Traffic Safety Improvement Fund

Applications for Traffic Control Devices

July 1997

1998 Applications for Traffic Control Devices

Agency	Description	Date of Application	Cost of Improvement	Amount of Request	Total Cummulative Requested
Bettendorf	Traffic signal interconnect system on 18th St from Spruce Hills to Tanglefoot	7/22/96	61,952	24,632	24,632
Bettendorf	Traffic signal interconnect system on Spruce Hills Dr from I-74 to 18th	7/22/96	53,890	29,067	53,699
Bettendorf	Install traffic signals at 18th St & 53rd Ave	7/22/96	77,974	48,638	102,336
Pella	Install traffic signals at old 163 (Oskaloosa) & E 9th St	7/24/96	60,000	35,000	137,336
Creston	Install traffic signals at IA 25 (Town Line Rd) & IA 186 (N Lincoln St)	9/11/96	83,343	66,674 S	204,010
Waterloo	Install traffic signals at W 11th St & Williston Ave	11/26/96	46,265	46,265	250,275
Waterloo	Install traffic signals at Mitchell Ave & Kimball Ave	11/26/96	47,885	47,885	298,161
Waterloo	Install traffic signals at Ridgeway Ave & Hillcrest Ave and W 11th St & Commercial Ave	11/26/96	88,793	88,793	386,954
Waterloo	Install traffic signals at US 20 ramp terminals & IA 21 (Hawkeye Rd)	12/10/96	185,000	160,000 S	546,954
IA DOT	Statewide sign inventory / replacement	12/17/96	$400,000	$400,000 S	946,954
Marion	Install traffic signals 10th St & 10th Ave/ Central Ave	1/15/97	70,000	40,000	986,954
Boone	Install traffic signals at Story St & Park, 8th & Benton, Mamie Eisenhower & Benton, and Mamie Eisenhower & Cedar	2/24/97	360,000	150,000	1,136,954
Avoca	Install traffic signals at US 59 (Chestnut St) & Taylor St	3/24/97	75,000	75,000 S	1,211,954
Keystone	New traffic signs citywide	5/5/97	563	563	1,212,517
Page Co.	Sign replacement on secondary road system countywide	5/15/97	28,481	28,481	1,240,998

Iowa Department of Transportation
Request for Traffic Safety Funds

GENERAL INFORMATION

Applicant: City or County of Bettendorf

Contact Person: Raymond L. Holland **Title:** City Engineer

Complete Mailing Address: 4403 Devil's Glen Road
(Street Address and/or Box Number)

Bettendorf (City) IA (State) 52722 (Zip) **Daytime Phone:** (319)344-4055 (Area Code)

If more than one highway authority is involved in this project, please indicate the contact person, mailing address, and telephone number of the second highway authority.

Applicant: City or County of _____

Contact Person: _____ **Title:** _____

Complete Mailing Address: _____
(Street Address and/or Box Number)

_____ (City) _____ (State) _____ (Zip) **Daytime Phone:** _____ (Area Code)

PLEASE COMPLETE THE FOLLOWING PROJECT INFORMATION:

Nature of Application:

_____ Site Specific
__X__ Traffic Control Device
_____ Safety Study

Funding: Total Cost of the Proposed Improvement $ 61,952.00

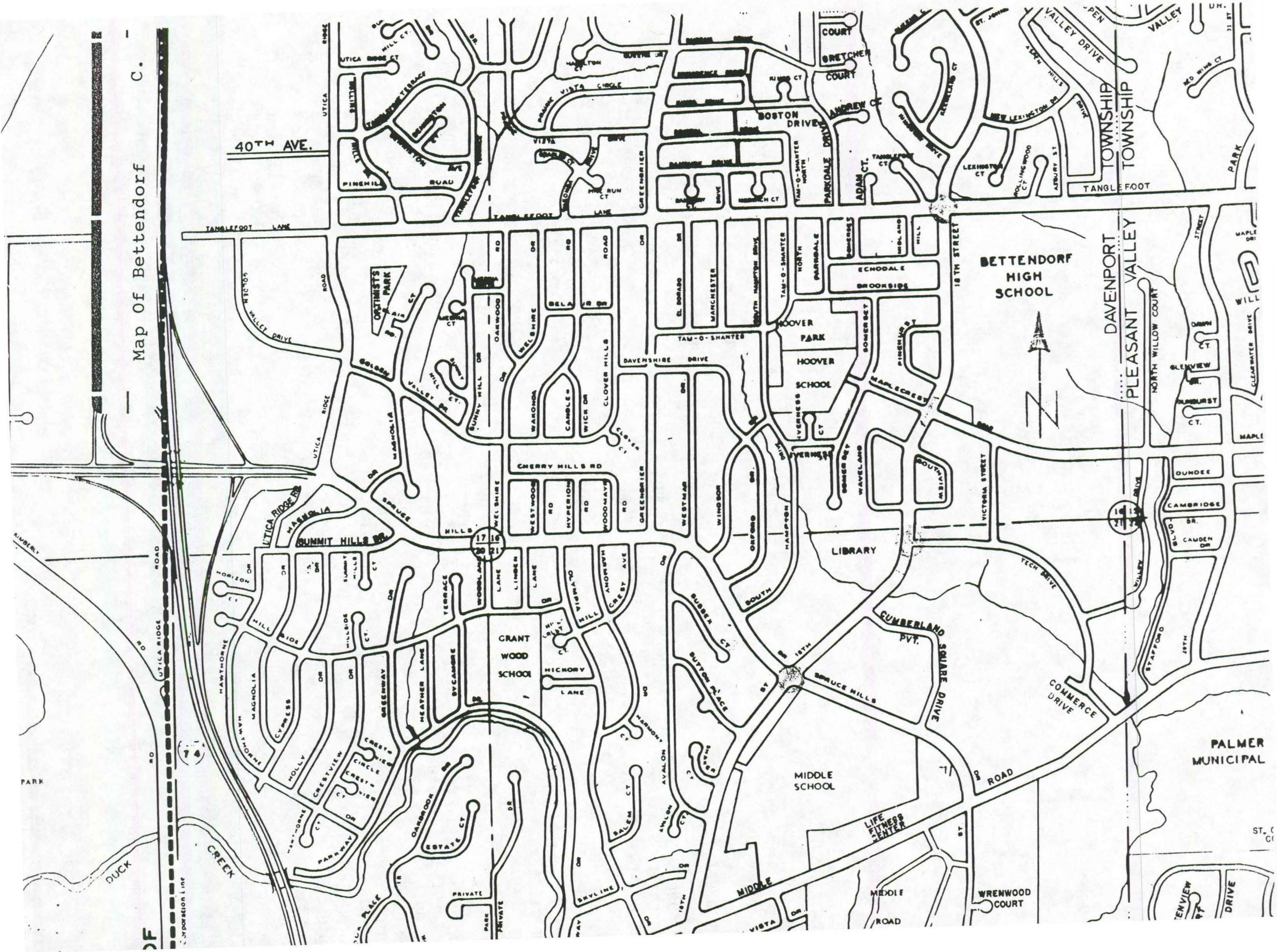
Safety Funds Requested for the Project $ 24,632.00

Narrative - 18th Street Traffic Signal Interconnect System
December 19, 1995

To fulfill the requirement that traffic signals need to be coordinated if they are closer than one half mile apart, 18th Street is in need of an interconnect system. This system will connect the traffic signals at Tanglefoot Lane, Maplecrest Road, the Bettendorf Public Library, and Spruce Hills Drive.

The separation between Tanglefoot Lane and Maplecrest Road is 1800 feet, 1100 feet between Maplecrest Road and the library drive, and 1500 feet between the library drive and Spruce Hills Drive. The signals will be interconnected using fiber optic cable.

It is proposed that the funding of this project will be by the Traffic Safety Improvement Program, the City of Bettendorf will be responsible for project installation.



Map Of Bettendorf C.
40TH AVE.
TANGLEFOOT LANE
TANGLEFOOT
BOSTON DRIVE
GRETCHEN COURT
ANDREW CT.
PARKDALE DRIVE
ADAN CT.
TANGLEFOOT CT
NEW LEXINGTON DR
LEXINGTON CT
VALLEY DRIVE
TOWNSHIP
DAVENPORT
PLEASANT VALLEY
BETTENDORF HIGH SCHOOL
18TH STREET
ECHODALE
BROOKSIDE
TAM-O-SHANTER
HOOVER PARK
HOOVER SCHOOL
DAVENSHIRE DRIVE
MAPLECREST
NORTH WILLOW COURT
GLENVIEW DR.
SUNBURST CT.
DUNDEE
CAMBRIDGE
CAMDEN DR
OPTIMISTS PARK
VALLEY DRIVE
GOLDEN VALLEY DR.
UTICA RIDGE
MAGNOLIA
SPRUCE HILLS
SUMMIT HILLS DR.
UTICA RIDGE RD.
CHERRY HILLS RD
CLOVER HILLS
WELSHIRE
WESTWOOD
HYPERION
WOODMAYS
GREENBRIER
WESTMAR
WINDSOR
OXFORD
HAMPTON
VICTORIA STREET
INVERNESS
LIBRARY
TECH DRIVE
CUMBERLAND SQUARE DRIVE
CUMBERLAND PVT.
COMMERCE DRIVE
SPRUCE HILLS
SUTTON PLACE
SUSSEX CT
GRANT WOOD SCHOOL
HICKORY LANE
HAWTHORNE
CYPRESS
HOLLY
CRESTVIEW
GREENWAY
HEATHER LANE
SYCAMORE
MIDDLE SCHOOL
LIFE FITNESS CENTER
MIDDLE ROAD
WRENWOOD COURT
PALMER MUNICIPAL
STAFFORD
ESTATE CT
OAKBROOK
SKYLINE
AVALON
SALEM CT
DUCK CREEK
PARK
PRIVATE
VISTA
HORIZON CT
HILLSIDE
74

Cost Estimate - 10th Street Traffic Signal Interconnect System

Item - Materials	Unit	Amount	Quantity	Cost
1. Hand Holes-Precast Frames & Lids	EA	450.00	10	4500.0
2. 2" Conduit	LF	0.80	4962	3970.0
3. Wiring Harness	EA	65.00	2	130.0
4. Fiber Optic Modem	EA	500.00	2	1000.0
5. Splice Kits	EA	30.00	16	480.0
6. Connectors	EA	40.00	8	320.0
7. Seed, Fert., Mulch	LUMP SUM	500.00	1	500.0
8. Couplings	EA	1.25	15	19.0
9. Crushed Rock	TON	20.00	1	20.0
10.Fiber Optics Cable	LF	1.00	4420	4420.0
11.Sidewalks	SF	3.25	144	468.0
12.Loop Detector Wire	LF	0.75	2040	1530.0
13.2 Cond. Loop Cable	LF	1.25	4500	5625.0
14.Joint Sealer	GALLON	19.00	30	570.0
15.Detectors	EA	135.00	8	1080.0
Sub Total - Materials				$24.632.0
Contract Installation				
1. Concrete Remaval	SF	1.00	144	144.0
2. Trenching for Conduit	LF	0.68	3792	2580.0
3. 2" Conduit, Bored (Jacked)	LF	20.00	825	16500.0
4. Sawcuts for Removal	LF	5.00	230	1150.0
5. Sawcuts for Loops	LF	4.30	220	946.0
Sub-Total - Installation				$21,320.0
City Labor (800 hours)				$16,000.0
TOTAL				$61,952.0

Iowa Department of Transportation
Request for Traffic Safety Funds

GENERAL INFORMATION

Applicant: City or County of BETTENDORF

Contact Person: RAYMOND L. HOLLAND Title: CITY ENGINEER

Complete Mailing Address: 4403 DEVILS GLEN ROAD
(Street Address and/or Box Number)

BETTENDORF (City) IOWA (State) 52722 (Zip) Daytime Phone: (319) 344-4055 (Area Code)

If more than one highway authority is involved in this project, please indicate the contact person, mailing address, and telephone number of the second highway authority.

