeley

214 E.2nd Street

P.O. Box 37

Greeley, IA 52050

563-925-2988

cityofgreeley@iowatelecom.net

B:

The City of Greeley is requesting funds for the replacement of the traffic signs in town.

We have some signs that are missing and several signs that need to be replaced due to fading, peeling or broken.

We would like to replace old wooded posts as well with steel posts.

The town is in need of these new signs for traffic safety and to meet reflectivity requirements.

The City of Greeley has also applied for the All Town Sign Replacement Program to replace all of our regulatory signs.

D:

The City of Greeley plans on Starting this project 07/01/2014 having this project completed by 01/01/2015.

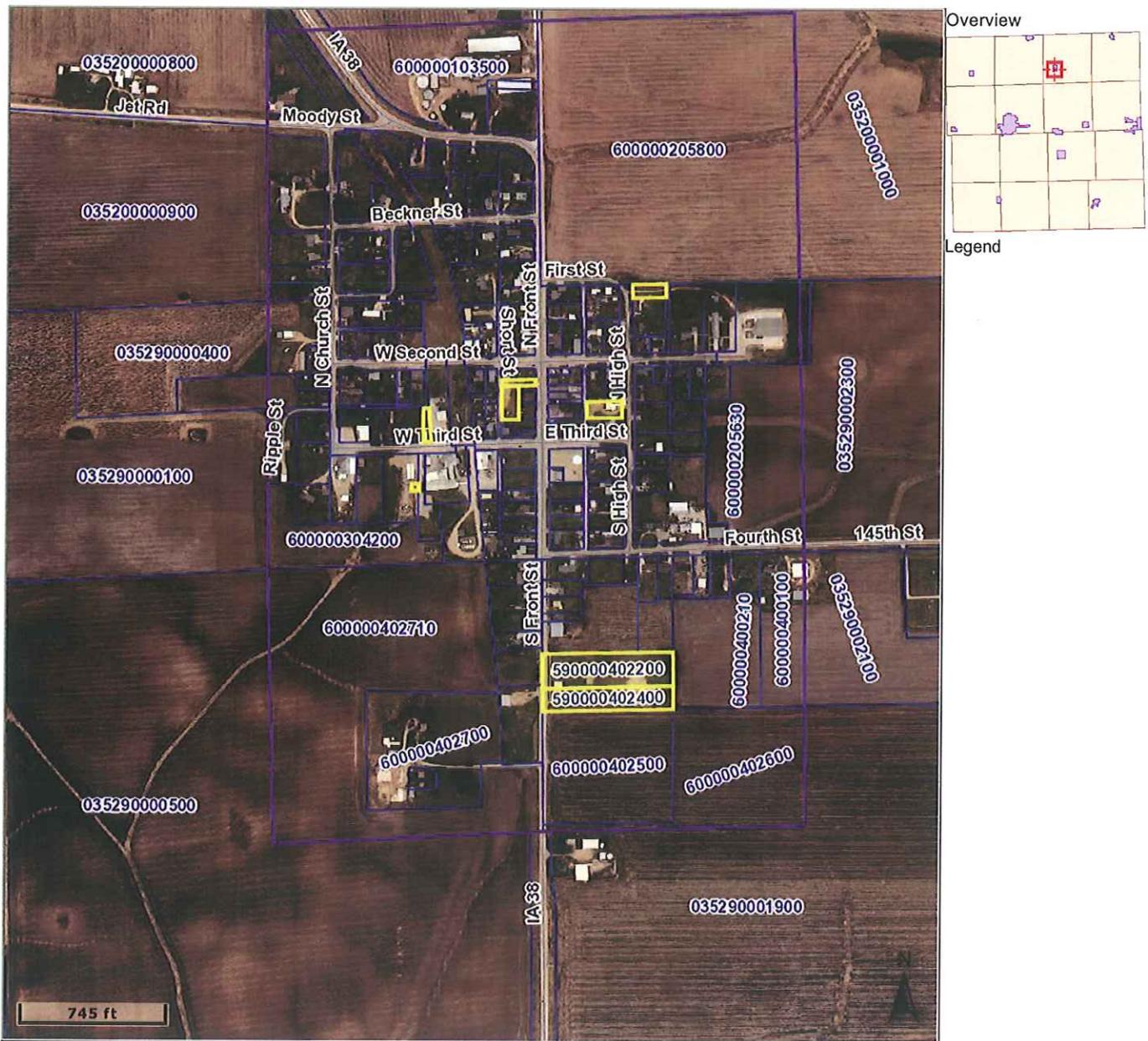
City of Greeley
214 E.2nd Street
P.O. Box 37
Greeley, IA 52050
563-925-2988
cityofgreeley@iowatelecom.net

<u>DESCRIPTION</u>	<u>NUMBER NEEDED</u>	<u>AMOUNT</u>
Street Name Signs	44	699.60
Total		699.60

The signs will be ordered thorough Iowa Prison Industries.

Any supplementary funds would have to come from the City General Fund.

Date Created: 8/29/2013

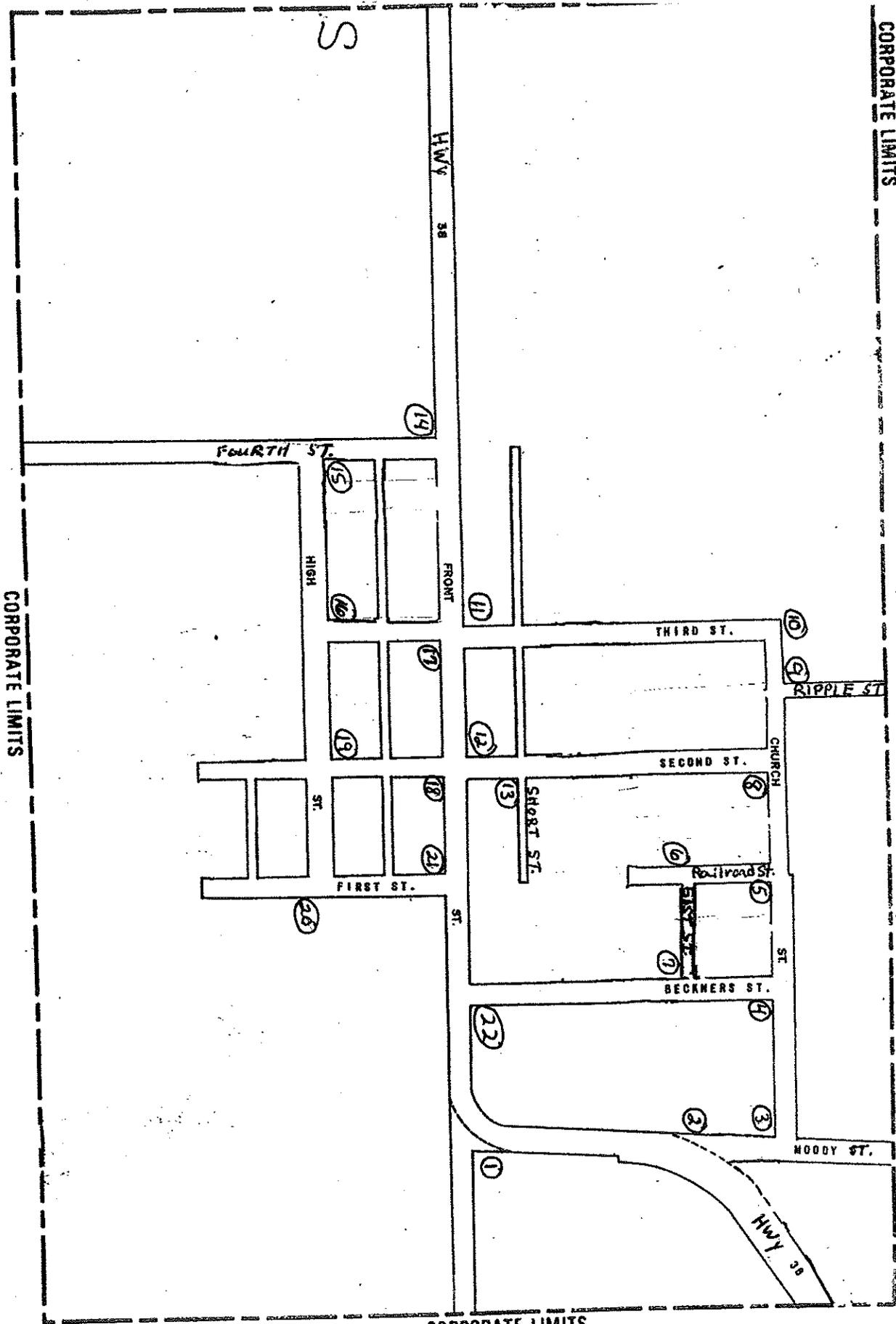


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CORPORATE LIMITS

5

W



CORPORATE LIMITS

CORPORATE LIMITS

N

E



Application for TRAFFIC SAFETY FUNDS

GENERAL INFORMATION

Location / Title of Project City of Dundee Street Sign Replacement Project

Applicant City of Dundee

Contact Person Marge Horstman Title City Clerk

Complete Mailing Address P.O. Box 218 Dundee, IA 52038

Phone 563-9243017 (Area Code) E-Mail cityofdundee@iowatelecom.net

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

Co-Applicant(s)

Contact Person Title

Complete Mailing Address

Phone (Area Code) E-Mail

PLEASE COMPLETE THE FOLLOWING PROJECT INFORMATION:

Application Type

- Site Specific []
Traffic Control Device [x]
Safety Study []

Funding Amount

Total Project Cost \$ 1846.10

Safety Funds Requested \$ 1087.42

APPLICATION CERTIFICATION FOR LOCAL GOVERNMENT

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

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

Representing the City of Dundee

Signed:

Barb Robinson

Signature

8/29/13

Date Signed

Barb Robinson, Mayor

Typed Name

Attest:

Marge Horstman

Signature

8/29/13

Date Signed

Marge Horstman, City Clerk

Typed Name

City of Dundee

P.O. Box 218

Dundee, IA 52038

563-924-3017

cityofdundee@iowatelecom.net

B:

The City of Dundee is requesting funds for the replacement of the traffic signs in town.

We have some signs that are missing and several signs that need to be replaced due to fading, peeling or broken.

We would like to replace old wooded posts as well with steel posts.

The town is in need of these new signs for traffic safety and to meet reflectivity requirements.

The City of Dundee has also applied for the All Town Sign Replacement Program to replace all of our regulatory signs.

D:

The City of Dundee plans on Starting this project 07/01/2014 having this project completed by 01/01/2015.

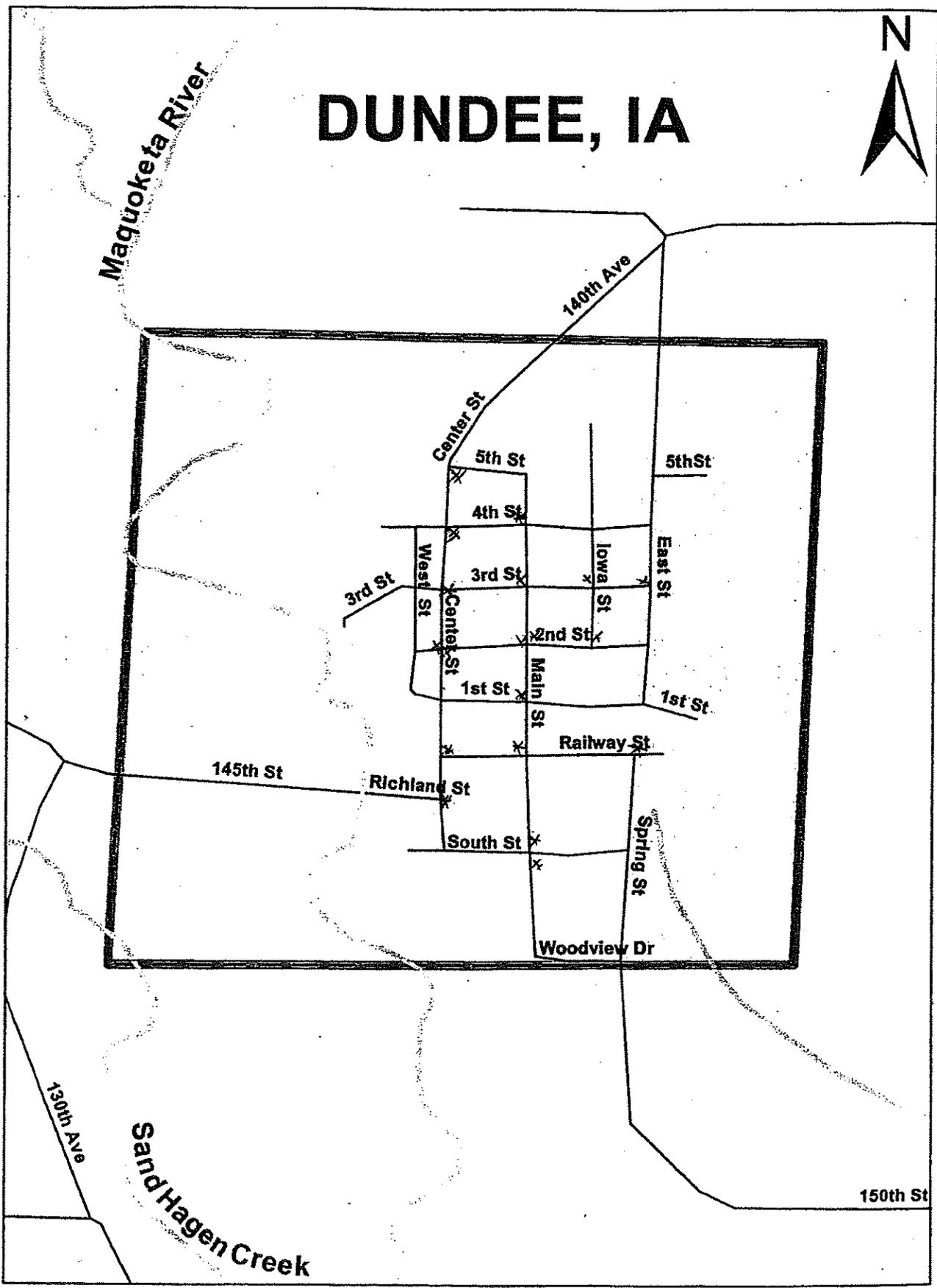
CITY OF DUNDEE

P.O. Box 218
Dundee, IA 52038
563-924-3017
cityofdundee@iowatelecom.net

<u>DESCRIPTION</u>	<u>NUMBER NEEDED</u>	<u>AMOUNT</u>
Street Name Signs	50	613.00
New Yield Signs	12	342.60
Parking	6	<u>131.82</u>
Total		1087.42

The signs will be ordered thorough Iowa Prison Industries.

Any supplementary funds would have to come from the City General Fund.





108102	1	20	108103
108103	2	19	108104
108104	3	18	108105
108105	4	17	108106
108106	5	16	108107
108107	6	15	108108
108108	7	14	108109
108109	8	13	108110
108110	9	12	108111
108111	10	11	108112
108112			21

Richland
T90N R06W

28

Richland St

Railway St

OFFICE BR. STORAGE ETC. LEASED OF ROBERT P. MESCH

OFFICE BR. STORAGE ETC. LEASED OF ROBERT P. MESCH

S Main St

Spring St

MOBILE HOME ON LAND LEASED OF ROBERT P. & INA MAE DAVIS VIN #0130368M

Application for TRAFFIC SAFETY FUNDS

GENERAL INFORMATION

Location / Title of Project City of Masonville / Street Sign Replacement Project
Applicant City of Masonville
Contact Person Marge Horstman Title City Clerk
Complete Mailing Address P.O. Box 135
Masonville, IA 50654
Phone 563-927-2707 E-Mail masonville@iowatelecom.net
(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 563-927-2707 E-Mail masonville@iowatelecom.net
(Area Code)

PLEASE COMPLETE THE FOLLOWING PROJECT INFORMATION:

Application Type
Site Specific
Traffic Control Device
Safety Study

Funding Amount

Total Project Cost \$ 1335.10
Safety Funds Requested \$ 659.60

APPLICATION CERTIFICATION FOR LOCAL GOVERNMENT

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

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

Representing the City of Masonville

Signed: Bill Alden 8/12/13
Signature Date Signed

Bill Alden
Typed Name

Attest: Marge Horstman 8/12/13
Signature Date Signed

Marge Horstman
Typed Name

CITY OF MASONVILLE

606 GORDON STREET, PO Box 135

MASONVILLE, IA 50654

563-927-2707

MASONVILLE@IOWATELECOM.NET

B:

The City of Masonville is requesting funds for the replacement of the traffic signs in town.

We have some signs that are missing and several signs that need to be replaced due to fading.

We would like to replace old wooded posts as well with steel posts.

The town is in need of these new signs for traffic safety and to meet reflectivity requirements.

The City of Masonville has also applied for the All Town Sign Replacement Program to replace all of our regulatory signs.

D:

The City of Masonville plans on Starting this project 07/01/2014 having this project completed by 01/01/2015.

CITY OF MASONVILLE

606 GORDON STREET, PO Box 135

MASONVILLE, IA 50654

563-927-2707

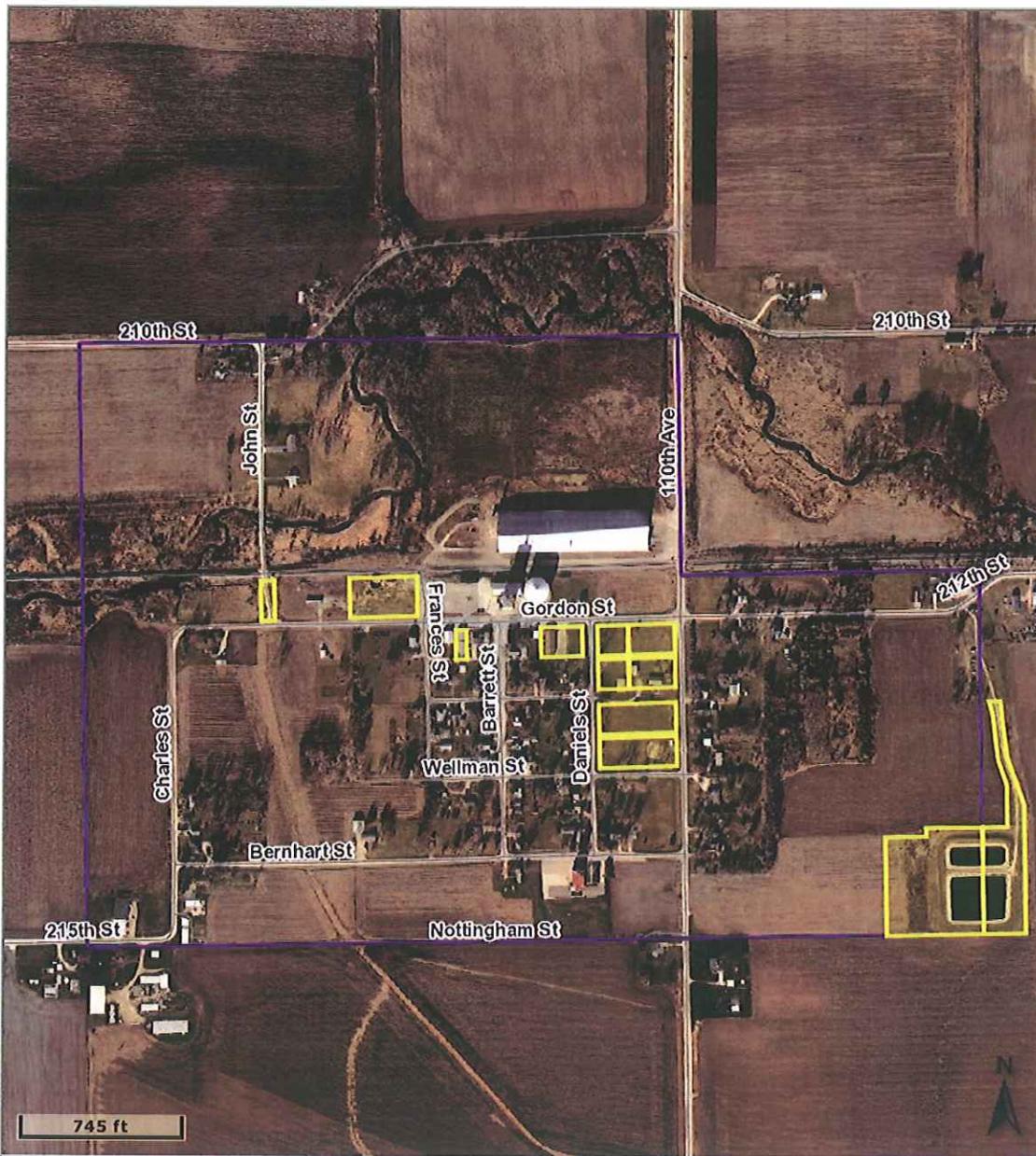
MASONVILLE@IOWATELECOM.NET

<u>DESCRIPTION</u>	<u>NUMBER NEEDED</u>	<u>AMOUNT</u>
Street Name Signs	32	480.00
Weight Limit	1	14.10
Handicap Parking	1	7.10
One Lane Bridge	2	58.60
Sign Posts	5	<u>99.80</u>
Total		659.60

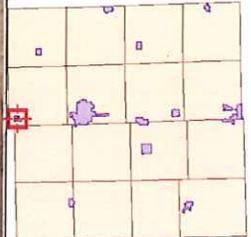
The signs will be ordered thorough Iowa Prison Industries.

Any supplementary funds would have to come from the City General Fund.

Date Created: 8/13/2013



Overview



Legend

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Application for TRAFFIC SAFETY FUNDS

GENERAL INFORMATION

Location / Title of Project 19th Avenue North & North 3rd Street Traffic SignalApplicant City of ClintonContact Person Jason Craft Title City EngineerComplete Mailing Address 611 South 3rd Street, P.O. Box 2958
Clinton, IA 52733-2958Phone (563) 244-3423 E-Mail JasonCraft@ci.clinton.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) NA

Contact Person _____ Title _____

Complete Mailing Address _____
_____Phone _____ E-Mail _____
(Area Code)

PLEASE COMPLETE THE FOLLOWING PROJECT INFORMATION:

Application Type

Site Specific
Traffic Control Device
Safety Study

Funding Amount

Total Project Cost \$ 150,000Safety Funds Requested \$ 75,000

APPLICATION CERTIFICATION FOR LOCAL GOVERNMENT

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

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

Representing the City of Clinton

Signed:  8/14/2013
Signature Date Signed

Typed Name

Attest: _____
Signature Date Signed

Typed Name

RESOLUTION NO. 2013-343

**RESOLUTION OF OFFICIAL ENDORSEMENT OF FUNDING APPLICATION
TO THE IOWA DEPARTMENT OF TRANSPORTATION
2013 TRAFFIC SAFETY IMPROVEMENT PROGRAM
FOR TRAFFIC SIGNAL EQUIPMENT AT 19TH AVENUE N & N 3RD STREET**

WHEREAS, the Iowa Department of Transportation is accepting applications for the Traffic Safety Improvement Program (TSIP) on August 15, 2013; and,

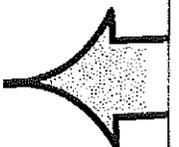
WHEREAS, the TSIP allows cities and counties throughout Iowa to apply for funding for traffic safety improvements on public roads under local jurisdiction; and,

WHEREAS, the crash history and traffic volumes at the intersection of 19th Avenue North & North 3rd Street indicates that signalization is warranted to improve safety and efficiency of the intersection; and,

WHEREAS, the City Engineering Department recommends installation of a fully signalized intersection at the intersection of 19th Avenue North & North 3rd Street, as part of Phase III of the 19th Avenue North Extension 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 traffic signalization equipment to be used at the intersection of 19th Avenue North & North 3rd Street, in the amount of \$75,000 (equipment only). The City Engineering Department is hereby authorized to submit the funding application on or before August 15, 2013.

 **MAYOR**



ATTEST:

CITY CLERK

ADOPTED: August 13, 2013

NARRATIVE

Existing Conditions

The City of Clinton is applying for Traffic Safety Improvement Program funding for safety improvements to the intersection of 19th Avenue North and North 3rd Street. North 3rd Street is a four-lane cross section with two northbound and two southbound lanes on both approaches. 19th Avenue North is a 45 foot cross section roadway east of North 3rd Street with one lane of travel in each direction and allowed parking. West of North 3rd Street, 19th Avenue North is a 25 foot cross section roadway with one lane in each direction and no parking allowed. Two-way STOP control is provided for the eastbound/westbound on 19th Avenue North traffic. The posted speed limit on 19th Avenue North and North 3rd Street is 30 mph.

Traffic Counts

The City collected turning movements at the intersection on Wednesday, 8/7/2013, during the AM peak (8-9 AM), noon peak (12-1 PM), and PM peak (5-6 PM) periods. The traffic volumes from the DOT conducted 2010 turning movement counts at 19th Avenue North with North 2nd Street and North 3rd Street with Main Avenue were used to estimate ADT for each approach. Estimated ADT for the intersection approaches (in vehicles per day (vpd)) are:

- North approach = 3,620 vpd
- South approach = 4,900 vpd
- East approach = 1,030 vpd
- West approach = 420 vpd

Item H lists the turning movement counts by 15 minute increments and also lists the AM Peak Hour, Off Peak Hour, and PM Peak Hour. The 2010 Iowa DOT annual average daily traffic (AADT) on 19th Avenue North west of North 3rd Street was 290 vpd and west of North 2nd Street was 2,990 vpd.

Collision History

From January 1, 2008 through December 31, 2012, the intersection of 19th Avenue North with North 3rd Street had a total of 18 reported crashes. Of the 18 crashes, 15 crashes were caused by failure to yield right-of-way or ran STOP sign with 10 crashes occurring at right angles. The table below summarizes the reported crashes at the intersection by severity including injuries. The crash rate of the intersection is 0.99 crashes per million entering vehicles (MEV). The statewide average crash rate for similar intersection is 0.99 crashes per MEV. Crash summary and collision diagram is included in the Appendix.