Applicant: City or County of _____

Contact Person: _____ Title: _____

Complete Mailing Address: _____
(Street Address and/or Box Number)

_____ (City) _____ (State) _____ (Zip) Daytime Phone: _____ (Area Code)

PLEASE COMPLETE THE FOLLOWING PROJECT INFORMATION:

Nature of Application:
_____ Site Specific
X Traffic Control Device
_____ Safety Study

Funding: Total Cost of the Proposed Improvement $ 53,889.50

Safety Funds Requested for the Project $ 29,066.50

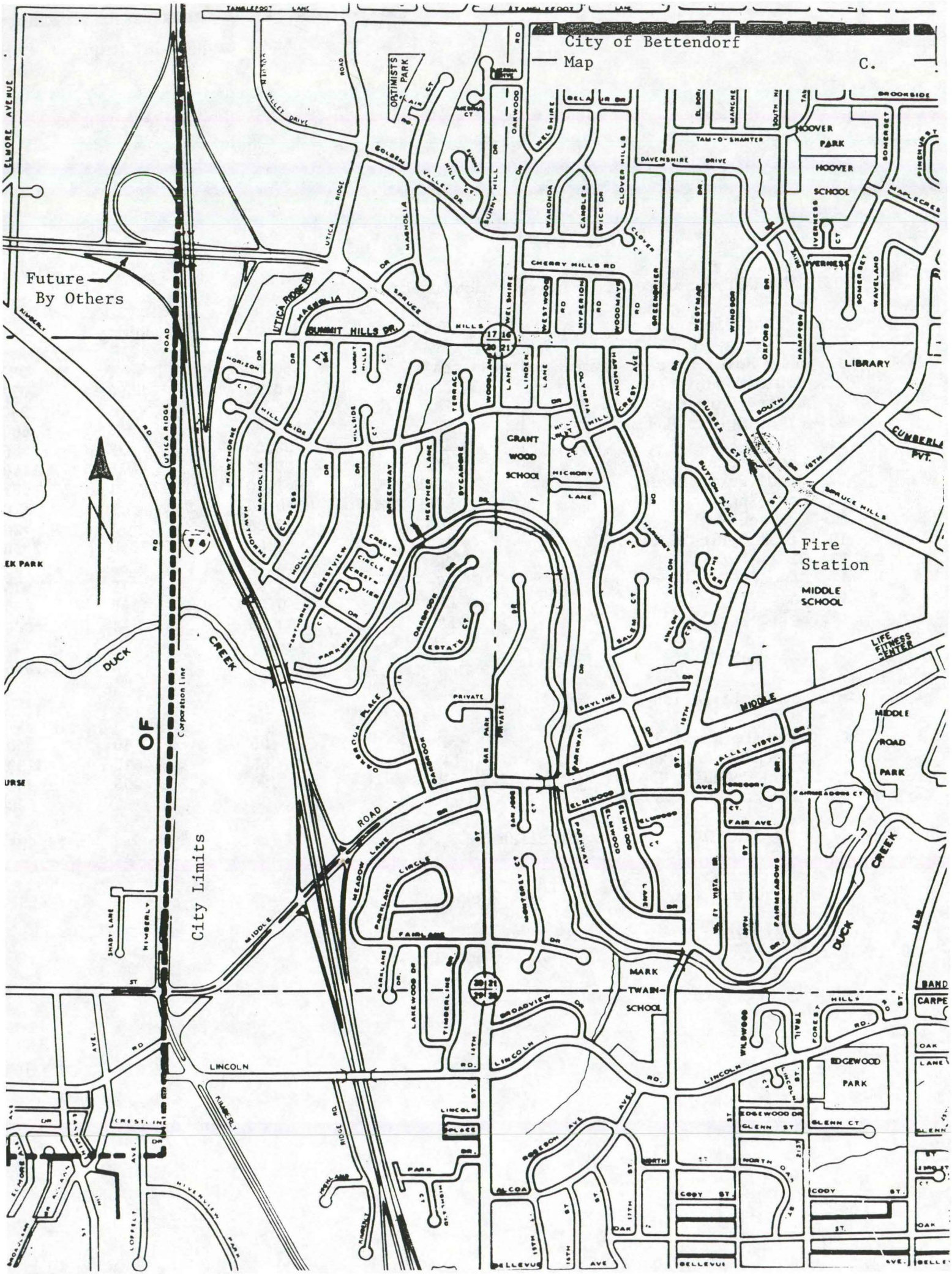
— B. Narrative

NARRATIVE - Spruce Hills Drive Interconnect System
14-May-97

To satisfy the law going into effect in 1997, that requires traffic signals to be coordinated if they are closer than one half mile apart, Spruce Hills Drive is in need of an interconnect system. Spruce Hills Drive now has a total of four gaps that meet the requirements to install an interconnect system. A new system will greatly improve the flow of traffic. The City is also planning to extend conduit for future interconnecting purposes to the City of Davenport.

There is currently an interconnect system between Interstate 74 and Utica Ridge Road. This project will upgrade that system and utilize fiber optic interconnect to replace the hard wire system.

It is proposed that the funding of this project will be by the Traffic Safety Program, the City of Bettendorf will be responsible for project


City of Bettendorf
Map
C.
Future
By Others
Fire
Station
City Limits
Corporation Line
OF
DUCK
CREEK
GRANT
WOOD
SCHOOL
MIDDLE
SCHOOL
MARK
TWAIN
SCHOOL
HOOVER
PARK
HOOVER
SCHOOL
LIBRARY
MIDDLE
ROAD
PARK
EDGEWOOD
PARK
LIFE
FITNESS
CENTER
OPTIMISTS
PARK
SUMMIT HILLS DR.
MIDDLE ROAD
LINCOLN
ROAD
UTICA RIDGE
ELMORE AVENUE

COST ESTIMATE - Spruce Hills Drive Interconnect

Item - Materials	Unit	Amount	Quantity	C
1. Hand Holes-Precast Frames and Lids	EA	$ 450.00	9	4050
2. 1.5in Conduit	LF	0.75	5500	4027
3. Wiring Harness	EA	65.00	6	390
4. Fiber Optics Modem	EA	400.00	6	2400
5. Splice Kits	EA	30.00	36	1080
6. Connectors	EA	40.00	36	1440
7. Seed, Fert., Mulch	LUMP SUM	671.00	1	671
8. Couplings	LUMP SUM	110.00	1	110
9. Crushed Rock	TON	20.00	1	20
10. Fiber Optics Cable	LF	1.00	7890	7890
11. Sidewalks	SF	3.25	60	195
12. Sawcuts For Loop Detectors	LF	4.30	78	335
13. Loop Wire	LF	0.40	1145	458
14. Splice Tool	EA	6000.00	1	6000
SUB-TOTAL Materials				$ 29,066

Contract Installation

1. Concrete Removal	SF	1.00	60	60
2. Trenching for Conduit	LF	0.68	4615	3139
3. 1.5in Conduit, Bored	LF	17.50	855	14962
4. Sawcuts for Removal	LF	5.00	24	120
SUB-TOTAL Installation				$ 18,281
City Labor 4 (four) Weeks				$ 6552
TOTAL				$ 53,889

Iowa Department of Transportation
Request for Traffic Safety Funds

GENERAL INFORMATION

Applicant: City or County of BETTENDORF

Contact Person: RAYMOND L. HOLLAND **Title:** CITY ENGINEER

Complete Mailing Address: 4403 DEVILS GLEN ROAD
(Street Address and/or Box Number)

BETTENDORF (City) IOWA (State) 52722 (Zip) **Daytime Phone:** 319-344-4055 (Area Code)

If more than one highway authority is involved in this project, please indicate the contact person, mailing address, and telephone number of the second highway authority.

Applicant: City or County of _____

Contact Person: _____ **Title:** _____

Complete Mailing Address: _____
(Street Address and/or Box Number)

_____ (City) _____ (State) _____ (Zip) **Daytime Phone:** _____ (Area Code)

PLEASE COMPLETE THE FOLLOWING PROJECT INFORMATION:

Nature of Application:

_____ Site Specific
__X__ Traffic Control Device
_____ Safety Study

Funding: Total Cost of the Proposed Improvement $ 77,973.86

Safety Funds Requested for the Project $ 48,637.86

B. Narrative - 18th Street and 53rd Avenue Traffic Signal Light
February 13, 1996

53rd Avenue was reconstructed as a four lane divided major arterial street in 1992. Before that it was a rural gravel road that had been improved to a seal coat surface during the 1970's. 18th Street south of 53rd Avenue was paved as a new two lane facility in 1970 and widened to three lane in 1993. An additional lane was added in 1994. 18th Street north of 53rd Avenue was paved as a new four lane facility in 1980.

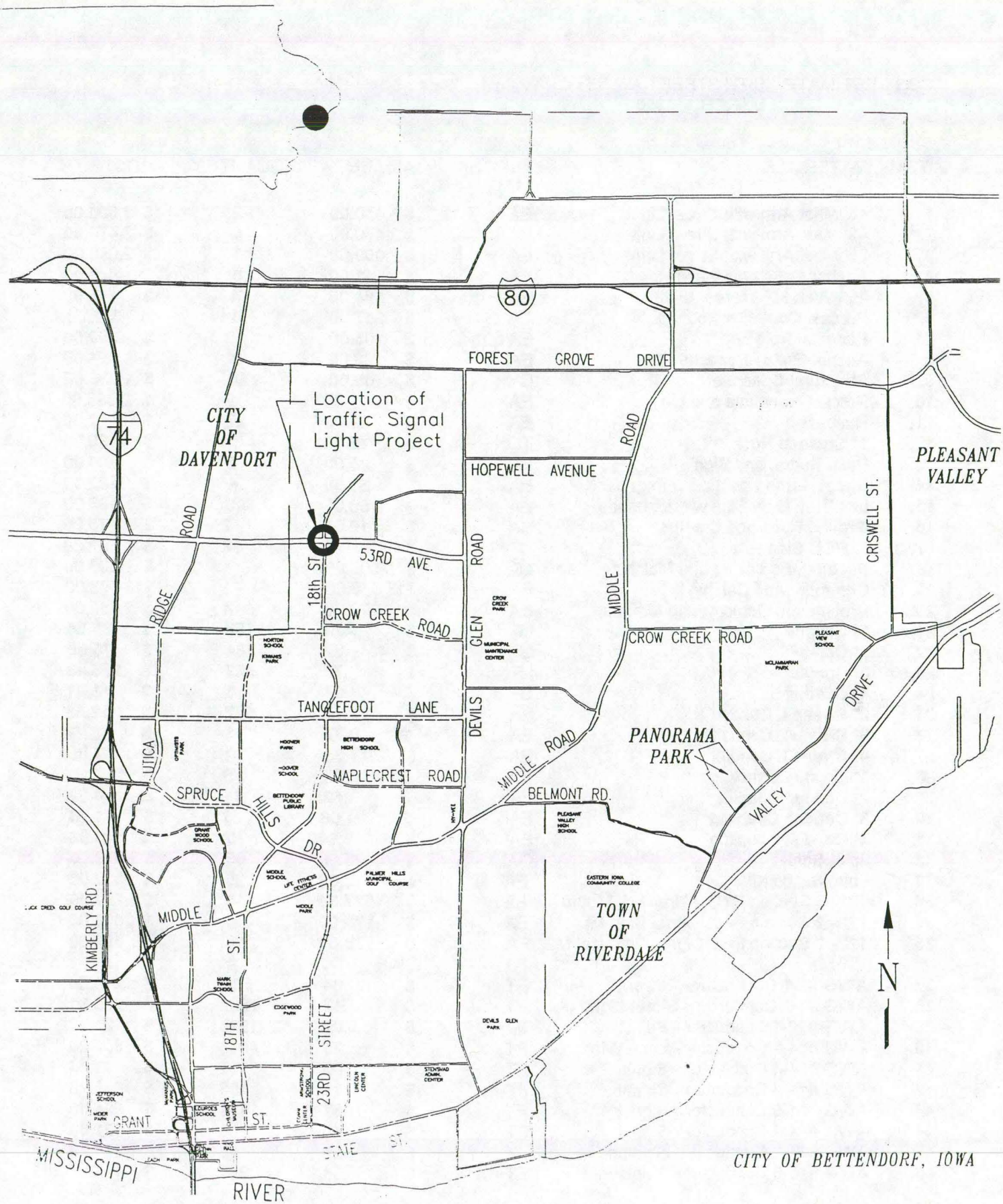
Recent traffic counts show that the one hour and four hour warrants for a traffic signal light are now met.

Average annual daily traffic on 53rd Avenue west of the intersection has increased from 2,990 in 1986 to 4,090 in 1990 to 6,370 in 1993 (after the paving was completed) to 8,400 in 1995.

Average annual daily traffic on 18th Street south of 53rd Avenue has increased from 3,540 in 1988 to 4,800 in 1991 to 7,200 in 1994.

The most recent traffic counts on 18th Street north of 53rd Avenue were 810 in 1991. The most recent count on 53rd Avenue east of 18th Street was 3,200 in 1995.

It is proposed that the funding for this project be through the Traffic Safety Improvement Program. The City of Bettendorf will be responsible for project installation.



LOCATION MAP

COST ESTIMATE - 18TH STREET AT 53rd Avenue Traffic Signal Light
MARCH 1, 1996

ITEM	MATERIALS	UNIT	AMOUNT	QUANTITY	COST
1.	48' Mast Arm with Street Light	EA	$ 3,150.00	2	$ 6,300.00
2.	42' Mast Arm with Street Light	EA	$ 2,470.00	1	$ 2,470.00
3.	38' Mast Arm with Street Light	EA	$ 2,050.00	1	$ 2,050.00
4.	Anchor Bolts - Mast Arm	EA	$ 41.00	16	$ 656.00
5.	250 Watt HPS Street Light	EA	$ 194.00	4	$ 776.00
6.	Precast Controller Footing	EA	$ 357.00	1	$ 357.00
7.	Pedestal Pole	EA	$ 195.00	2	$ 390.00
8.	Anchor Bolts - Pedestal	EA	$ 3.00	8	$ 24.00
9.	Structural Concrete	CY	$ 66.00	16	$ 1,056.00
10.	Precast Handhole and Lid	EA	$ 315.00	9	$ 2,835.00
11.	Hangers	EA	$ 1.00	27	$ 27.00
12.	1" Crushed Rock	TON	$ 15.00	2	$ 30.00
13.	Push Button and Sign	EA	$ 25.00	8	$ 200.00
14.	Street Name and Sign w/mtg. bands	EA	$ 33.00	4	$ 132.00
15.	Left Turn Only Sign w/mtg. bands	EA	$ 66.00	3	$ 198.00
16.	Ground Rods and Clamps	EA	$ 10.00	7	$ 70.00
17.	4" PCC Sidewalk	SF	$ .90	92	$ 82.80
18.	Seeding, Fertilizing and Mulching	LS	$ 500.00		$ 500.00
19.	Controller and Cabinet	EA	$13,578.00	1	$13,578.00
20.	Preemption Detector and Mounts	EA	$ 670.00	4	$ 2,680.00
21.	1" Conduit	LF	$ .23	158	$ 36.34
22.	2" Conduit	LF	$ .37	1284	$ 475.08
23.	3" Conduit	LF	$ .78	357	$ 278.46
24.	4" Conduit	LF	$ 1.07	13	$ 13.91
25.	2" Sweep L Conduit	EA	$ 1.79	7	$ 12.53
26.	3" Sweep L Conduit	EA	$ 6.77	1	$ 6.77
27.	4" Sweep L Conduit	EA	$ 7.35	1	$ 7.35
28.	1" Conduit Coupling	EA	$ .35	6	$ 2.10
29.	2" Conduit Coupling	EA	$ .42	11	$ 4.62
30.	3" Conduit Coupling	EA	$ 1.68	7	$ 11.76
31.	4" Conduit Coupling	EA	$ 1.84	2	$ 3.68
32.	Joint Sealer	GAL	$ 23.00	63	$ 1,449.00
33.	Loop Splice Kits	EA	$ 22.00	25	$ 550.00
34.	12" - 3 Section RYG Signal MA Mount	EA	$ 527.00	11	$ 5,797.00
35.	12" - 2 Section Ped. Signal Side Mt.	EA	$ 173.00	4	$ 692.00
36	12" - 2 Section Ped. Signal Pedestal Mt.	EA	$ 173.00	4	$ 692.00
37.	AWG #3-1 Conductor - Power	FT	$ .34	120	$ 40.80
38.	AWG #6-1 Conductor - Street Light	FT	$ .17	1502	$ 255.34
39.	AWG #10-1 Conductor - Pull Wire	FT	$ .07	1828	$ 127.96
40.	AWG #14-1 Conductor - Loop Wire	FT	$ .20	4036	$ 807.20
41.	AWG #14-1 Conductor - Signal	FT	$ .07	192	$ 13.44
42.	AWG #14-3 Conductor - Signal	FT	$ .21	168	$ 35.28
43.	AWG #14-5 Conductor - Signal	FT	$ .37	1418	$ 524.66
44.	AWG #14-7 Conductor - Signal	FT	$ .48	1295	$ 621.60
45.	AWG #14-2 Conductor - Shielded	FT	$ .20	7746	$ 1,549.20
46.	AWG #18-6 Conductor - Shielded	FT	$ .34	347	$ 117.98
	Electricians Tape, Wiring Nuts, Misc.	LS	$ 100.00		$ 100.00
	SUBTOTAL MATERIALS				$48,637.86

COST ESTIMATE - 18TH STREET AT 53rd Avenue Traffic Signal Light (page 2)
MARCH 1, 1996

ITEM	CONTRACT LABOR	UNIT	AMOUNT	QUANTITY	COST
1.	Saw Cut	LF	$ 5.00	1112	$ 5,560.00
2.	Sidewalk Removal	SF	$ 1.50	100	$ 150.00
3.	Trenching	LF	$ 5.50	1611	$ 8,860.50
4.	Jacking Conduit	LF	$20.00	201	$ 4,020.00
5.	Installation	LS			$ 9,959.50
	SUBTOTAL CONTRACT LABOR				$28,550.00

ITEM	CITY EXPENSE	UNIT	AMOUNT	QUANTITY	COST
1.	Electrician	HOUR	$26.00	30 HOURS	$ 780.00
2.	Vehicle	MILE	$ .30	200	$ 6.00
	SUBTOTAL CITY EXPENSE				$ 786.00
	TOTAL				$77,973.86

RECEIVED

JUL 24 1996

OFFICE OF PROGRAM MANAGEMENT

Iowa Department of Transportation
Request for Traffic Safety Funds

GENERAL INFORMATION

Applicant: City or ~~County~~ of Pella, Iowa

Contact Person: Ron Knoke, P.E. Title: Director of Public Works

Complete Mailing Address: 100 Truman Road
(Street Address and/or Box Number)

Pella (City) IA (State) 50219 (Zip) Daytime Phone: 515-628-1601 (Area Code)

If more than one highway authority is involved in this project, please indicate the contact person, mailing address, and telephone number of the second highway authority.