Crash (Injury) Severity 19th Avenue North & North 3rd Street
(2008-2012)

Year	Fatal	Major Injury	Minor Injury	Possible/Unknown	PDO	Total	Amount of Property Damage
2008	-	-	1 (1)	-	1	2 (1)	\$7,000
2009	-	-	-	-	1	1 (0)	\$2,200
2010	-	-	2 (2)	3 (7)	2	7 (9)	\$63,600
2011	-	-	1 (2)	-	2	3 (2)	\$14,000
2012	-	-	-	3 (3)	2	5 (3)	\$32,000
Total	-	-	4 (5)	6 (10)	8	18 (15)	\$118,800

Improvements

To improve the safety and operations at the intersection of 19th Avenue North and North 3rd Street, the City of Clinton intends to install a permanent traffic signal and provide eastbound and westbound left turn lanes on 19th Avenue North. Also to improve safety and operations the City of Clinton plans to convert 19th Avenue North from a two-lane cross section to a three-lane cross section with center two-way left turn lane both east and west of North 3rd Street. This will create eastbound/westbound left turn lanes at the intersection.

The proposed traffic signal will be fully actuated providing a protected/permissive left turn phase for eastbound/westbound traffic, an eastbound/westbound through phase, and northbound/southbound through phase. Protected/permissive left turn phasing will be provided via flashing yellow arrow. Vehicle detection will be video and pedestrian actuated pushbuttons will be provided to cross each approach. Coordination will be provided with the adjacent traffic signal at the intersection of 19th Avenue North and North 2nd Street. Traffic signal pole placement will maintain clear zone of 10' from back of curb. A proposed layout for the traffic signal is attached as Item I. The traffic signal will assign right-of-way and create gaps in traffic resulting in better traffic operations and reduction in right angle and left turn collisions.

The conversion of 19th Avenue North from a two-lane cross section to a three-lane cross section is part of the 19th Avenue North reconstruction/extension project. The project will include wider 19th Avenue North west of North 3rd Street to Randall Court and extending 19th Avenue North west to Mill Creek Parkway. Portions of 19th Avenue North have already been constructed from Mill Creek Parkway to 2,500' east of Springdale Drive. The extension of 19th Avenue North will provide an alternate route for travel west of North 3rd Street. The projected 2030 AADT on 19th Avenue North is 11,000 vpd. This increase in traffic volume on 19th Avenue North will add difficulty to find adequate gaps in North 3rd Street traffic to make a maneuver from the stopped approaches due to the balanced approach volumes on 19th Avenue North. Today the traffic volumes on 19th Avenue North approaches have the intersection operate similar to a T-intersection due to the small volume of vehicles on the west approach. The increase in traffic volumes will increase the crash exposure level at the intersection resulting in a significant increase in crashes if traffic control remains unchanged. The existing traffic volumes do not warrant a traffic signal per MUTCD guidelines, but the estimated daily traffic volume of 8,200 vpd on 19th Avenue North for opening year of 2015 does satisfy MUTCD signal warrant guidelines.

ITEMIZED PROJECT COST BREAKDOWN
19th AVENUE NORTH AND NORTH 3rd STREET TRAFFIC SIGNALIZATION
CLINTON, IOWA

ESTIMATED COST

ITEM	Equipment/Materials	Installation	Total
Traffic Signal	\$75,000	\$75,000	\$150,000
Construction Total			\$150,000
Engineering & Administration			\$24,000
TOTAL OPINION			\$174,000

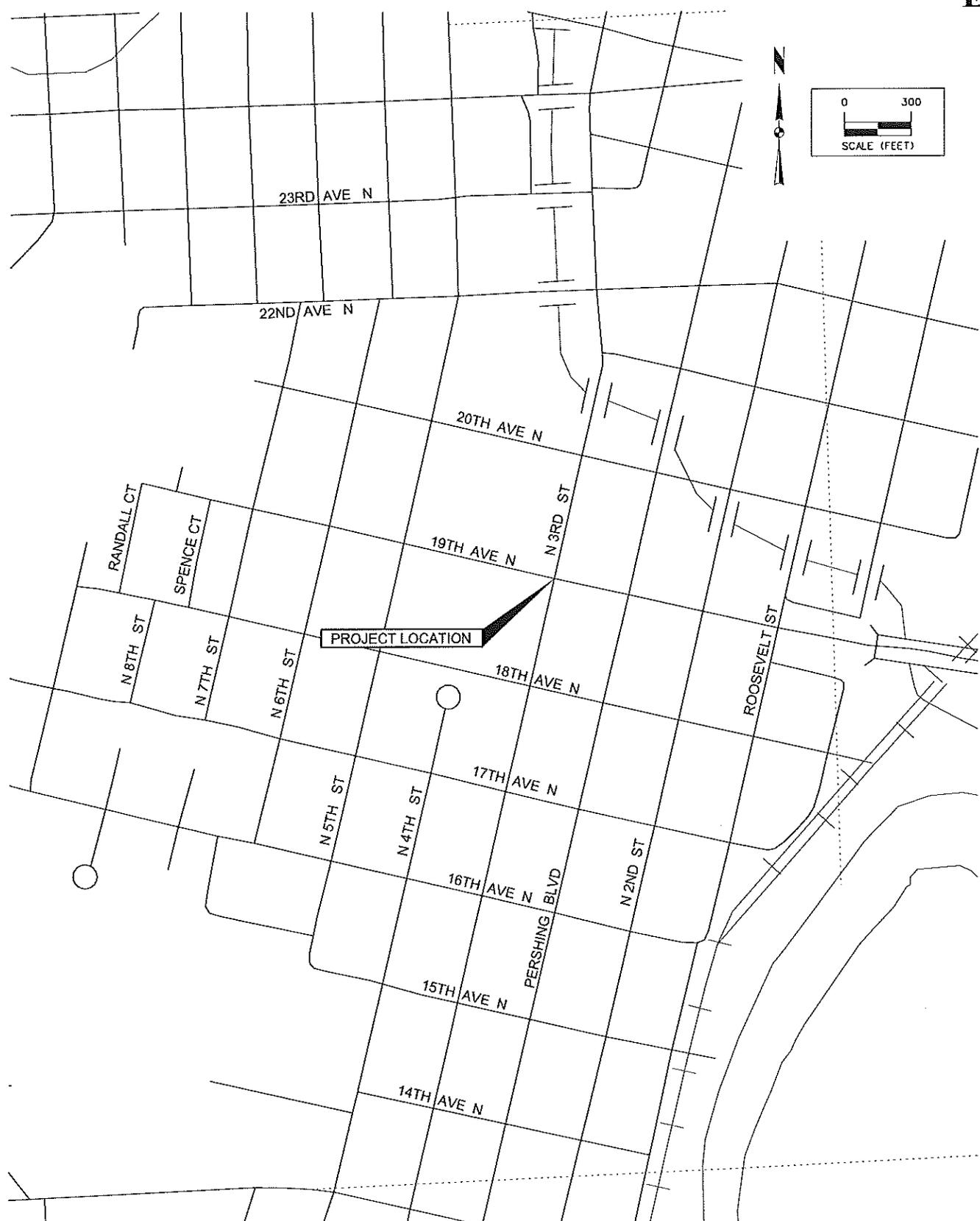
FUNDING SUMMARY

SOURCE	AMOUNT
Traffic Safety Improvement Program Funding (Traffic Control Device)	\$75,000
Surface Transportation Program ECIA Funding (80% of Remaining Construction Costs Plus Engineering)	\$79,200
Local Funding (20% of Remaining Costs)	\$19,800
PROJECT TOTAL	\$174,000

PROPOSED PROJECT SCHEDULE
19th AVENUE NORTH AND NORTH 3rd STREET TRAFFIC SIGNALIZATION
CLINTON, IOWA

August 2013	Traffic Safety Funding Application
August 2013	Project Engineering, Design
December 2013	Iowa DOT Approval
Winter 2013	Iowa DOT Agreement
December 2013	Project Letting
April 2014 - Nov 2014	Project Construction

1600
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JJC 8/5/2013



PROJECT LOCATION
19TH AVENUE N. & N. 3RD STREET
CLINTON, IOWA

08-05-2013

INTERSECTION PHOTOS
19th AVENUE NORTH AND NORTH 3rd STREET TRAFFIC SIGNALIZATION
CLINTON, IOWA



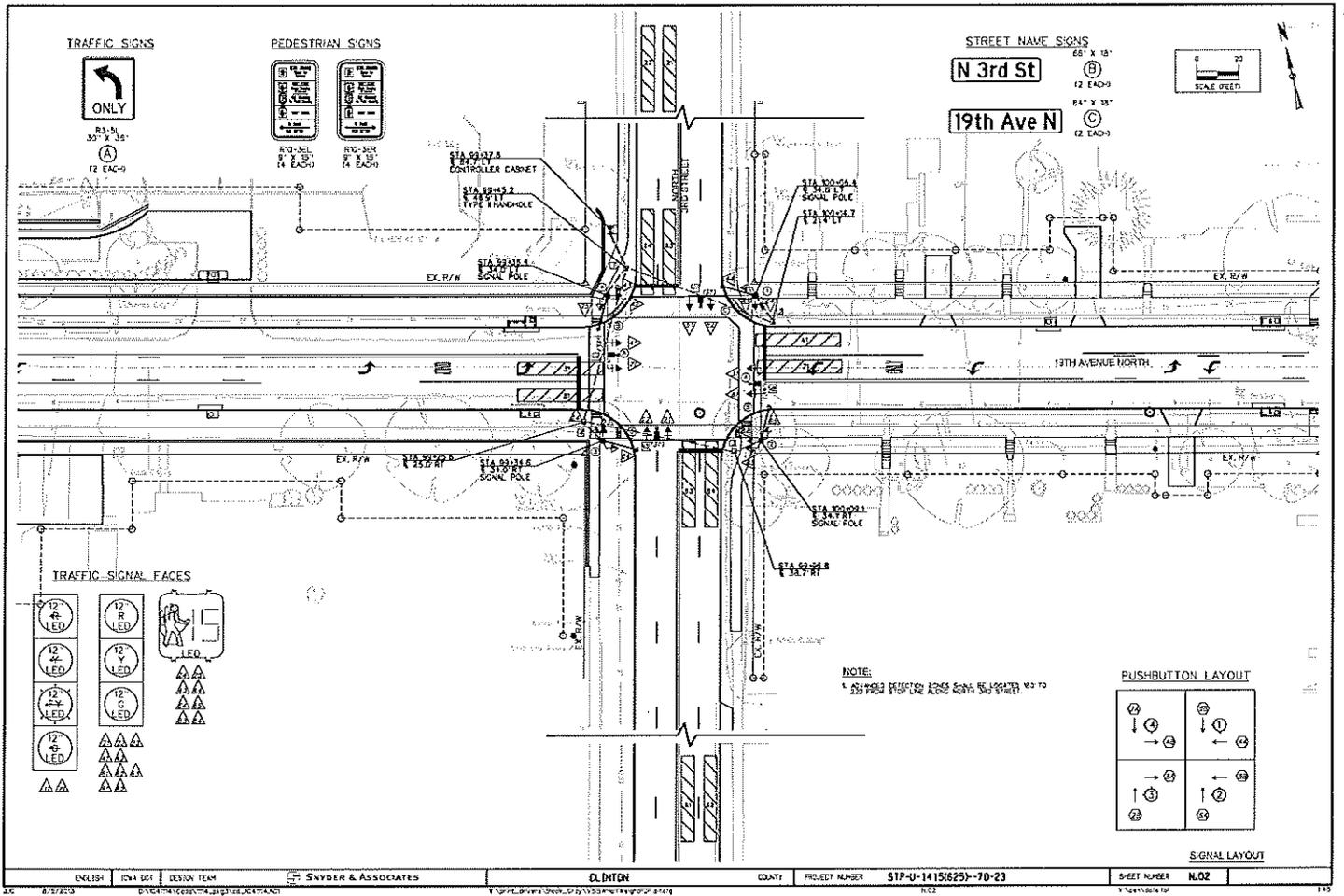
1: Looking west on 19th Avenue towards North 3rd Street