Applicant: City or County of _____

Contact Person: _____ Title: _____

Complete Mailing Address: _____
(Street Address and/or Box Number)

_____ (City) _____ (State) _____ (Zip) Daytime Phone: _____ (Area Code)

PLEASE COMPLETE THE FOLLOWING PROJECT INFORMATION:

Nature of Application:
_____ Site Specific
__X__ Traffic Control Device
_____ Safety Study

Funding:
Total Cost of the Proposed Improvement $ 60,000

Safety Funds Requested for the Project $ 35,000

NARRATIVE

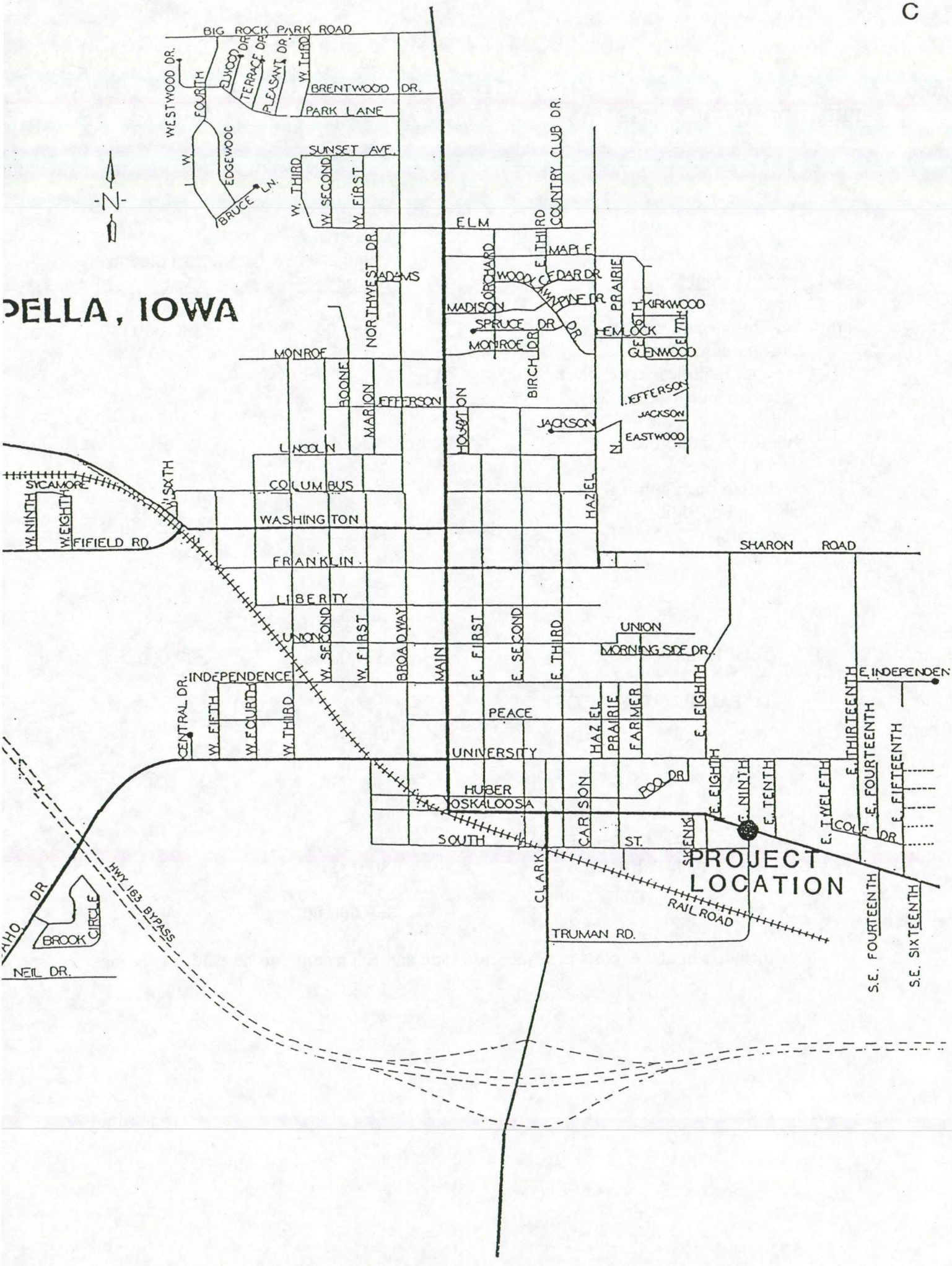
The traffic volumes at the intersection of Oskaloosa Street and East 9th Street have reached a level that will warrant the installation of traffic control signals. Oskaloosa Street is a three-lane roadway with a center two-way left turn lane. East 9th Street is a two-lane roadway on the south leg forming a T-intersection. Currently, East 9th Street is under stop sign control.

Manual turning movement counts were taken at the intersection between the hours of 6:00 AM and 6:00 PM. Copies of the traffic count data are included in Section G of the application. Also included in Section G is the Summary of Traffic Counts for Signal Justification. The summary shows that traffic signals at this intersection are currently warranted under Warrant 9 (Four Hour Volumes) and Warrant 11 (Peak Hour Volume) of the Manual On Uniform Traffic Control Devices (MUTCD). Included in Section G are the graphs that show Warrant 9 is justified for six hours and Warrant 11 for three hours. The full warrant is reduced by 70% for communities with a population of less than 10,000.

The signal controller will be fully actuated providing a westbound protected/permissive left turn phase, an east-west phase, and a northbound phase. Pedestrian pushbuttons will be provided to actuate the pedestrian signal indications.

The signal heads will be mounted on mast arm poles to get the signal indications over the roadway. This will better locate the indications in the motorist's field of view. The signal heads would use 12-inch indications for improved visibility. Pedestrian signal indications would be provided at the intersection. Where possible, the street light poles would be removed and a combination signal/lighting pole would be used to eliminate the need for additional poles at the intersections.

C


PELLA, IOWA
BIG ROCK PARK ROAD
WESTWOOD DR.
FOURTH
W. THIRD
BRENTWOOD DR.
PARK LANE
SUNSET AVE.
W. SECOND
W. FIRST
EDGEWOOD
BRUCE LN.
ELM
COUNTRY CLUB DR.
E. THIRD
MAPLE
ORCHARD
CEDAR DR.
PRAIRIE
KIRKWOOD
ADAMS
NORTHWEST DR.
MADISON
SPRUCE DR.
HEMLOCK
MONROE
BIRCH DR.
GLENWOOD
BOONE
MARION
JEFFERSON
HOUSTON
JACKSON
EASTWOOD
LINCOLN
SYCAMORE
W. SIXTH
COLUMBUS
HAZEL
W. NINTH
W. EIGHTH
FIFIELD RD.
WASHINGTON
SHARON ROAD
FRANKLIN
LIBERTY
UNION
W. SECOND
W. FIRST
BROADWAY
MAIN
E. FIRST
E. SECOND
E. THIRD
MORNINGSIDE DR.
E. INDEPENDENCE
INDEPENDENCE
CENTRAL DR.
W. FIFTH
W. FOURTH
W. THIRD
PEACE
HAZEL
PRAIRIE
FARMER
E. EIGHTH
UNIVERSITY
E. THIRTEENTH
E. FOURTEENTH
E. FIFTEENTH
HUBER
OSKALOOSA
POOL DR.
E. NINTH
E. TENTH
E. TWELFTH
COLF DR.
SOUTH
CARSON
ST.
SKENK
PROJECT LOCATION
CLARK
RAILROAD
TRUMAN RD.
S.E. FOURTEENTH
S.E. SIXTEENTH
HWY 163 BYPASS
BROOK CIRCLE
NEIL DR.

BREAKDOWN OF COSTS

Oskaloosa Street and East 9th Street	Material / Equipment Costs	Installation Cost
Furnish and install new signal including: actuated controller terminal facilities and cabinet mast arm signal poles vehicle signal heads pedestrian signal heads detector loops pedestrian push buttons cable and conduit power supply handholes	$35,000	$30,000
Total Estimated Costs	$35,000	$30,000
TOTAL PROJECT COST	**$65,000**	

Project Financing:

Traffic Safety Funds (Equipment)	35,000.00
City (100% of Installation)	30,000.00
TOTAL	**$65,000.00**

Not included in above costs are Administration and Engineering to be paid for by the City.

Iowa Department of Transportation
Request for Traffic Safety Funds

GENERAL INFORMATION

Applicant: City or County of Creston

Contact Person: Tom Myers Title: Public Works Director

Complete Mailing Address: 116 W. Adams, P.O. Box 449
(Street Address and/or Box Number)

Creston (City) Iowa (State) 50801 (Zip) Daytime Phone: (515)-782-5410 (Area Code)

If more than one highway authority is involved in this project, please indicate the contact person, mailing address, and telephone number of the second highway authority.

Applicant: City or County of _____

Contact Person: _____ Title: _____

Complete Mailing Address: _____
(Street Address and/or Box Number)

_____ (City) _____ (State) _____ (Zip) Daytime Phone: _____ (Area Code)

PLEASE COMPLETE THE FOLLOWING PROJECT INFORMATION:

Nature of Application:
_____ Site Specific
__X__ Traffic Control Device
_____ Safety Study

Funding: Total Cost of the Proposed Improvement $ 83,343.00

Safety Funds Requested for the Project $ 66,674.40

B. TRAFFIC CONTROL DEVICE

NARRATIVE

In order for the City of Creston to warrant a condition the MUTCD was followed.

On April 29, 1996 a traffic study was conducted by city staff members for movements at the intersection of Hwy 25 known locally as Townline Road and Hwy 186 referred to as North Lincoln Street. Through this week long study it was determined that there is continually 500 movements per hour. Please see attached sheets for count information Exhibit "A". This study did determine a Warrant 1 existed.

Other warrants were investigated that being accidents and pedestrian movements. Neither of this showed information that would warrant under MUTCD requirements.

The City of Creston requested I.D.O.T. to also conduct a study of this intersection. A letter dated June 6, 1996 by Mr. Tim Crouch also confirms the city study and in said letter indicated that a Warrant 1 for a traffic signal is met. Please see enclosed information Exhibit "D".

Public input is high for this project through local Rotary Club and general public. Several meetings were held with College, YMCA, City and I.D.O.T. Officials. The main concern with this intersection is large volume of traffic and pedestrian movements to the College and YMCA.

Cost for installation has forced the City to apply for T.S.F. and U.S.T.E.P. monies. The proposed concept of the roadway project is to work with I.D.O.T. through permits for installation of the new traffic lights. Since this is a state highway system signing and construction of loop pads will be required. This work will be closely reviewed by City staff and I.D.O.T. Southwest Iowa Transportation Center from Atlantic, Iowa.

C.

See enclosed MAPS.

D.

Pictures not required.

E.