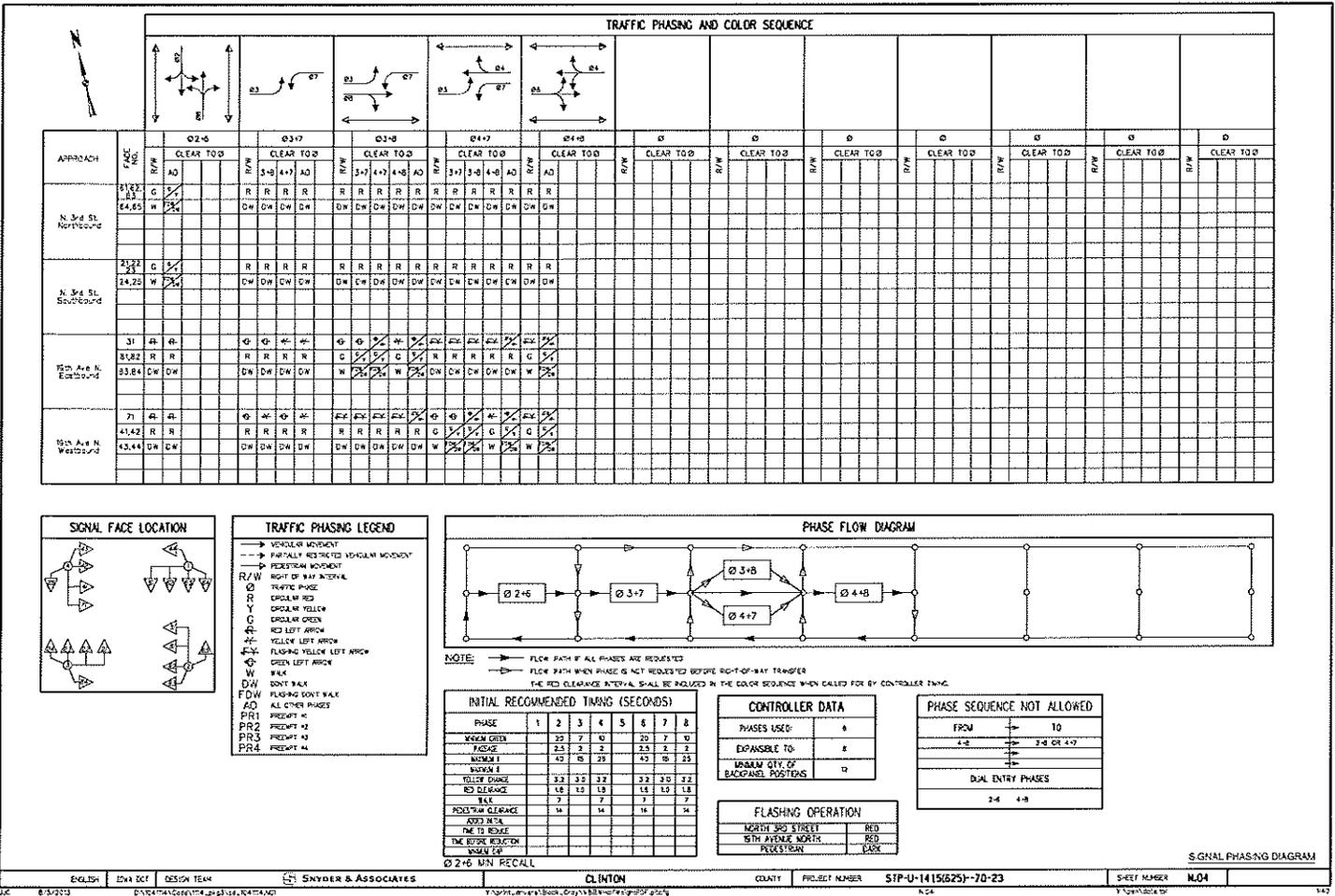
2: Looking south on North 3rd Street towards 19th Avenue North



3: Looking north on North 3rd Street towards 19th Avenue North



ENGLISH	DVA 001	DESIGN TEAM	SNYDER & ASSOCIATES	DULUTH	COUNTY	PROJECT NUMBER	STP-0-1415(625)-70-23	SHEET NUMBER	N.02
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SIGNAL PHASING DIAGRAM

19th Ave N & N 3rd St
Clinton, Iowa

File Name : 19th-3rd_130808
Site Code : 00000000
Start Date : 8/7/2013
Page No : 1

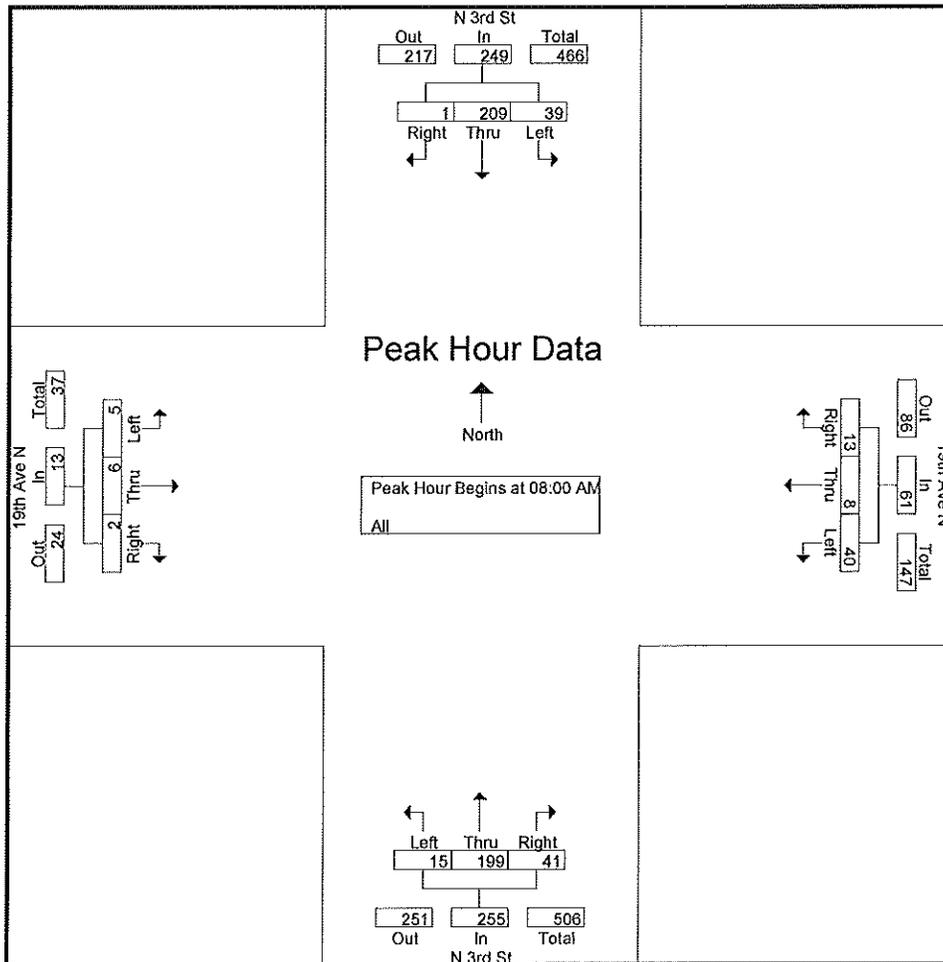
Groups Printed- All

Start Time	N 3rd St From North				19th Ave N From East				N 3rd St From South				19th Ave N From West				Int. Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	
07:45 AM	17	61	2	80	4	3	5	12	9	34	12	55	1	1	3	5	152
Total	17	61	2	80	4	3	5	12	9	34	12	55	1	1	3	5	152
08:00 AM	14	42	0	56	12	3	2	17	6	50	10	66	0	0	2	2	141
08:15 AM	4	50	0	54	3	2	5	10	3	42	9	54	0	1	0	1	119
08:30 AM	11	45	1	57	10	1	4	15	4	54	10	68	0	4	0	4	144
08:45 AM	10	72	0	82	15	2	2	19	2	53	12	67	5	1	0	6	174
Total	39	209	1	249	40	8	13	61	15	199	41	255	5	6	2	13	578
09:00 AM	10	53	1	64	4	1	2	7	3	51	9	63	2	4	0	6	140
*** BREAK ***																	
Total	10	53	1	64	4	1	2	7	3	51	9	63	2	4	0	6	140
*** BREAK ***																	
11:00 AM	10	62	2	74	16	3	2	21	4	82	14	100	0	5	7	12	207
11:15 AM	9	49	2	60	11	4	5	20	4	75	13	92	1	1	4	6	178
11:30 AM	14	63	4	81	10	1	5	16	6	76	17	99	0	4	4	8	204
11:45 AM	16	66	1	83	12	2	5	19	5	72	18	95	1	2	4	7	204
Total	49	240	9	298	49	10	17	76	19	305	62	386	2	12	19	33	793
*** BREAK ***																	
03:00 PM	1	10	1	12	3	0	1	4	2	22	3	27	0	2	1	3	46
03:15 PM	17	52	0	69	8	2	3	13	10	100	21	131	1	2	3	6	219
03:30 PM	16	82	1	99	15	3	3	21	5	123	17	145	0	4	6	10	275
03:45 PM	15	72	2	89	8	3	5	16	4	118	21	143	0	2	3	5	253
Total	49	216	4	269	34	8	12	54	21	363	62	446	1	10	13	24	793
04:00 PM	15	75	0	90	9	3	7	19	3	117	26	146	0	0	2	2	257
04:15 PM	13	66	1	80	13	4	9	26	4	124	23	151	1	3	5	9	266
Grand Total	192	920	18	1130	153	37	65	255	74	1193	235	1502	12	36	44	92	2979
Apprch %	17	81.4	1.6		60	14.5	25.5		4.9	79.4	15.6		13	39.1	47.8		
Total %	6.4	30.9	0.6	37.9	5.1	1.2	2.2	8.6	2.5	40	7.9	50.4	0.4	1.2	1.5	3.1	

19th Ave N & N 3rd St
Clinton, Iowa

File Name : 19th-3rd_130808
Site Code : 00000000
Start Date : 8/7/2013
Page No : 3

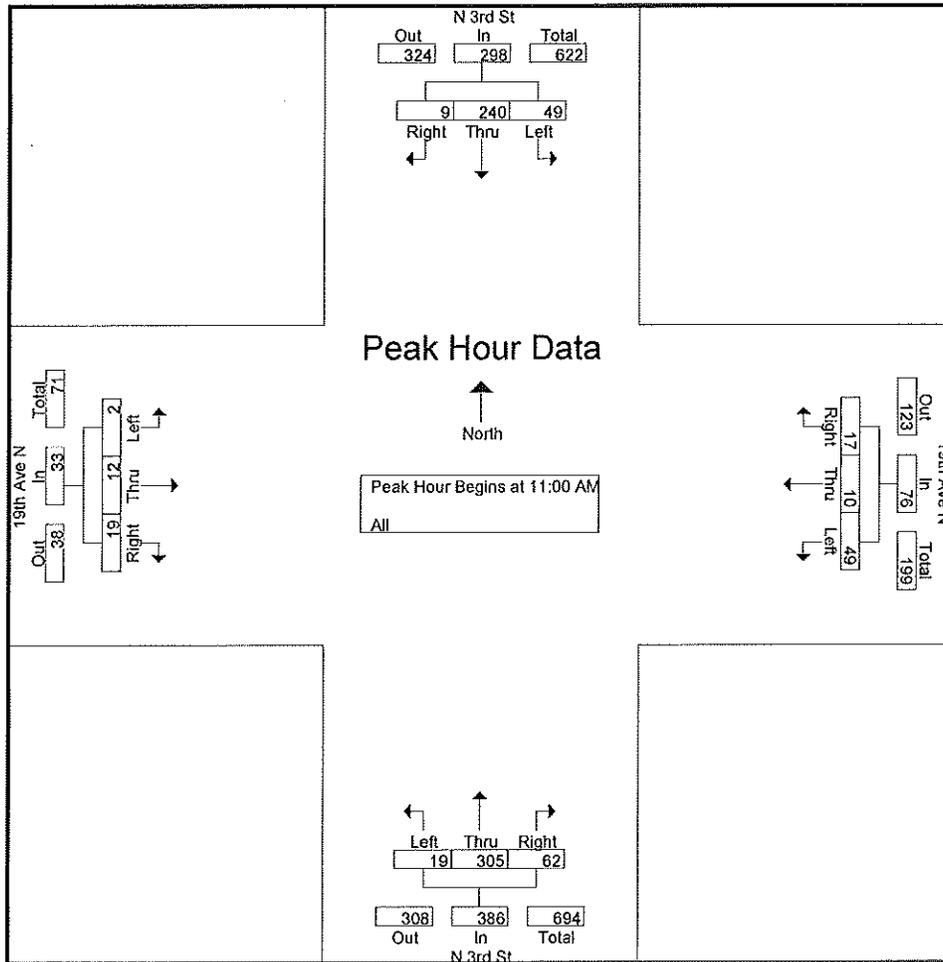
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	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	
Peak Hour Analysis From 07:45 AM to 09:00 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 08:00 AM																	
08:00 AM	14	42	0	56	12	3	2	17	6	50	10	66	0	0	2	2	141
08:15 AM	4	50	0	54	3	2	5	10	3	42	9	54	0	1	0	1	119
08:30 AM	11	45	1	57	10	1	4	15	4	54	10	68	0	4	0	4	144
08:45 AM	10	72	0	82	15	2	2	19	2	53	12	67	5	1	0	6	174
Total Volume	39	209	1	249	40	8	13	61	15	199	41	255	5	6	2	13	578
% App. Total	15.7	83.9	0.4		65.6	13.1	21.3		5.9	78	16.1		38.5	46.2	15.4		
PHF	.696	.726	.250	.759	.667	.667	.650	.803	.625	.921	.854	.938	.250	.375	.250	.542	.830



19th Ave N & N 3rd St
Clinton, Iowa

File Name : 19th-3rd_130808
Site Code : 00000000
Start Date : 8/7/2013
Page No : 4