TRAFFIC CONTROL DEVICE

ITEMIZED BREAKDOWN OF COST

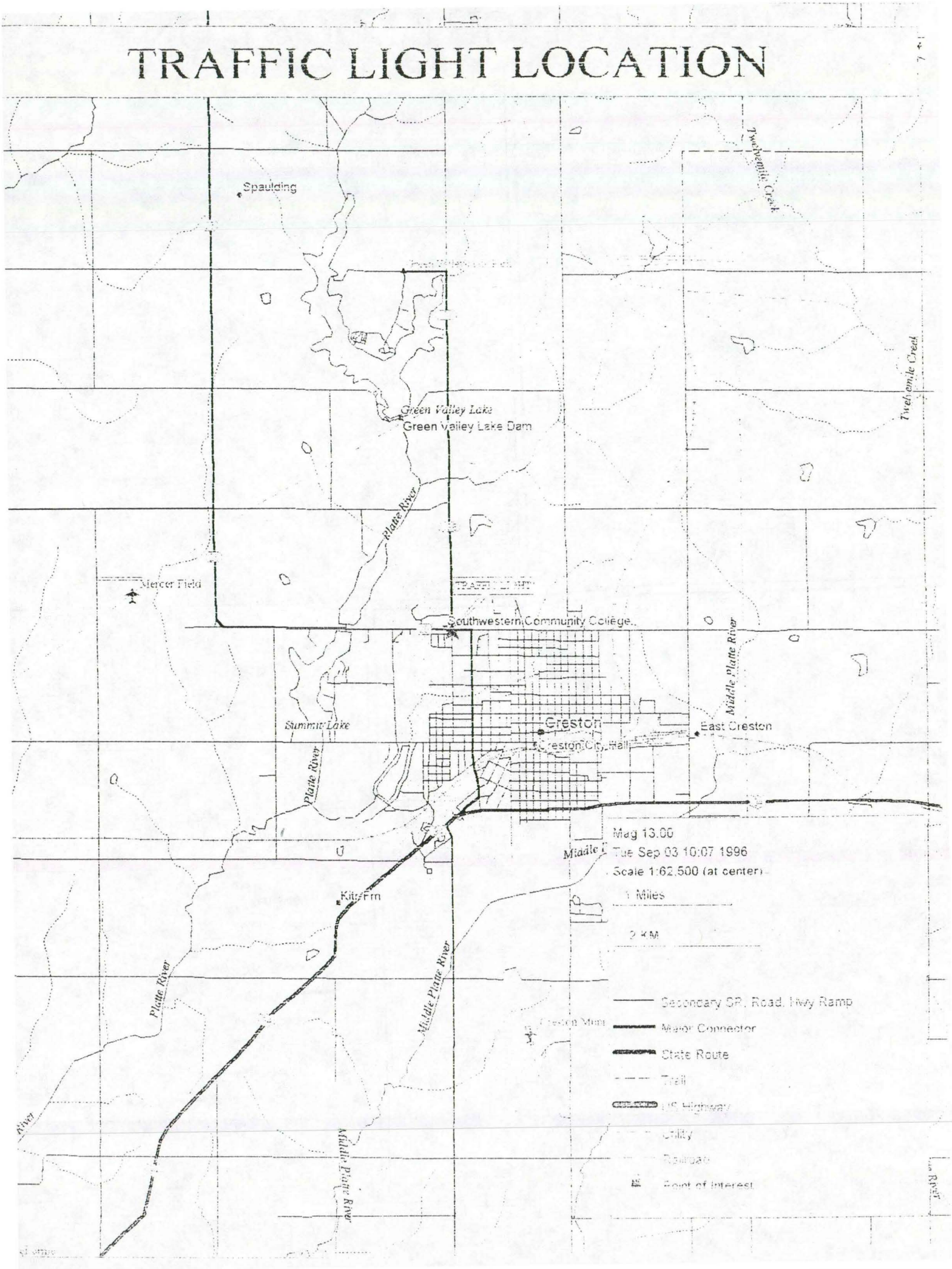
Cost estimates were obtained for material from Brown Traffic Products, Inc. from Davenport, Iowa. Please see exhibit "E". Installation cost will be $55,562.00 for loops and directional bore for wiring. The total combined cost is estimated to be $83,343.00.

G.

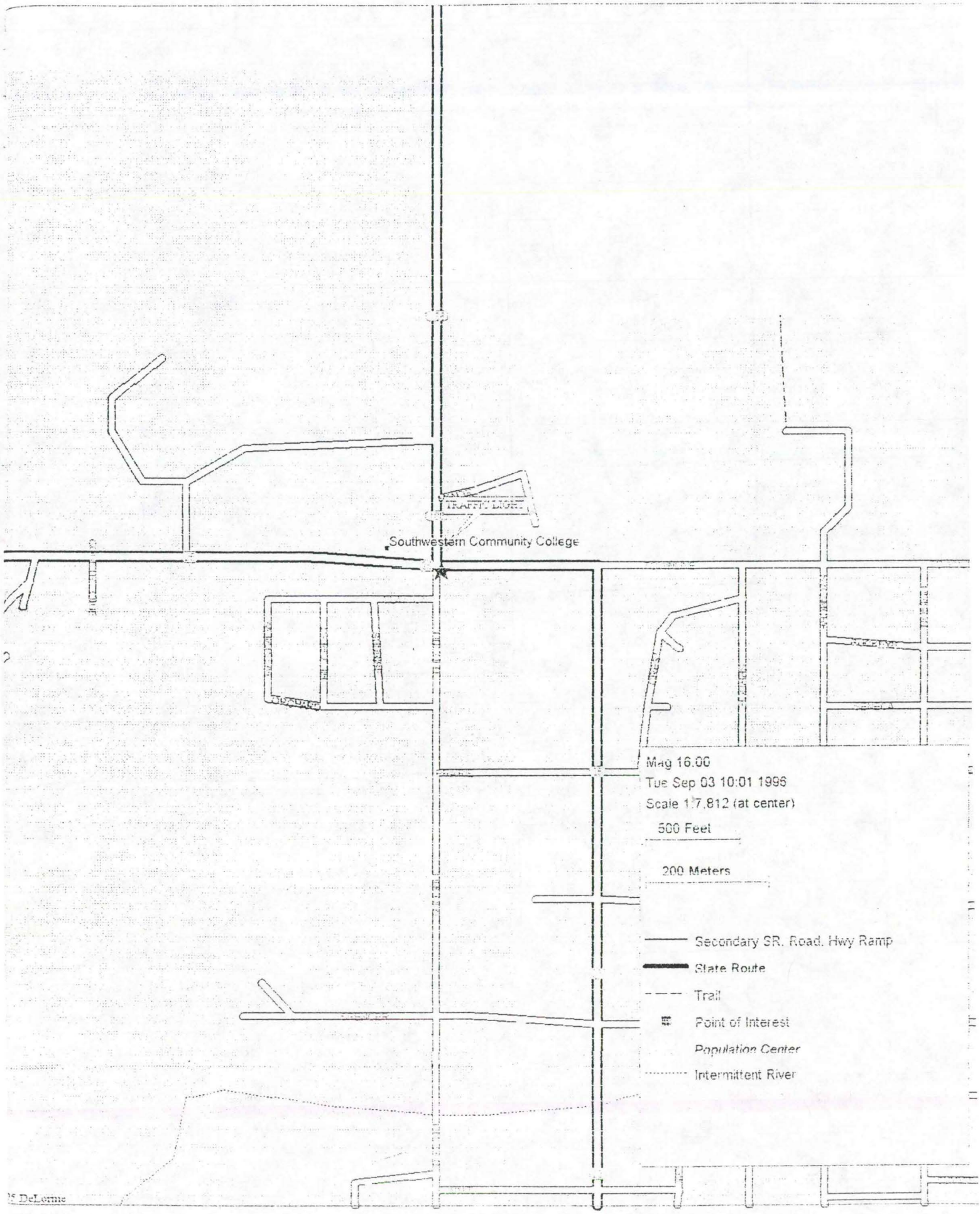
TRAFFIC AND TURNING MOVEMENTS

See Exhibits "A,B,C."

TRAFFIC LIGHT LOCATION



TRAFFIC LIGHT LOCATION



BROWN
Traffic Products, Inc.

736 Federal Street, Davenport, Iowa 52803
Phone: (319) 323-0009 Tollfree: (800) 888-7078 Fax: (319) 323-8256

Exhibit "E"

QUOTATION

To:CITY OF CRESTON

TOM

Quotation Number: 090596BV
Page:1
Date: 09/05/96

Thank you for your inquiry. We are pleased to provide the following quote:

Item #	Part Number & Description	Qty.	Each	Extended
1	8 PHASE CONTROLLER AND CABINET W/DETECTORS	1	$7,500.00	$7,500.00
2	MAST ARM POLES	4	$3,500.00	$14,000.00
3	PEDESTAL POSTS	2	$265.00	$530.00
4	3 SECTION SIGNAL HEADS W/HARDWARE AND BACKPLATES	15	$265.00	$3,975.00
5	PEDESTRIAN HEADS	8	$190.00	$1,520.00
6	PUSHBUTTONS	8	$32.00	$256.00
	MAST ARM PRICING COULD BE LESS PENDING ON TYPE SPECIFIED. NO LABOR OR INSTALLATION INCLUDED.			
			TOTAL	$27,781.00

It is anticipated that shipment of the material quoted herein can be made within **60 to 90 days** after receipt of both an acceptable purchase order and approved submittal data where required. **Payment terms are Net 30 days upon credit approval.** Brown Traffic Products, Inc. retains title to material until paid in full. A service charge of 1.5% per month (18% annual rate) will be assessed against all past due accounts. Prices and delivery quoted are firm for 30 days from date of bid. Brown Traffic Products, Inc. is a manufacturer and distributor of highway safety products. The above quotation does not include any installation of the products quoted. Technical advice is available at the job site and will be quoted separately upon request. Assistance is not included in the quotation.

Bill VanDeWoestyne
Sales Manager

Iowa Department of Transportation
Request for Traffic Safety Funds

GENERAL INFORMATION

Applicant: City or County of City of Waterloo

Contact Person: Tim Mrozek Title: Traffic Engineer

Complete Mailing Address: 715 Mulberry Street
(Street Address and/or Box Number)

Waterloo (City) Iowa (State) 50703 (Zip) Daytime Phone: (319)291-4440 (Area Code)

If more than one highway authority is involved in this project, please indicate the contact person, mailing address, and telephone number of the second highway authority.

Applicant: City or County of N/A

Contact Person: N/A Title: N/A

Complete Mailing Address: N/A
(Street Address and/or Box Number)

N/A (City) (State) (Zip) Daytime Phone: N/A (Area Code)

PLEASE COMPLETE THE FOLLOWING PROJECT INFORMATION:

Nature of Application:
_____ Site Specific
XXX Traffic Control Device
_____ Safety Study

Funding: Total Cost of the Proposed Improvement $ 46,264.90

Safety Funds Requested for the Project $ 46,264.90

CITY OF WATERLOO, IOWA

CITY HALL • 715 MULBERRY STREET 50703 • (319) 291-4301

TRAFFIC OPERATIONS & PARKING MAINTENANCE DEPT.

408 E. Sixth St. • Waterloo, IA 50703 • (319) 291-4440 Fax (319) 291-4094

MIKE MRZLAK • *Superintendent, Traffic Operations & Parking Maintenance*

November 26, 1996

Mr. Fred Walker, P.E.
Transportation Safety Engineer
Iowa Department of Transportation
800 Lincoln Way
Ames, Iowa 50010

RE: Traffic Safety Fund Applications
West 11th Street and Commercial Street
West 11th Street and Williston Street
Ridgeway Avenue and Hillcrest Road
Mitchell Avenue and Kimball Avenue
San Marnan Drive and Flammang Drive

Dear Mr. Walker,

Please consider this letter a resubmittal request for the above referenced intersections. These intersections with the exception of San Marnan Drive and Flammang Drive were prioritized as requested by the State of Iowa in our letter dated September 18, 1996. We ask that these intersections be resubmitted for traffic safety funding.

Provided this letter is not sufficient for a supplemental application to the previously submitted materials, please contact our office.

Sincerely,

Tim Mrozek
Traffic Engineer

TM/sg
cc: Mike Mrzlak, Traffic Operations Superintendent
Bob Stevenson, Administrative Director
Eric Thorson, City Engineer
Don Temeyer, Planning Director

F:\Mail\4C000001\TSFAPPLI

ATTACHMENT "B"

HISTORY OF INTERSECTIONS

WEST 11TH STREET AND WILLISTON AVENUE

West 11th Street and Williston Avenue are both 24' back to back curb and gutter. The surface is ACC Pavement over PCC Pavement.

The existing equipment at this intersection consists of the following:

Controller - Crouse-Hinds DM200 Installed in 1963
Two Phase

Poles, Arms, Heads - 4 poles with 2 3-section heads mounted on each pole
2 Pedestrian heads mounted on 3 poles for a total of 6.

JUSTIFICATION

In 1985, a Metropolitan Area Traffic Operation and Signal Study (MATOSS) was developed for the Waterloo/Cedar Falls Metropolitan Area. The main purpose of MATOSS was to develop design standards for the unified improvement of traffic control in conjunction with the Interstate Substitution Program. All signalized intersections were reviewed in detail and included but were not limited to warrant analysis.

The information and recommendations provided in the MATOSS study, reviewing conformance to The Manual of Uniform Traffic Control Devices (MUTCD) standards, as well as other analysis by the Transportation Staff, will provide justification for updating the signalized intersection in question using Traffic Safety Funds.

As stated previously, a warrant analysis was performed on the intersection as part of the MATOSS study. The results were as follows:

The West 11th and Williston Avenue intersection met Warrant No. 5 - Progressive movement.

Due to changes in the transportation infrastructure in the last six years, particularly the construction of Highway 218, and to verify the results of MATOSS, a second Warrant Analysis was performed on this intersection. This Warrant Analysis was completed on June 18, 1991. The results of this analysis are as follows:

> West 11th Street and Williston Avenue - met Warrant No. 7, Systems Warrant, and Warrant No. 9, Four hour volumes.

As suspected, the increased traffic created by the Highway 218 improvements had changed the warrants met under the MATOSS study to those reflected in the most recent analysis.

Regarding conformance to MUTCD standards, on Pages 4B-11 to 4B-13 of the Manual, it states that for through traffic, a minimum of two signal faces shall be provided and should be visible to traffic approaching the signals from a certain point depending on the posted speed limit to the stop bar. The signal pole locations at each intersection allows for only one signal face to be visible if stopped on the stop bar. This applies to all four approaches at each intersection.

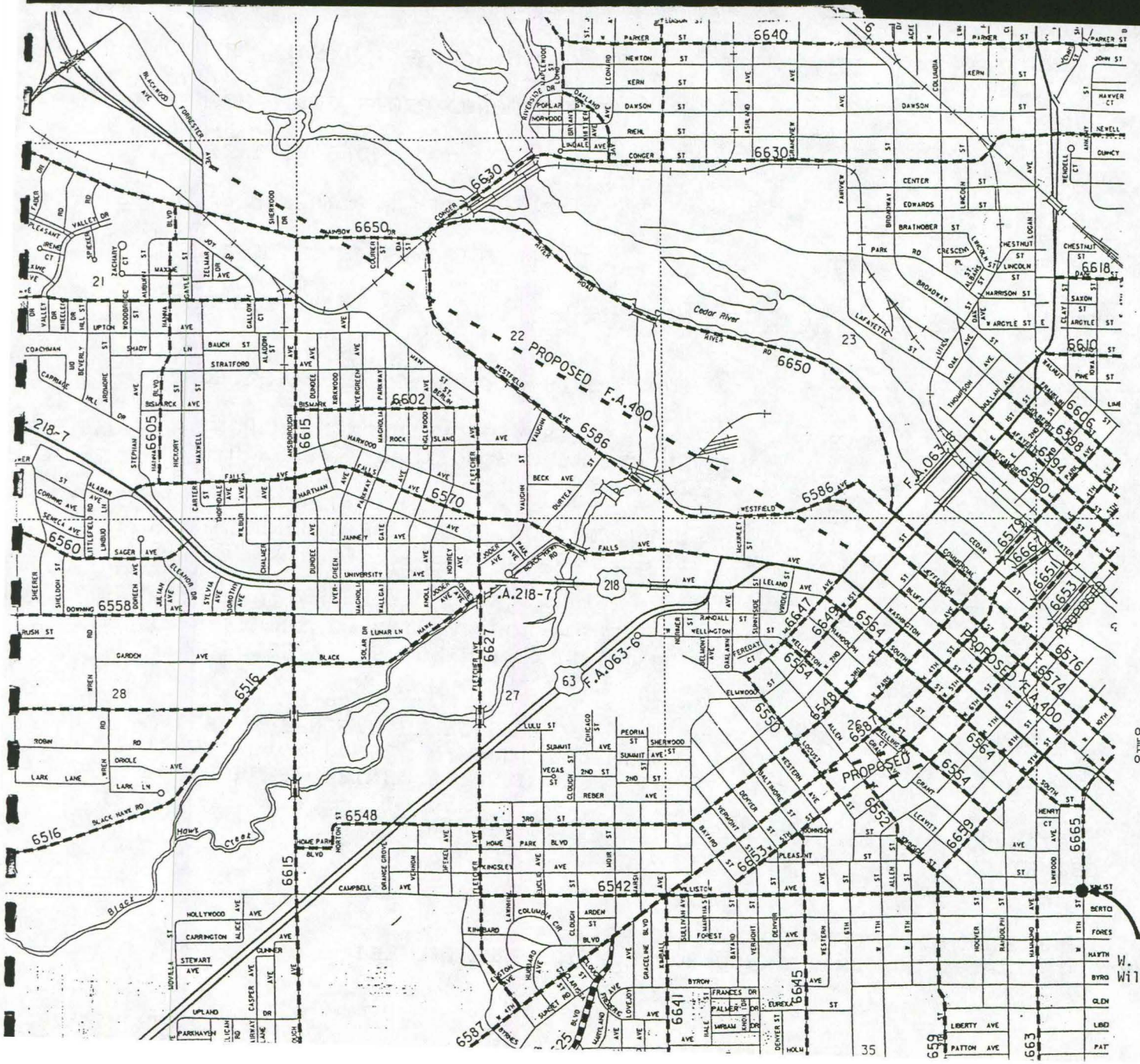
In addition, the equipment at both intersections including poles, signal heads, and controllers are outdated and should be considered obsolete.

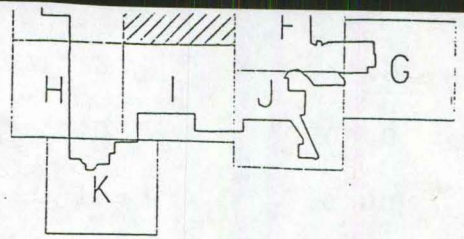
CONCLUSION

In the first phase of this request, we analyzed existing data from MATOSS and gathered additional data for the purpose of justifying some type of signal device at this intersection. The results showed that indeed a signalized traffic control device was warranted.

We then entered Phase II, "Analysis and Review of Existing Traffic Control Devices." Upon completion of Phase II, it as determined that due to the age of the control device and the nonconformance to MUTCD standards, it would be necessary to update the traffic signals at this intersection. This determination is supported by the conclusions and recommendations reached in the MATOSS study.

Therefore, we ask your consideration and approval of this application request for Traffic Safety Funds for Updating Traffic Control Devices at the described intersection.





PRODUCED WITH CADD II -06-90 CARTOGRAPHIC SECTION

LEGEND

- INTERSTATE ROUTE
- FREEWAY OR EXPRESSWAY ROUTE
- U.S. NUMBERED ROUTE
- STATE NUMBERED ROUTE
- COUNTY NUMBERED ROUTE
- LOCAL ROAD OR CITY STREET
- RAILROAD
- CORPORATION LINE
- SECTION LINE
- CUL DE SAC
- SECTION, TOWNSHIP & RANGE NUMBERS — 9 , T-8N , R-30W
- FEDERAL AID INTERSTATE SYSTEM
- FEDERAL AID PRIMARY AND STATE PRIMARY SYSTEM
- FEDERAL AID URBAN SYSTEM
- PROPOSED FEDERAL AID URBAN SYSTEM
- URBAN AREA BOUNDARY

SCALE IN MILES

0 0.1 0.2 0.3 0.4 0.5 0.75 1.0

0 0.1 0.2 0.3 0.4 0.5 1.0 1.5 2.

SCALE IN KILOMETERS

THE URBAN AREA OF

WATERLOO
IOWA

PREPARED BY

WENT OF TRANSPORTATION

PHONE (515) 239-1289

IN COOPERATION WITH

PARTMENT OF TRANSPORTATIOI

ATTACHMENT "E"

PRELIMINARY ESTIMATE OF QUANTITIES FOR TRAFFIC SIGNAL SYSTEMS
11th STREET AND WILLISTON AVENUE

ITEM	DESCRIPTION	UNIT	ESTIMATED QUANTITY	UNIT PRICE	AMOUNT
1	CONTROLLER/CABINET 8-PHASE OPERATION, 12-BAY BACK PANEL, W/ PED. MOVEMENTS WAL W/ GREEN, (BASE MOUNTED)	EA	1	9,600.00	9,600.00
2	MAST POLES W/ 15 LUMINAIRE EXT. TRANSFER BASES WITH ANCHOR BOLTS, WITH MAST ARMS	EA	4	3,000.00	12,000.00
3	SIGNAL FACE, 3-SECTION TRAFFIC HEADS WITH TUNNEL VISORS, 12 INCH, W/ BACK-GROUND SHIELDS	EA	8	418.00	3,344.00
4	SIGNAL FACE, 2-SECTION PEDESTRIAN HEADS, 12 INCH WITH MOUNTING BRACKETS	EA	8	328.00	2,624.00
5	HANDHOLES WITH COVERS AND RINGS AND CABLE HOOKS	EA	5	240.00	1,200.00
6	CONCRETE C-4	CY	16	100.00	1,600.00
7	DETECTOR LOOP, SAWCUT-ASPHALT	EA	15	540.00	8,100.00
8	PED. PUSHBUTTONS WITH SIGNS	EA	8	42.00	336.00
9	1 1/2 INCH PVC	LF	700	0.37	259.00
10	3 INCH RIGID STEEL CONDUIT(RSC)	LF	240	4.50	1,080.00
11	CABLE, SIGNAL 12c-#12 AWG	LF	270	1.12	302.40
	SUBTOTAL				**$40,445.40**