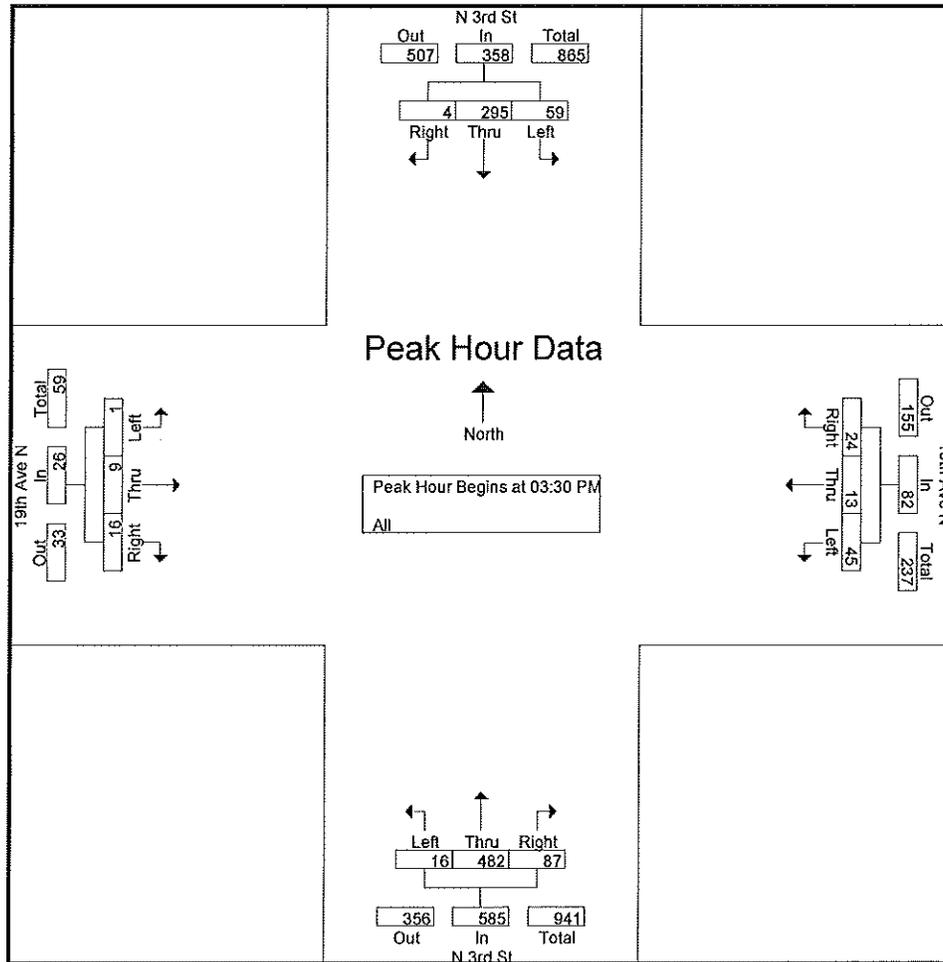
Start Time	N 3rd St From North				19th Ave N From East				N 3rd St From South				19th Ave N From West				Int. Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	
Peak Hour Analysis From 11:00 AM to 11:45 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 11:00 AM																	
11:00 AM	10	62	2	74	16	3	2	21	4	82	14	100	0	5	7	12	207
11:15 AM	9	49	2	60	11	4	5	20	4	75	13	92	1	1	4	6	178
11:30 AM	14	63	4	81	10	1	5	16	6	76	17	99	0	4	4	8	204
11:45 AM	16	66	1	83	12	2	5	19	5	72	18	95	1	2	4	7	204
Total Volume	49	240	9	298	49	10	17	76	19	305	62	386	2	12	19	33	793
% App. Total	16.4	80.5	3		64.5	13.2	22.4		4.9	79	16.1		6.1	36.4	57.6		
PHF	.766	.909	.563	.898	.766	.625	.850	.905	.792	.930	.861	.965	.500	.600	.679	.688	.958



19th Ave N & N 3rd St
Clinton, Iowa

File Name : 19th-3rd_130808
Site Code : 00000000
Start Date : 8/7/2013
Page No : 5

Start Time	N 3rd St From North				19th Ave N From East				N 3rd St From South				19th Ave N From West				Int. Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	
Peak Hour Analysis From 03:00 PM to 04:15 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 03:30 PM																	
03:30 PM	16	82	1	99	15	3	3	21	5	123	17	145	0	4	6	10	275
03:45 PM	15	72	2	89	8	3	5	16	4	118	21	143	0	2	3	5	253
04:00 PM	15	75	0	90	9	3	7	19	3	117	26	146	0	0	2	2	257
04:15 PM	13	66	1	80	13	4	9	26	4	124	23	151	1	3	5	9	266
Total Volume	59	295	4	358	45	13	24	82	16	482	87	585	1	9	16	26	1051
% App. Total	16.5	82.4	1.1		54.9	15.9	29.3		2.7	82.4	14.9		3.8	34.6	61.5		
PHF	.922	.899	.500	.904	.750	.813	.667	.788	.800	.972	.837	.969	.250	.563	.667	.650	.955



Benefit/Cost Ratio Calculations

The Benefit/Cost Calculations were based on Iowa DOT Office of Traffic and Safety recommendations. The crash reductions factor applied was from the Federal Highway Administration's Crash Modification Factors Clearinghouse.

- Service Life: 15 years
- Crash Reduction Factor: Install traffic signal 10 (A very conservative estimate to obtain B/C ratio under 2.0. A CRF of 17 is recommended per Crash Modifications Factors Clearinghouse.)
- Growth: A conservative growth rate of 1% per year was assumed over the service life of the improvements.

Intersection or Spot Benefit / Cost Safety Analysis

Iowa DOT Office of Traffic & Safety

County: Clinton Prepared by: JJ Date Prepared: Aug. 12, 2013

Intersection: 19th Ave N & N 3rd ST

Improvement

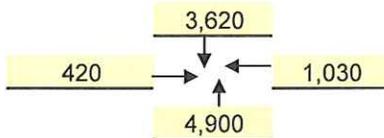
Proposed Improvement(s): Traffic signalization protected/permissive left turn phasing and left turn lanes lanes on 19th Ave N.

\$ <u>75,000</u> Estimated Improvement Cost, EC	15 Est. Improvement Life, years, Y
\$ - Other Annual Cost (after initial year), AC	10 Crash Reduction Factor (integer), CRF
\$ - Present Value Other Annual Costs, OC	4.0% Discount Rate (time value of \$), INT
$OC = \frac{AC}{INT} \left(1 - \frac{1}{(1 + INT)^Y} \right)$	
\$ 75,000 Present Value Cost, COST = EC + OC	

Traffic Volume Data

Source: City Peak Hour Cnt, AADT estimated from adjacent DOT Co 8/7/2013 Date of traffic count

Daily Entering Vehicles by Approach (or AADT / 2)



3,639,050 Current Annual Entering Veh., **AEV** = DEV * 365

11,575 veh / day, Final Year DEV, **FDEV**

58.58 MEV, Total Million Entering Veh. Over life of Project, **TMEV**

1.0% Projected Traffic Growth (0%-10%), **G**

$$TMEV = \frac{AEV}{-G} \left(1 - \left(\frac{1+G}{1} \right)^Y \right) / 10^6$$

9,970 Current Daily Entering Vehicles, **DEV**

Crash Data

<u>2008</u>	First full year -->	<u>2012</u>	Last full year	5.0 years, Time Period, T
	Additional months			values as of Dec. 2007
0	Fatal Crashes	0	Fatalities @	\$3,500,000 \$ -
10	Injury Crashes	5	Minor Injuries @	\$240,000 \$ 240,000
8	Property Damage Only	10	Possible Injuries @	\$25,000 \$ 250,000
18	Total Crashes, TA		(assumed cost per crash)	\$2,700 \$ -
			-OR- enter all Property Costs of all crashes:	\$ 109,600
			Total \$ Loss, LOSS	\$ 599,600

3.60 Current Crashes / Year, AA = TA / T	0.99 Crashes / MEV, Crash Rate, CR
\$ 33,311 Cost per Crash, AVC = LOSS / TA	CR = TA x 10 ⁶ / (DEV x 365 x T)
57.9 Total Expected Crashes, TECR = CR x TMEV	\$ 142,047 Present Value of Avoided Crashes, BENEFIT
0.36 Crashes Avoided First Year AAR = AA x CRF / 100	
\$ 11,992 Crash Costs Avoided in First Year, AAR x AVC	
5.8 Total Avoided Crashes, TECR x CRF / 100	
	$BEN. = \frac{AVC \times AAR}{(INT - G)} \left(1 - \left(\frac{1+G}{1+INT} \right)^Y \right)$

Benefit / Cost Ratio

Benefit : Cost = \$142,047 : \$75,000 = **1.89** : 1

APPENDIX

- **Crash Summary**
- **MUTCD Warrant Analysis Worksheet**



Major Cause Summary

N 3rd St & 19th Ave N, Clinton, Iowa

Report Version 1.1 Jan 2005

Analysis Years: 2008 [2], 2009 [1], 2010 [7], 2011 [3], 2012 [5]

Crash Summary:

Fatal	-
Major Injury	-
Minor Injury	4
Possible/Unknown	6
PDO	8
Total Crashes	18

Injury Summary:

Fatal	-
Major Injury	-
Minor Injury	5
Possible	10
Unknown	-
Total Injuries	15

Surface Condition Summary:

Dry	15
Wet	1
Ice	1
Snow	1
Slush	-
Sand/Dirt/Oil/Gravel	-
Water	-
Other	-
Unknown	-
Not Reported	-
Total Crashes	18

TOT Property Damage: \$118,800

AVG Property Damage: \$6,600

Major Cause Summary:

- | | |
|---|--|
| Animal | Improper Backing |
| Ran Traffic Signal | Illegally Parked/Unattended |
| 2 Ran Stop Sign | Swerving/Evasive Action |
| Crossed Centerline | Over-Correcting/Over-Steering |
| FTYROW: At Uncontrolled Intersection | Downhill Runaway |
| FTYROW: Making Right Turn on Red Signal | Equipment Failure |
| 5 FTYROW: From Stop Sign | Separation of Units |
| FTYROW: From Yield Sign | Ran Off Road - Right |
| 8 FTYROW: Making Left Turn | Ran Off Road - Straight |
| FTYROW: From Driveway | Ran Off Road - Left |
| FTYROW: From Parked Position | Lost Control |
| FTYROW: To Pedestrian | Inattentive/Distracted By: Passenger |
| FTYROW: Other (explain in narrative) | Inattentive/Distracted By: Use of Phone or Other |
| Traveling Wrong Way or on Wrong Side of Rd | Inattentive/Distracted By: Fallen Object |
| Driving Too Fast for Conditions | Inattentive/Distracted By: Fatigued/Asleep |
| Exceeded Authorized Speed | Other: Vision Obstructed |
| 1 Made Improper Turn | Oversized Load/ Oversized Vehicle |
| Improper Lane Change | Cargo/Equipment Loss or Shift |
| 1 Followed Too Close | 1 Other: Other Improper Action |
| Disregarded Railroad Signal | Unknown |
| Disregarded Warning Sign | Other: No Improper Action |
| Operating Vehicle in Reckless/Aggressive Manner | None Indicated |

Selection Filter:

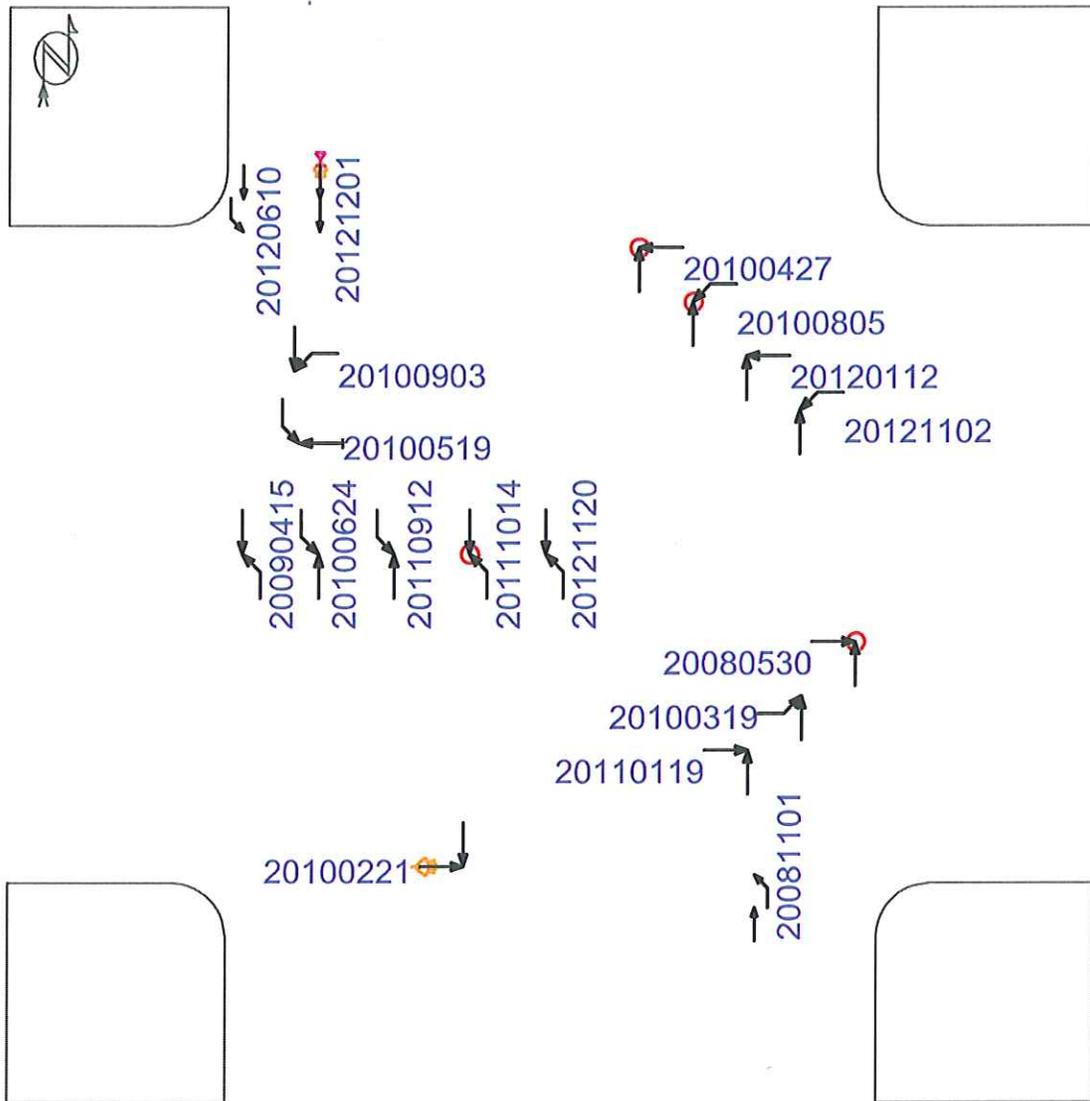
((YEAR = 2008 or YEAR = 2009 or YEAR = 2010 or YEAR = 2011 or YEAR = 2012))