PRELIMINARY ESTIMATE OF QUANTITIES FOR TRAFFIC SIGNAL SYSTEMS (CONTINUED)

ITEM	DESCRIPTION	UNIT	QUANTITY	PRICE	AMOUNT
	SUBTOTAL FROM PAGE ONE				**$40,445.40**
12	CABLE, #14 AWG SHIELDED, TWISTED PAIR	LF	1620	0.28	453.60
13	CABLE, SIGNAL 4c-#14 AWG	LF	460	2.10	966.00
14	1c-#6 AWG BARE STRANDED GROUND	LF	270	0.20	54.00
15	2c-#8 AWG(BLACK AND WHITE)	LF	100	0.15	15.00
16	1 1/2 INCH RIGID STEEL CONDUIT(RSC)	LF	150	3.50	525.00
17	12 PAIR COMMUNICATIONS CABLE	LF	130	0.83	107.90
18	SIGNAL HEADS TO MAST ARM BRACKETS	EA	8	87.00	696.00
19	2 CHANNEL DETECTOR AMPS + HARNESSES	EA	1	300.00	300.00
20	914 DETECTOR AMPS. + HARNESSES	EA	4	300.00	1,200.00
21	STREET NAME SIGNS(B-1,B-2,B-3,B-4,B-5, B-6)	EA	4	60.00	240.00
22	"D" CONNECTOR CABLE	EA	1	100.00	100.00
23	CABLE, 5c-#14 AWG(PED BUTTONS)	LF	310	2.20	682.00
24	2c-#10 AWG (STREET LIGHT)	LF	400	1.20	480.00
				TOTAL	**$46,264.90**

(PEOQTS2)

Iowa Department of Transportation
Request for Traffic Safety Funds

GENERAL INFORMATION

Applicant: City or County of City of Waterloo

Contact Person: Tim Mrozek Title: Traffic Engineer

Complete Mailing Address: 715 Mulberry
(Street Address and/or Box Number)

Waterloo (City) Iowa (State) 50703 (Zip) Daytime Phone: (319)291-4314 (Area Code)

If more than one highway authority is involved in this project, please indicate the contact pers mailing address, and telephone number of the second highway authority.

Applicant: City or County of N/A

Contact Person: N/A Title: N/A

Complete Mailing Address: N/A
(Street Address and/or Box Number)

N/A (City) (State) (Zip) Daytime Phone: N/A (Area Code)

PLEASE COMPLETE THE FOLLOWING PROJECT INFORMATION:

Nature of Application:
_____ Site Specific
XXXXX Traffic Control Device
_____ Safety Study

Funding: Total Cost of the Proposed Improvement $ 47,885.30

Safety Funds Requested for the Project $ 47,885.30

ATTACHMENT "B"

Narrative

History of Intersection

Kimball Avenue is 31' back to back curb and gutter. The surface is PCC pavement in good condition. Kimball serves as a North-South Minor Arterial for the south central part of Waterloo.

Mitchell Avenue is 28' back to back curb and gutter. The surface is PCC Pavement in a deteriorated condition. Mitchell serves as a East-West Collector again for the south central part of Waterloo.

This intersection is utilized as a school crossing for St. Edwards School and is currently controlled by a four-way stop.

Justification

On September 10, 1991, a warrant analysis was performed. Of the eleven possible warrants, four were met. They are as follows:

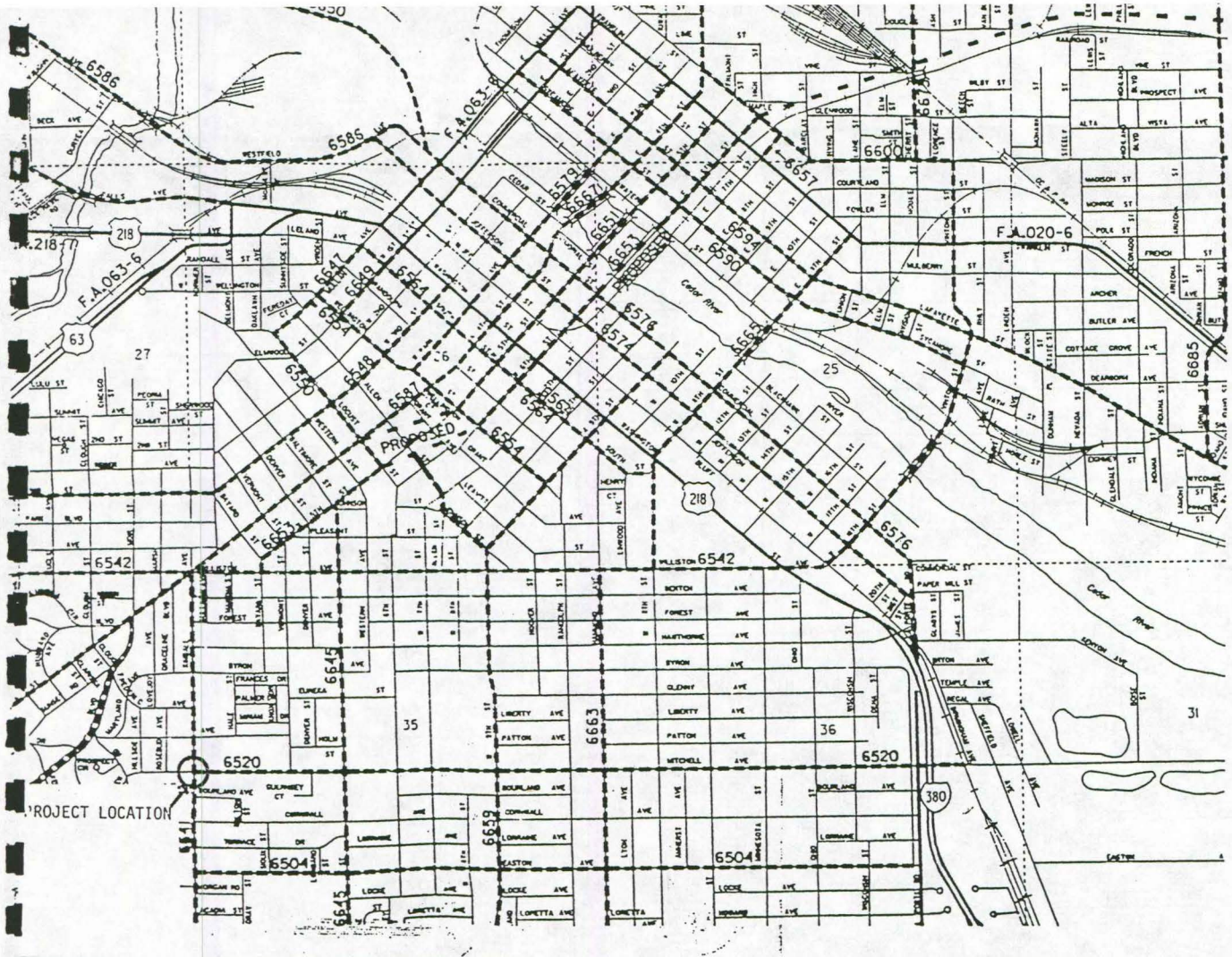
Warrant No. 1	-	Minimum Vehicular Volumes
Warrant No. 8	-	Combination of Warrants
Warrant No. 9	-	Four Hour Volumes
Warrant No. 11	-	Peak Hour Volumes

A gap study for the school crossing warrant was considered but due to the four-way stop would not be applicable. If this intersection had a two-way stop (stopping only Mitchell Avenue traffic), there is no doubt that this warrant would also be met.

Conclusion

Based on the warrant analysis, we have provided adequate data to justify installation of a traffic signal device at this intersection. By providing signalization, we reduce the delay caused by the four-way stop and provide improved efficiency to the motoring public without sacrificing safety.

Therefore, we ask your consideration and approval of this application request for Traffic Safety funds for the initial installation of a traffic control device.



PROCESSED BY CACD 12-5-88 CARTOGRAPHIC SECTION

LEGEND

- INTERSTATE ROUTE
- FREEWAY OR EXPRESSWAY ROUTE
- U.S. NUMBERED ROUTE
- STATE NUMBERED ROUTE
- COUNTY NUMBERED ROUTE
- LOCAL ROAD OR CITY STREET
- RAILROAD
- CORPORATION LINE
- SECTION LINE
- CUL DE SAC
- SECTION, TOWNSHIP & RANGE NUMBERS — 9, T 89N, R-15W
- FEDERAL AID INTERSTATE SYSTEM
- FEDERAL AID PRIMARY AND STATE PRIMARY SYSTEM
- FEDERAL AID URBAN SYSTEM ONLY
- PROPOSED FEDERAL AID URBAN SYSTEM
- URBAN AREA BOUNDARY