Analyst:

Notes:

19th Avenue North & North 3rd Street

2008 - 2012 Reportable Crashes



(0) 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

- × Pedestrian
- × Bicycle
- Injury
- ⊙ Fatality
- ★ Nighttime
- ⚠ DUI

Fixed objects:

- General
- ▣ Signal
- ▣ Tree
- ▣ Pole
- ▣ Curb
- ⊗ Animal
- ◁ 3rd vehicle
- * Extra data

Pd' Programming, Inc. 08/03/2013

Snyder & Associates, Inc.
Ankeny, Iowa

Study Name : 19th-3rd
Study Date : 08/05/13
Page No. : 1

Signal Warrants - Summary

Major Street Approaches

Northbound: North 3rd St
Number of Lanes: 2
85% Speed < 40 MPH.
Total Approach Volume: 4,902

Southbound: North 3rd St
Number of Lanes: 2
85% Speed < 40 MPH.
Total Approach Volume: 3,620

Minor Street Approaches

Eastbound: 19th Ave North
Number of Lanes: 1

Total Approach Volume: 420

Westbound: 19th Ave North
Number of Lanes: 1

Total Approach Volume: 1,032

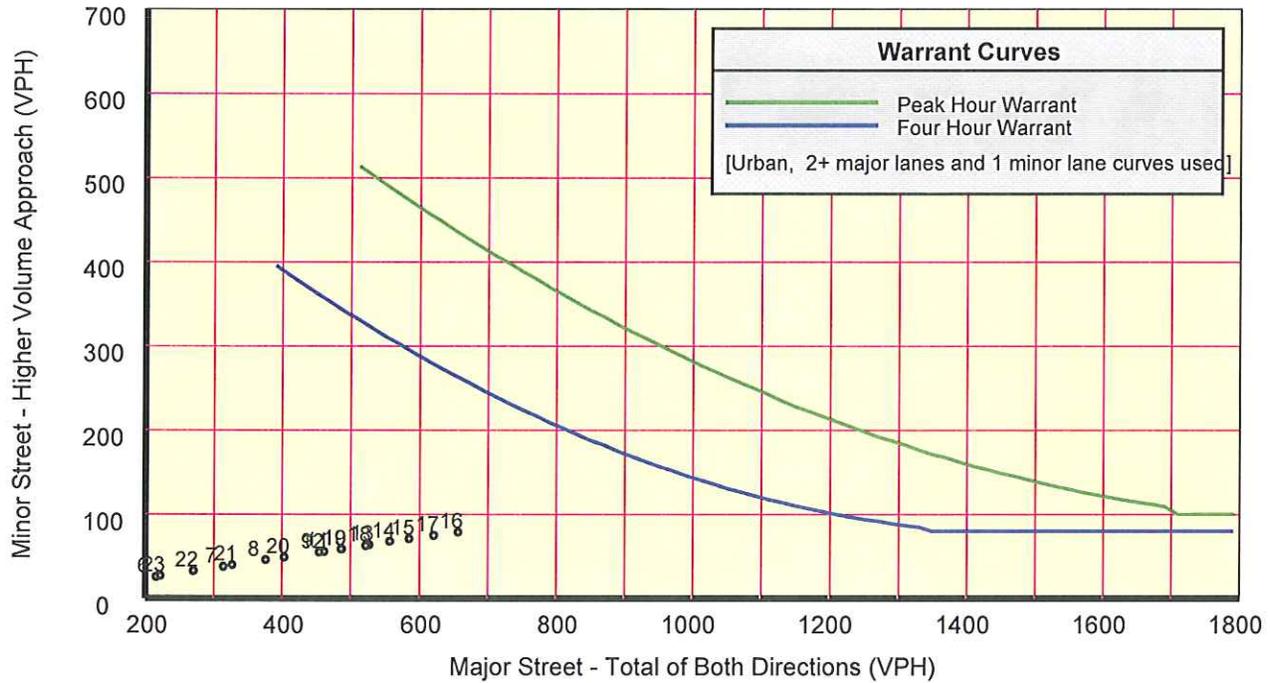
Warrant Summary (Urban values apply.)

Warrant 1 - Eight Hour Vehicular Volumes	Not Satisfied
Warrant 1A - Minimum Vehicular Volume Not Satisfied	
Required volumes reached for 0 hours, 8 are needed	
Warrant 1B - Interruption of Continuous Traffic Not Satisfied	
Required volumes reached for 0 hours, 8 are needed	
Warrant 1 A&B - Combination of Warrants Not Satisfied	
Required volumes reached for 0 hours, 8 are needed	
Warrant 2 - Four Hour Volumes	Not Satisfied
Number of hours (0) volumes exceed minimum < minimum required (4).	
Warrant 3 - Peak Hour	Not Satisfied
Warrant 3A - Peak Hour Delay Not Satisfied	
Total approach volumes and delays on minor street do not exceed minimums for any hour.	
Warrant 3B - Peak Hour Volumes Not Satisfied	
Volumes do not exceed minimums for any hour.	
Warrant 4 - Pedestrian Volumes	Not Evaluated
Warrant 5 - School Crossing	Not Evaluated
Warrant 6 - Coordinated Signal System	Not Evaluated
Warrant 7 - Crash Experience	Not Satisfied
Number of accidents (2) is less than minimum (5). Volume minimums are not met.	
Warrant 8 - Roadway Network	Not Evaluated
Warrant 9 - Intersection Near a Grade Crossing	Not Evaluated

Snyder & Associates, Inc.
Ankeny, Iowa

Study Name : 19th-3rd
Study Date : 08/05/13
Page No. : 2

Signal Warrants - Summary



Analysis of 8-Hour Volume Warrants:

War 1A-Minimum Volume

War 1B-Interruption of Traffic

War 1C-Combination of Warrants

Hour Begin	Major Total	Minor Vol	Maj Dir	Min 600	Min 150	Hour Begin	Major Total	Minor Vol	Maj Dir	Min 900	Min 75	Hour Begin	Major Total	Minor Vol	Maj Dir	Min 720	Min 120
16:00	657	79	W	Yes	No	16:00	657	79	W	No	Yes	16:00	657	79	W	No	No
15:45	657	79	W	Yes	No	15:45	657	79	W	No	Yes	15:45	657	79	W	No	No
15:30	657	79	W	Yes	No	15:30	657	79	W	No	Yes	15:30	657	79	W	No	No
15:15	657	79	W	Yes	No	15:15	657	79	W	No	Yes	15:15	657	79	W	No	No
17:00	622	75	W	Yes	No	17:00	622	75	W	No	Yes	17:00	622	75	W	No	No
16:45	622	75	W	Yes	No	16:45	622	75	W	No	Yes	16:45	622	75	W	No	No
16:30	622	75	W	Yes	No	16:30	622	75	W	No	Yes	16:30	622	75	W	No	No
16:15	622	75	W	Yes	No	16:15	622	75	W	No	Yes	16:15	622	75	W	No	No
15:00	586	71	W	No	No	15:00	586	71	W	No	No	15:00	586	71	W	No	No
14:45	586	71	W	No	No	14:45	586	71	W	No	No	14:45	586	71	W	No	No
14:30	586	71	W	No	No	14:30	586	71	W	No	No	14:30	586	71	W	No	No
14:15	586	71	W	No	No	14:15	586	71	W	No	No	14:15	586	71	W	No	No
14:00	558	68	W	No	No	14:00	558	68	W	No	No	14:00	558	68	W	No	No
13:45	558	68	W	No	No	13:45	558	68	W	No	No	13:45	558	68	W	No	No
13:30	558	68	W	No	No	13:30	558	68	W	No	No	13:30	558	68	W	No	No
13:15	558	68	W	No	No	13:15	558	68	W	No	No	13:15	558	68	W	No	No
13:00	527	64	W	No	No	13:00	527	64	W	No	No	13:00	527	64	W	No	No
12:45	527	64	W	No	No	12:45	527	64	W	No	No	12:45	527	64	W	No	No
12:30	527	64	W	No	No	12:30	527	64	W	No	No	12:30	527	64	W	No	No
12:15	527	64	W	No	No	12:15	527	64	W	No	No	12:15	527	64	W	No	No
18:00	522	63	W	No	No	18:00	522	63	W	No	No	18:00	522	63	W	No	No
17:45	522	63	W	No	No	17:45	522	63	W	No	No	17:45	522	63	W	No	No
17:30	522	63	W	No	No	17:30	522	63	W	No	No	17:30	522	63	W	No	No
17:15	522	63	W	No	No	17:15	522	63	W	No	No	17:15	522	63	W	No	No



City of BLUE GRASS

Traffic Light Grant Application

August 14, 2013



“Our liberties we pride, our rights we will maintain”

Office of Traffic and Safety
Iowa DOT
800 Lincoln Way
Ames, Iowa 50010

To Mr. Ostendorf,

May this letter serve as an introduction to the City Blue Grass grant request for traffic signals and updated equipment. As an Officer of the Blue Grass Police Department, I humbly submit our grant proposal for your review. We are requesting the amount of \$3,84,000.00 for equipment for new traffic lights.

As of the 2010 Census reports, the City of Blue Grass population is 1,452 people. From 2000 to 2010, the Blue Grass city population growth percentage was 24.2% (or from 1,169 people to 1,452 people). This gives a population density of 539 people per square mile. The city of Blue Grass as a whole is 50 square miles and continually growing.

The city of Blue Grass is a prime travel thoroughfare due to Hwy 61 and Y40 traveling through the city. Blue Grass is rich in out of town travelers throughout the year with its favorable small town atmosphere just 15 minutes away from numerous major metropolitan areas. The City of Blue Grass has numerous establishments that attract residents from the neighboring counties and cities. In the summer months, there are numerous outside recreational activities, such as festivals, parades, running and or bike riding on the bike paths, hiking and numerous city parks, which makes for an enriched area desperately in need of traffic regulation.

Our ability to better protect our drivers by reducing traffic violations and traffic accidents relies greatly on the tools we can use to better benefit our city streets and the residents of Blue Grass. The funding we are seeking would be used for new traffic control lights and to update existing traffic control devices greatly needed at three intersection locations. These intersections of interest prove to be busiest and most necessary thoroughfares in the city for travelers and pedestrians.

Thank you, for taking the time to consider this grant proposal. I am confident we will continue to be successful in reducing traffic accidents and being proactive when it comes to providing the best possible safety for those who travel in our city, while working proactively with you as our greatest resource.

Respectfully,

Sergeant Garrett Jahns

Application for TRAFFIC SAFETY FUNDS

GENERAL INFORMATION

Location / Title of Project City of Blue Grass Iowa

Applicant Brinson Kinzer, Mayor

Contact Person Ann Schmidt, City Clerk Title City Clerk

Complete Mailing Address 114 N. Mississippi Street
Blue Grass, IA 52726

Phone (563) 381-4700 E-Mail aschmidt@bluegrassia.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:

Application Type

Site Specific

Traffic Control Device

Safety Study

Funding Amount

Total Project Cost \$ 384,000.00

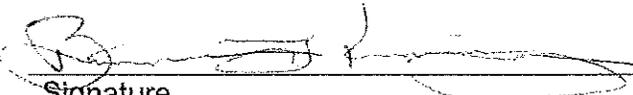
Safety Funds Requested \$ 384,000.00

APPLICATION CERTIFICATION FOR LOCAL GOVERNMENT

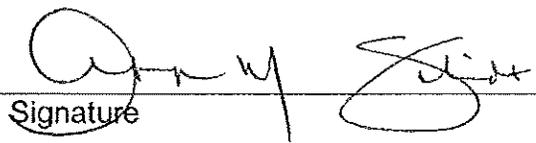
To the best of my knowledge and belief, all information included in this application is true and accurate, including the commitment of all physical and financial resources. This application has been duly authorized by the participating local government(s). I understand the attached resolution(s) binds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

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

Representing the City of Blue Grass

Signed:  8-15-2013
Signature Date Signed

Brinson L. Kinzer, Mayor
Typed Name

Attest:  8-15-13
Signature Date Signed

Ann M. Schmidt
Typed Name

TRAFFIC CONTROL DEVIC APPLICATION SUPPORTING DOCUMENTATION

A. See attached application.

B. Narrative

Existing Conditions

The first intersection is a "Tee" intersection at Sycamore Street and N. Mississippi Street which serves Blue Grass Elementary School to the west. This intersection is currently signalized without typical mast arms and poles and instead is more of a temporary installation with signals hanging from wires spanning existing utility poles. Safety is critical here due to the large amount of pedestrian traffic during school days. Traffic volumes are high on both roadways. Speed limit is 25 mph on both streets. Existing clear zone is 10 feet off edge of pavement and 18" off face of curb, where applicable.

The second intersection is the main intersection in town at Mayne Street and Mississippi Street. It is an existing signalized intersection that the City has chosen to convert to a four way stop with flashing red in all directions. This change occurred when the Highway 61 bypass occurred. The City is still very interested in keeping the flashing red four way stop condition for the intersection. Existing signals, mast arm poles, and mast arms are old and in need of replacement. A large amount of pedestrian traffic occurs at this intersection all days, but especially during school days. Traffic volumes are very high on both roadways. Speed limit is 25 mph on Mississippi Street and 35 mph on Mayne Street. Existing clear zone is 10 feet off edge of pavement and 18" off face of curb, where applicable.

The third intersection is at Oak Lane and Mayne Street at the west end of town. This intersection is currently an unsignalized 2 way stop intersection with a flashing red light hung on wires over the center of the intersection. In the near future, the intersection will warrant signals due to the fact that the Scott County West Business Park is located northwest of this location and development is occurring rapidly. A drive-in theatre is currently being reviewed for construction in the business park with its access being west of this intersection and the majority of the traffic will utilize this intersection. Other existing businesses exist directly to the north of the intersection including a Dollar General, Subway, Public Safety Building (fire, ambulance, and police), gas station, and hair salon in the immediate vicinity. Existing traffic volumes are included in Section H and are increasing daily as businesses continue to develop in the west end of Blue Grass. Speed limit is 25 mph on Oak Lane and 35 mph on Mayne Street. Existing clear zone is 10 feet off edge of pavement and 18" off face of curb, where applicable.

Proposed Concept

The project consists of the installation of new traffic signals at 3 intersections in Blue Grass, Iowa.

The first intersection described above will require the removal of the existing signals and wires holding the signals and the installation of new mast arm poles, mast arms, traffic signals, pedestrian signals, pedestal poles, and controller cabinet. The pedestrian signals are necessary due to the large amount of pedestrian traffic due to the school crossing. Signalized intersection shall meet all MUTCD requirements for a "Tee" intersection. Construction plans are currently being developed to improve N. Mississippi Street from Mayne Street to Laurretta Street which includes this intersection. The problem with this intersection is that the existing signals need to be replaced to meet the new geometrics of the proposed N. Mississippi Street improvements and that the

existing signals were not installed with mast arm poles and mast arms. It would also be desirable to install countdown pedestrian signals to improve safety for the school children crossing the intersection daily. Clear zone would be improved as part of the improvements by moving the traffic signals further back away from the pavement.

The second intersection described above will require the removal of the existing signals, mast arm poles, and mast arms and the installation of new mast arm poles, mast arms, traffic signals and a controller cabinet. Pedestrian signals are not necessary here due to the intersection remaining in a 4 way stop condition. Signalized intersection shall meet all MUTCD requirements for a 4 way stop intersection. Construction plans are currently being developed to improve N. Mississippi Street from Mayne Street to Laretta Street which includes this intersection. The problem with this intersection is that the existing signals are old and need to be replaced. The city council is adamant that the signals must remain in service for safety purposes. Clear zone would be improved as part of the improvements by moving the signals further back away from the pavement.

The third intersection is adding signalization to an existing unsignalized intersection. The existing stop signs and flashing red lights will be removed and replaced with new mast arm poles, mast arms, traffic signals, and a controller cabinet. Pedestrian signals are not necessary in this intersection due to low pedestrian activity due to no sidewalks being present in this area. Clear zone requirements will be maintained or approved upon as part of the project by maintaining 12 feet off edge of pavement minimum. Signalized intersection shall meet all MUTCD requirements for a signalized intersection. Construction plans will be required for this intersection prior to construction occurring.

Refer to Section H for traffic volumes, turning movements, and collision experience.

C. Itemized Breakdown of Costs

Intersection 1: \$89,000
Intersection 2: \$137,000
Intersection 3: \$148,000
Total Construction: \$374,000

Total Design for 2&3 (5%): \$14,000

Total Design & Construction: **\$384,000**

Currently, the City of Blue Grass has no other sources of funding this project or any supplementary funds.

D. Time Schedule

The design for the Mississippi Street improvements project will be completed December 2013. This project will be available to bid for Spring 2014 if appropriate funding is located. If the grant is received the construction of signals for all three intersections could be done within 4 weeks during Spring 2014.

E. Maps attached.

F. Pictures attached.

G. Plan View

See attached exhibits.

H. Utilizing 2010 IDOT traffic data, and assuming a 1% increase per year, the following is the existing average daily traffic data:

The first intersection at N. Mississippi Street and Sycamore Street has 1,782 trips to the north and 2,895 to the south on Mississippi Street. Based on Institute for Traffic Engineers data, we would expect Sycamore to have approximately 989 trips per day west of the intersection.

The second intersection at N. Mississippi Street and Mayne Street has 2,895 trips to the north, 1,999 trips to the south, 3,575 trips to the east, and 3,173 trips to the west.

The third intersection at Oak Lane and W. Mayne Street has 1,937 trips to the north and 3,173 trips to the east. Based on Institute for Traffic Engineers data, we would expect Mayne Street west of the intersection to have approximately 354 trips per day and we would expect Oak Lane South of the intersection to have approximately 1,296 trips per day.

Specific turning movements were not available for inclusion in with this grant application due to the fact that actual manual counts were not taken as part of this grant application. All traffic data given was taken from 2010 IDOT traffic data or determined using the above described ITE manual.

There is no known documented collision data available for inclusion in with this grant application.

I. Traffic Signalization

Traffic signals will be generally laid out as shown on the attached exhibits.

Signals at the first intersection shall be actuated with N. Mississippi always being green unless vehicles are detected on Sycamore or if pedestrians are present. Phasing would consist of two phases only: north/south and east with no protected phases required. Detection would be done via video detection on the mast arms.

Signals at the second intersection shall be flashing red only set up as a four way stop. There would be no phasing or detection equipment required.

Signals at the third intersection shall be fully actuated. Phasing would consist of two phases only: north/south and east/west with no protected phases required. Detection would be done via video detection on the mast arms.

J. Benefit/Cost

Benefit/Cost was not determined as part of this grant due to the fact that it is not required for Traffic Control Device applications.



This picture shows the City of Blue Grass. The 1st Intersection is at the north central part of the City at Sycamore Street and N. Mississippi Street. The 2nd Intersection is the main intersection in town at Mississippi Street and Mayne Street. The 3rd Intersection is at the west end of town at Oak Lane and W. Mayne Street.



The Sycamore Street and N. Mississippi Street intersection serves the Blue Grass school.



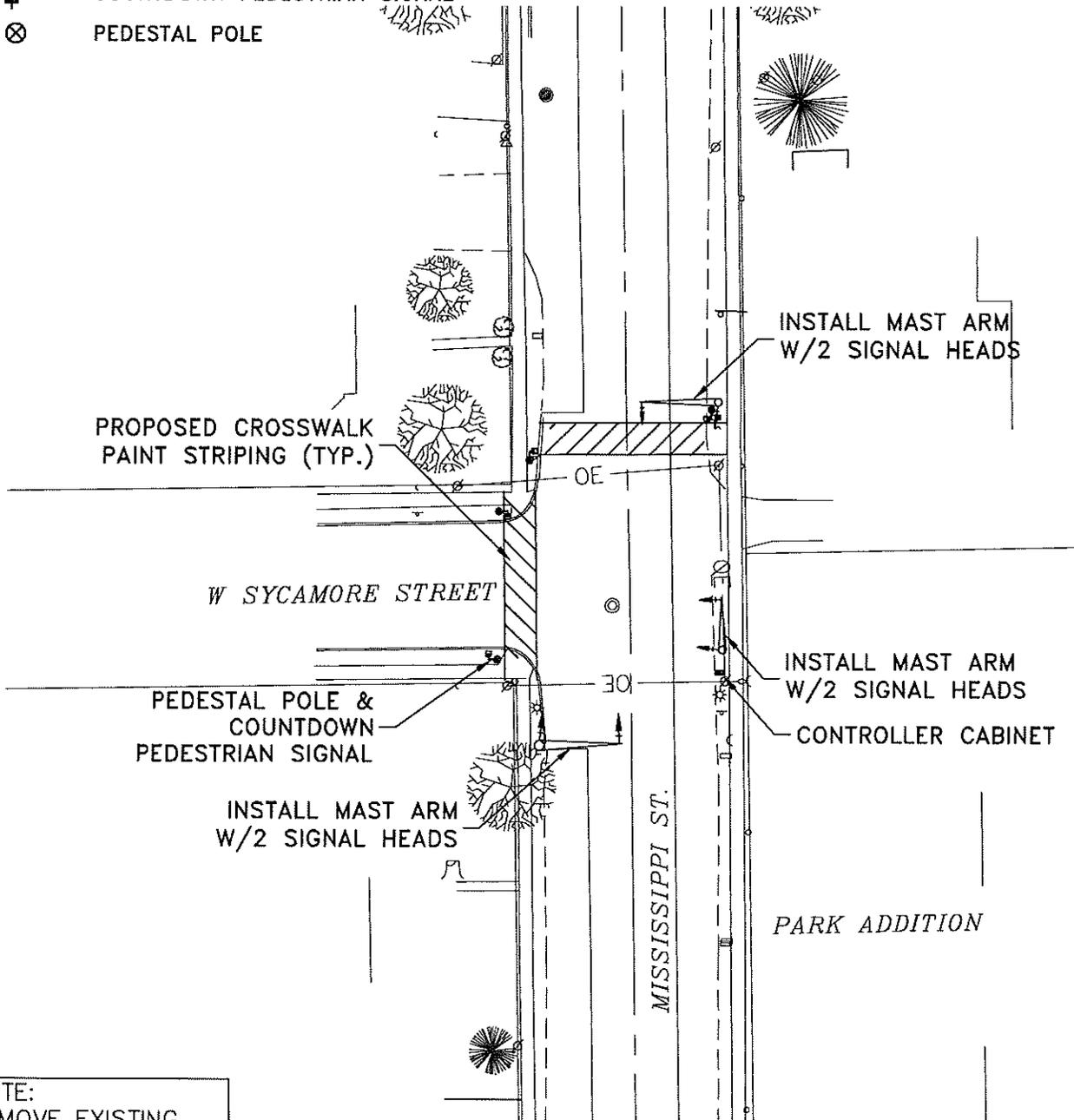
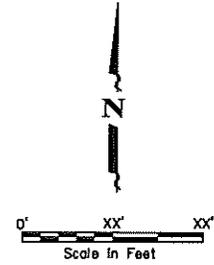
The Mississippi Street and Mayo Street intersection is the busiest intersection in town.



The Oak Lane and W. Mayne Street intersection is currently unsignalized but will need to become signalized in the near future due to developments occurring at the Scott County West Business Park.

TRAFFIC SIGNAL LEGEND:

- MAST ARM POLE, TYPE C
- ⊕ PROPOSED SIGNAL HEAD WITH BACKPLATE
- ⊕ EXISTING SIGNAL HEAD WITH BACKPLATE
- ⊠ CONTROLLER CABINET TYPE "P"
- ⊞ COUNTDOWN PEDESTRIAN SIGNAL
- ⊗ PEDESTAL POLE



NOTE:
REMOVE EXISTING
FLASHING RED LIGHT.

No.	Revision	Date

PLOTTING SCALE:	1" = 40'
DRAWN BY:	CAN
CHECKED BY:	MWJ
DATE:	AUGUST, 2013

McClure
Engineering Associates, Inc.
4700 Kennedy Drive East, Moline, Illinois 61244
(309) 792-9350 Fax (309) 792-8974
Design Firm License #1904754-000815
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W. SYCAMORE STREET & MISSISSIPPI STREET
PROPOSED SIGNALIZED INTERSECTION

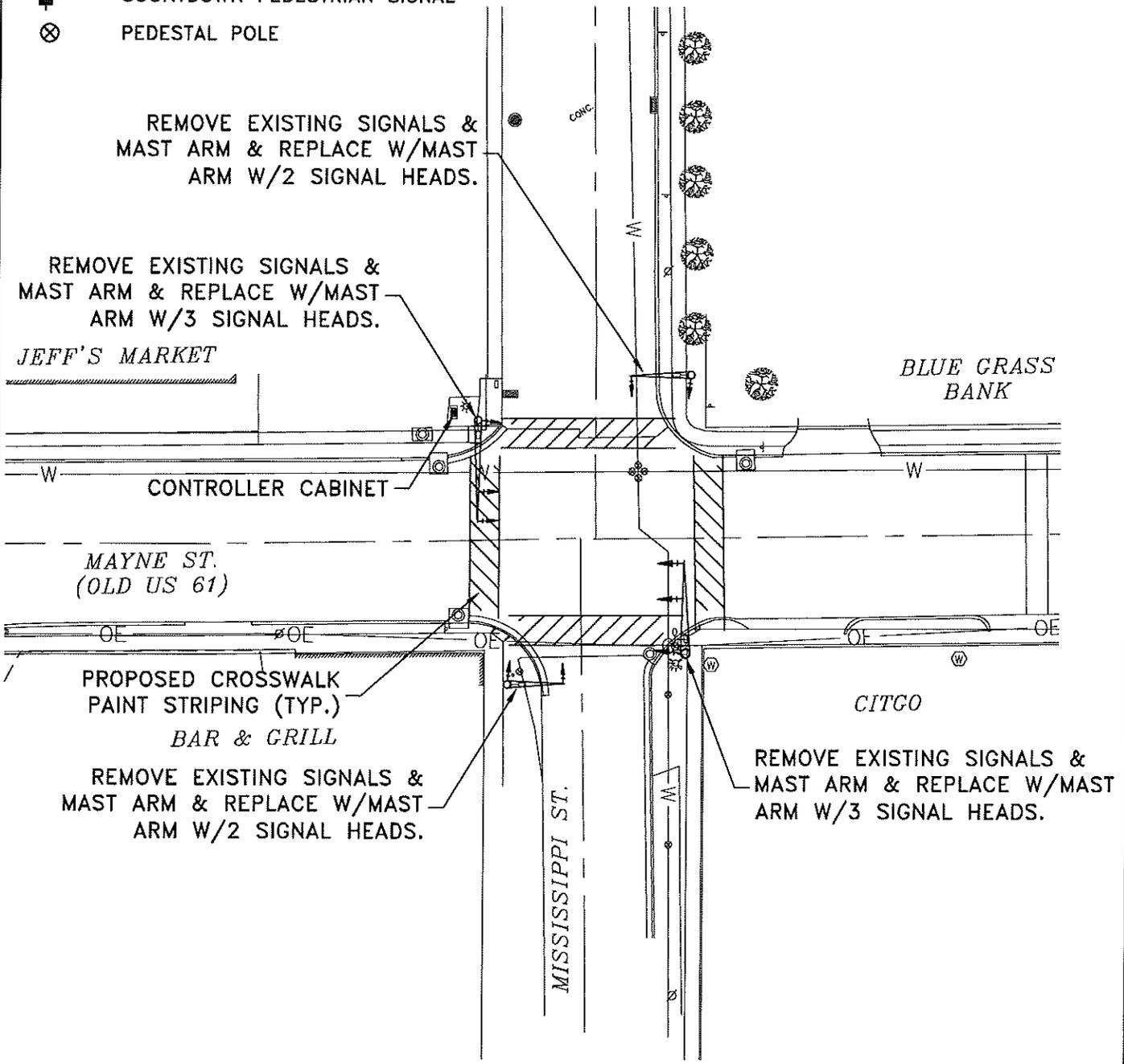
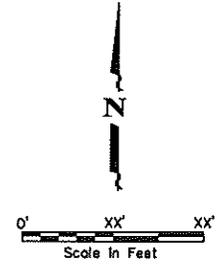
IOWA TRAFFIC SAFETY IMPROVEMENT PROGRAM GRANT BLUE GRASS, IOWA

FILE NAME: T:\ABG113.003\DWG\Traffic Control 08-13-13.dwg JOB NUMBER: 01-01-13-003

SHEET NO.	1
OF	3
178	

TRAFFIC SIGNAL LEGEND:

- MAST ARM POLE, TYPE C
- ⊕ PROPOSED SIGNAL HEAD WITH BACKPLATE
- ⊕ EXISTING SIGNAL HEAD WITH BACKPLATE
- ⊠ CONTROLLER CABINET TYPE "P"
- ⊞ COUNTDOWN PEDESTRIAN SIGNAL
- ⊗ PEDESTAL POLE



No.	Revision	Date

PLOTTING SCALE:	1" = 40'
DRAWN BY:	CAN
CHECKED BY:	MWJ
DATE:	AUGUST, 2013

McClure
Engineering Associates, Inc.

4700 Kennedy Drive
(308) 792-9350

East Moline, Illinois 61244
Fax (308) 792-8874

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**MISSISSIPPI STREET AND MAYNE STREET
PROPOSED SIGNALIZED INTERSECTION**

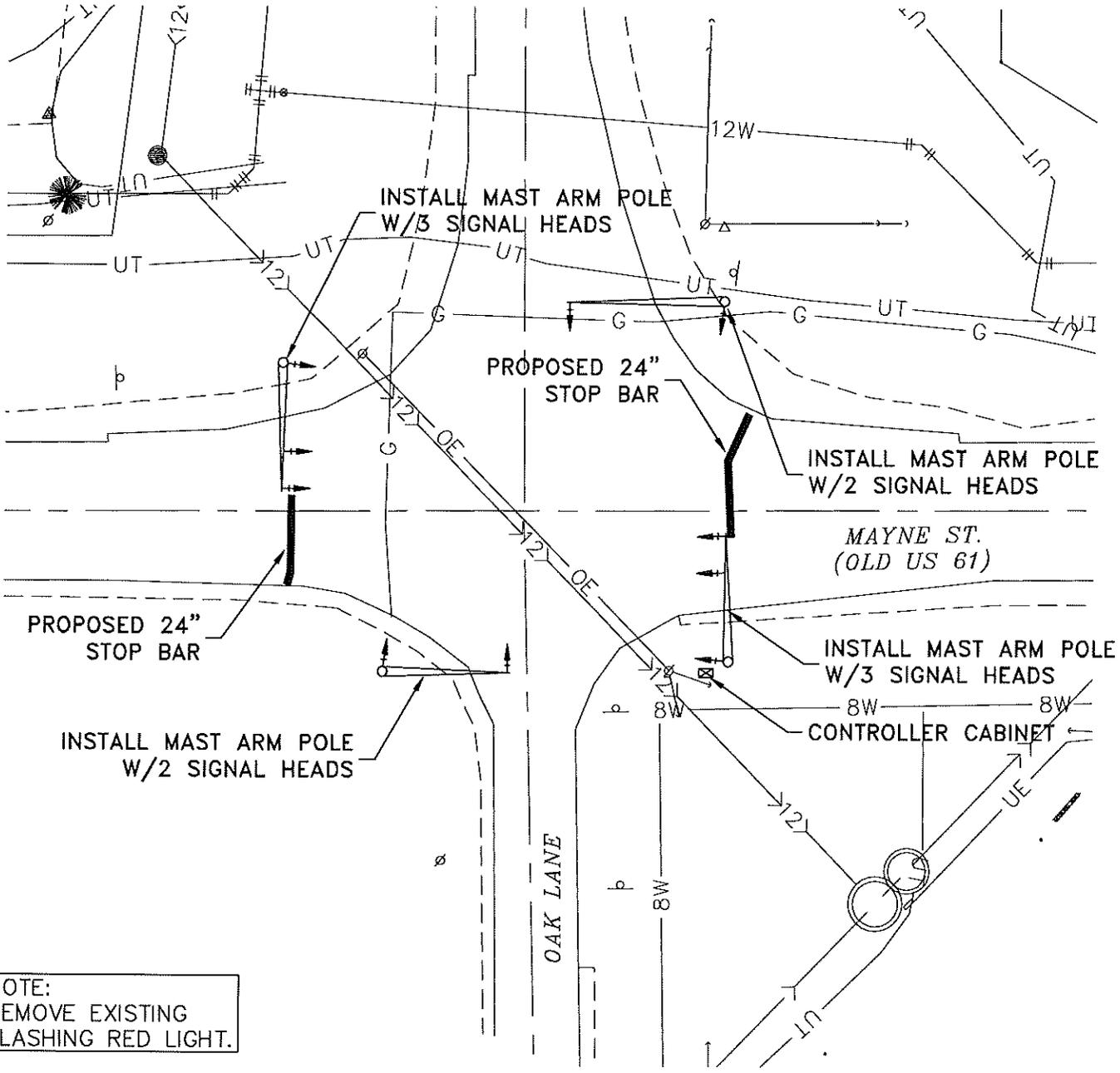
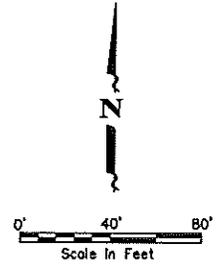
IOWA TRAFFIC SAFETY IMPROVEMENT PROGRAM GRANT BLUE GRASS, IOWA

FILE NAME T:\ABG113.003\DWG\Traffic Control 08-13-13.dwg JOB NUMBER: 01-01-13-003

SHEET NO.	2
OF	3
179	

TRAFFIC SIGNAL LEGEND:

- MAST ARM POLE, TYPE C
- ⊕ PROPOSED SIGNAL HEAD WITH BACKPLATE
- ⊖ EXISTING SIGNAL HEAD WITH BACKPLATE
- ⊠ CONTROLLER CABINET TYPE "P"
- ⊞ COUNTDOWN PEDESTRIAN SIGNAL
- ⊗ PEDESTAL POLE



NOTE:
REMOVE EXISTING
FLASHING RED LIGHT.

No.	Revision	Date

PLOTTING SCALE:	1" = 40'
DRAWN BY:	CAW
CHECKED BY:	MWJ
DATE:	AUGUST, 2013

McClure
Engineering Associates, Inc.
4700 Kennedy Drive
(304) 792-8300
East Moline, Illinois 61244
Fax (304) 792-8074
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MAYNE STREET & OAK LANE
PROPOSED SIGNALIZED INTERSECTION

IOWA TRAFFIC SAFETY IMPROVEMENT PROGRAM GRANT BLUE GRASS, IOWA

FILE NAME: T:\ASG113.003\DWG\Traffic Control 08-13-13.dwg JOB NUMBER: 01-01-013-003

SHEET NO.	3
OF	3

Application for TRAFFIC SAFETY FUNDS

GENERAL INFORMATION

Location / Title of Project Speed controlApplicant City of BellevueContact Person Chuck Kueter Title Street SuperintendentComplete Mailing Address 106 North 3rd St. Bellevue, Iowa. 52031Phone (563) 872-4860 E-Mail bellevuepw@ivuenet.com
(Area Code)

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

Co-Applicant(s) _____

Contact Person _____ Title _____

Complete Mailing Address _____

Phone _____ E-Mail _____
(Area Code)

PLEASE COMPLETE THE FOLLOWING PROJECT INFORMATION:

Application Type

Site Specific
Traffic Control Device
Safety Study

Funding Amount

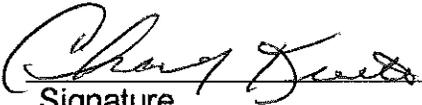
Total Project Cost \$ 6,250Safety Funds Requested \$ 6,250

APPLICATION CERTIFICATION FOR LOCAL GOVERNMENT

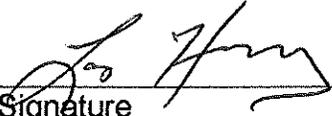
To the best of my knowledge and belief, all information included in this application is true and accurate, including the commitment of all physical and financial resources. This application has been duly authorized by the participating local government(s). I understand the attached resolution(s) binds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

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

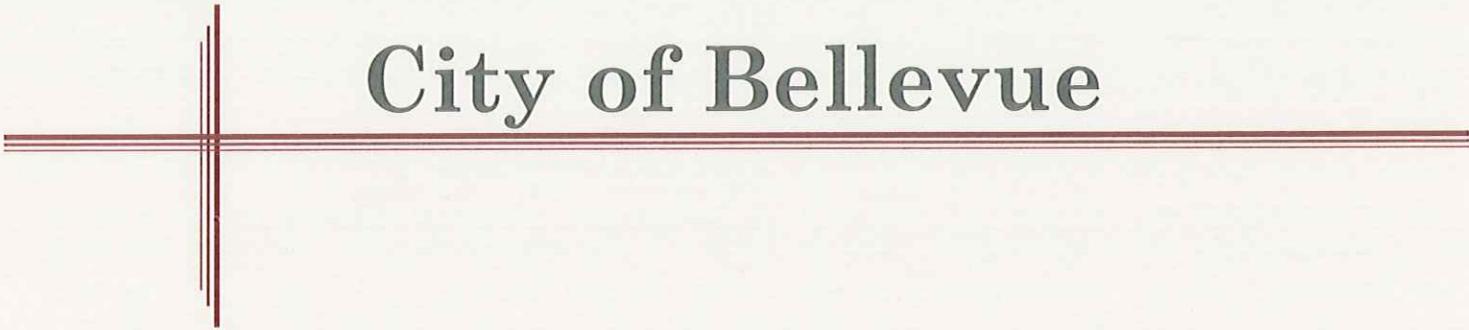
Representing the City of Bellevue, Iowa

Signed:  8-7-13
Signature Date Signed

Charles J Kueter
Typed Name

Attest:  8-7-13
Signature Date Signed

Loras Herrig
Typed Name



City of Bellevue

The City of Bellevue, Iowa would like to apply for the Traffic Safety Improvement Program for the purchase of a Radar Feedback Trailer. The City rents a similar type of trailer from a small town but for only a few weeks per year. It would be our intent to use the trailer throughout the City on a continuous basis.

We have observed a reduction in speed and an awareness of schools, churches and daycare facilities when the radar trailer was in use. The City of Bellevue, as well as many cities, sees a huge influx of traffic during any holiday as well as vacationing vehicles driving Highway 52 or the Great River Road. My intent is to use this device to alert vehicles that the speed in which they are traveling should be safe and legal.