SCALE IN MILES

0 0.1 0.2 0.3 0.4 0.5 1.0

0 0.1 0.2 0.3 0.4 0.5 1.0 1.5 2.0

SCALE IN KILOMETERS

THE URBAN AREA OF

WATERLOO
IOWA

PREPARED BY

IOWA DEPARTMENT OF TRANSPORTATION

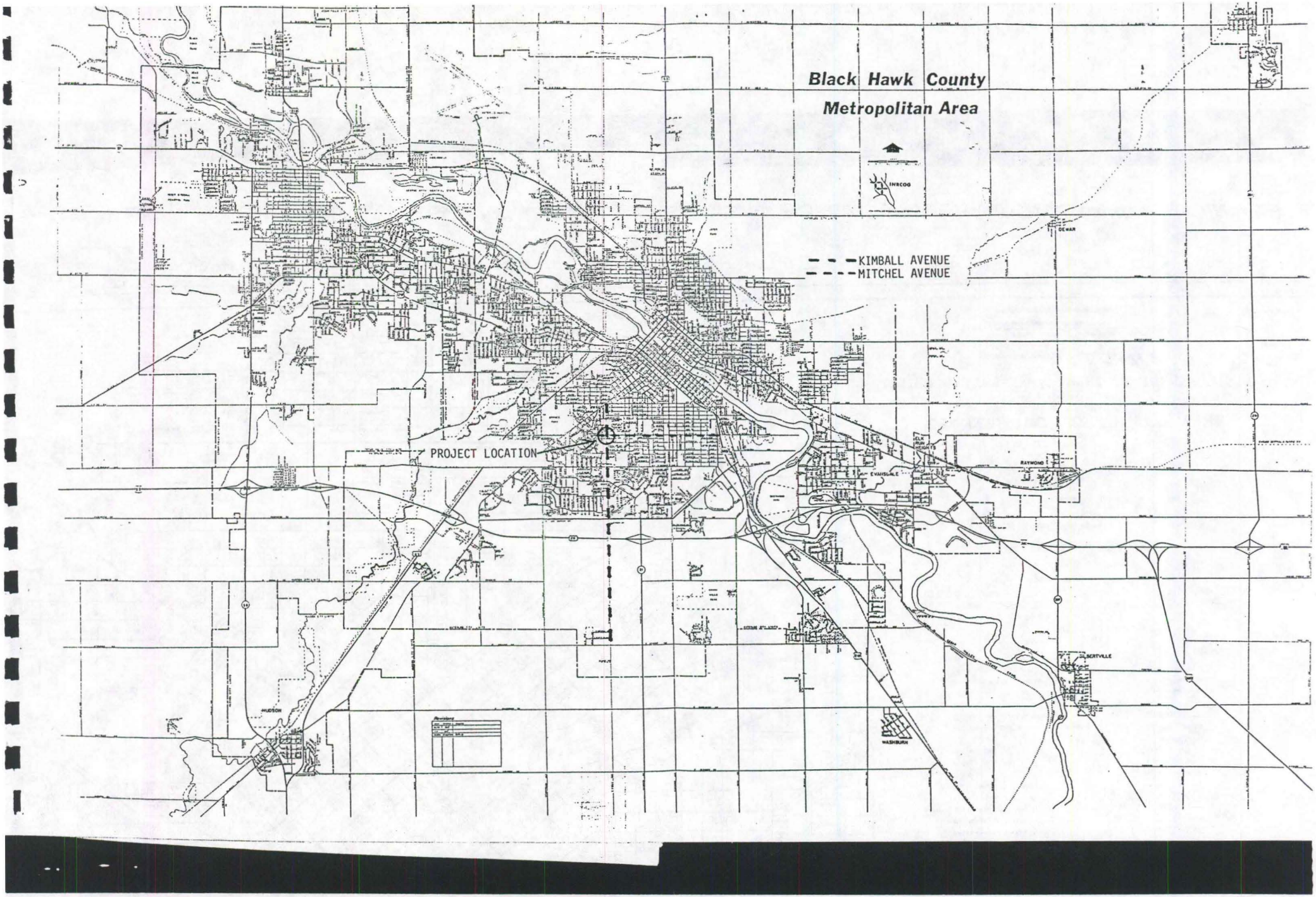
PHONE (515) 239-1289

IN COOPERATION WITH

UNITED STATES DEPARTMENT OF TRANSPORTATION

3/20/89

57 F


Black Hawk County
Metropolitan Area
INRCOG
KIMBALL AVENUE
MITCHEL AVENUE
PROJECT LOCATION
DEWAR
RAYMOND
EVANSDALE
ELK RUN HEIGHTS
WATERLOO
HUDSON
WASHBURN
GILBERTVILLE

PRELIMINARY ESTIMATE OF QUANTITIES FOR TRAFFIC SIGNAL SYSTEMS
KIMBALL AVENUE AND MITCHELL AVENUE

ITEM	DESCRIPTION	UNIT	ESTIMATED QUANTITY	UNIT PRICE	AMOUNT
1	CONTROLLER/CABINET 8-PHASE OPERATION, 12-BAY BACK PANEL, W/ PED. MOVEMENTS WAL W/ GREEN, (BASE MOUNTED)	EA	1	10,560.00	10,560.00
2	MAST POLES W/ 15 LUMINAIRE EXT. TRANSFER BASES WITH ANCHOR BOLTS, WITH MAST ARMS	EA	4	3,300.00	13,200.00
3	SIGNAL FACE, 3-SECTION TRAFFIC HEADS WITH TUNNEL VISORS, 12 INCH, W/ BACK-GROUND SHIELDS	EA	8	459.80	3,678.40
4	SIGNAL FACE, 2-SECTION PEDESTRIAN HEADS, 12 INCH WITH MOUNTING BRACKETS	EA	8	360.80	2,886.40
5	HANDHOLES WITH COVERS AND RINGS AND CABLE HOOKS	EA	5	264.00	1,320.00
6	CONCRETE C-4	CY	16	110.00	1,760.00
7	DETECTOR LOOP, SAWCUT	EA	10	594.00	5,940.00
8	PED. PUSHBUTTONS WITH SIGNS	EA	8	46.20	369.60
9	1 1/2 INCH PVC	LF	600	0.41	246.00
10	3 INCH RIGID STEEL CONDUIT(RSC)	LF	240	4.95	1,188.00
11	CABLE, SIGNAL 12c-#12 AWG	LF	270	1.23	332.10
		SUBTOTAL			$41,480.50

PRELIMINARY ESTIMATE OF QUANTITIES FOR TRAFFIC SIGNAL SYSTEMS (CONTINUED)
KIMBALL AVENUE AND MITCHELL AVENUE

ITEM	DESCRIPTION	UNIT	QUANTITY	PRICE	AMOUNT
	SUBTOTAL FROM PAGE ONE				$41,480.50
12	CABLE, #14 AWG SHIELDED, TWISTED PAIR	LF	1620	0.31	502.20
13	CABLE, SIGNAL 4c-#14 AWG	LF	460	2.31	1,062.60
14	1c-#6 AWG BARE STRANDED GROUND	LF	270	0.22	59.40
15	2c-#8 AWG(BLACK AND WHITE)	LF	100	0.17	17.00
16	1 1/2 INCH RIGID STEEL CONDUIT(RSC)	LF	150	3.85	577.50
17	12 PAIR COMMUNICATIONS CABLE	LF	130	0.91	118.30
18	SIGNAL HEADS TO MAST ARM BRACKETS	EA	8	95.70	765.60
19	2 CHANNEL DETECTOR AMPS + HARNESSES	EA	1	330.00	330.00
20	914 DETECTOR AMPS. + HARNESSES	EA	4	330.00	1,320.00
21	STREET NAME SIGNS(B-1,B-2,B-3,B-4,B-5, B-6)	EA	4	66.00	264.00
22	"D" CONNECTOR CABLE	EA	1	110.00	110.00
23	CABLE, 5c-#14 AWG(PED BUTTONS)	LF	310	2.42	750.20
24	2c-#10 AWG (STREET LIGHT)	LF	400	1.32	528.00
				TOTAL	$47,885.30

Iowa Department of Transportation
Request for Traffic Safety Funds

GENERAL INFORMATION

Applicant: City or County of City of Waterloo

Contact Person: Tim Mrozek Title: Traffic Engineer

Complete Mailing Address: 715 Mulberry Street
(Street Address and/or Box Number)

Waterloo (City) Iowa (State) 50703 (Zip) Daytime Phone: (319) 291-4440 (Area Code)

If more than one highway authority is involved in this project, please indicate the contact person, mailing address, and telephone number of the second highway authority.

Applicant: City or County of N/A

Contact Person: N/A Title: N/A

Complete Mailing Address: N/A
(Street Address and/or Box Number)

N/A (City) (State) (Zip) Daytime Phone: N/A (Area Code)

PLEASE COMPLETE THE FOLLOWING PROJECT INFORMATION:

Nature of Application:
_____ Site Specific
XXX Traffic Control Device
_____ Safety Study

Funding: Total Cost of the Proposed Improvement $ 88,793.40

Safety Funds Requested for the Project $ 88,793.40

ATTACHMENT "B"

HISTORY OF INTERSECTIONS

WEST RIDGEWAY AND HILLCREST AVENUE

West Ridgeway Avenue is 48′ back to back curb and gutter. The surface is PCC Pavement although Ridgeway Avenue is scheduled for an asphalt overlay this construction season. Hillcrest Road is a 30′ back to back curb and gutter concrete PCC Pavement with an ACC overlay. This intersection serves as a designated school crossing for Hoover Junior High School.

The existing equipment at this intersection consists of the following:

Controller - Automatic Model 1826 NMZ installed in 1968.
Two Phase

Poles, Arms, Heads - 2 poles with mast arms with one three section head on each arm and one three section head on each pole
2 poles with 2 3-section heads mounted on each pole
2 Pedestrian heads mounted on each pole for a total of 8

WEST ELEVENTH STREET AND COMMERCIAL STREET

West Eleventh Street is 48′ back to back curb and gutter with two 12′ lanes for westbound traffic and two 12′ lanes for eastbound traffic. Commercial Street is 32′ back to back curb and gutter for two-way traffic. Parking is allowed on one side of the street.

Existing equipment consists of the following:

Controller - Eagles EE70 Installed in 1966
Two Phase

Poles - 4 poles with 2 three section heads mounted on each pole

JUSTIFICATION

In 1985, a Metropolitan Area Traffic Operation and Signal Study (MATOSS) was developed for the Waterloo/Cedar Falls Metropolitan Area. The main purpose of MATOSS was to develop design standards for the unified improvement of traffic control in conjunction with the Interstate Substitution Program. All signalized intersections were reviewed in detail and included but were not limited to warrant analysis.

By using the information and recommendations provided in the MATOSS study as well as other analysis by the Transportation Staff, we intend to provide justification for updating the two signalized intersections in question using Traffic Safety Funds.

WEST RIDGEWAY AVENUE AND HILLCREST ROAD

On May 13, 1991, a warrant analysis was performed on this intersection. Under existing conditions, none of the 11 warrants were met. However, Warrant No. 4-School Crossing would be met if a gap study were done. This is not possible due to the fact that the intersection is signalized therefore making a gap study for a school crossing warrant unrepresentative. In addition, the intersection was evaluated based on projected traffic in five years. Three Warrants were met: Warrant No. 5-Progressive Movement, Warrant No. 9-Four Hour Volume, and Warrant No. 11 Peak Hour Volume Warrant.

It should be noted that due to age, the equipment at this intersection does not meet MUTCD standards.

WEST ELEVENTH STREET AND COMMERCIAL STREET

The most recent Warrant analysis revealed that this intersection met Warrant No. 7-Systems Warrant.

On Pages 4B-11 to 4B-13 of the MUTCD Manual, it sates that for through traffic, a minimum of two signal faces shall be provided and should be visible to traffic approaching the signals from a certain point depending on the posted speed limit to the stop bar. In this case with a posted speed limit of 35 mph, the minimum distance should be 325′ for Eleventh Street and 270′ for Commercial Street.

The signal pole locations at this intersection allow for only one signal face to be visible if stopped on the stop bar. This applies to all four approaches.

Again, the equipment at this intersection including poles, signal heads, and controller are obsolete as far as repair and replacement parts are concerned.

CONCLUSION

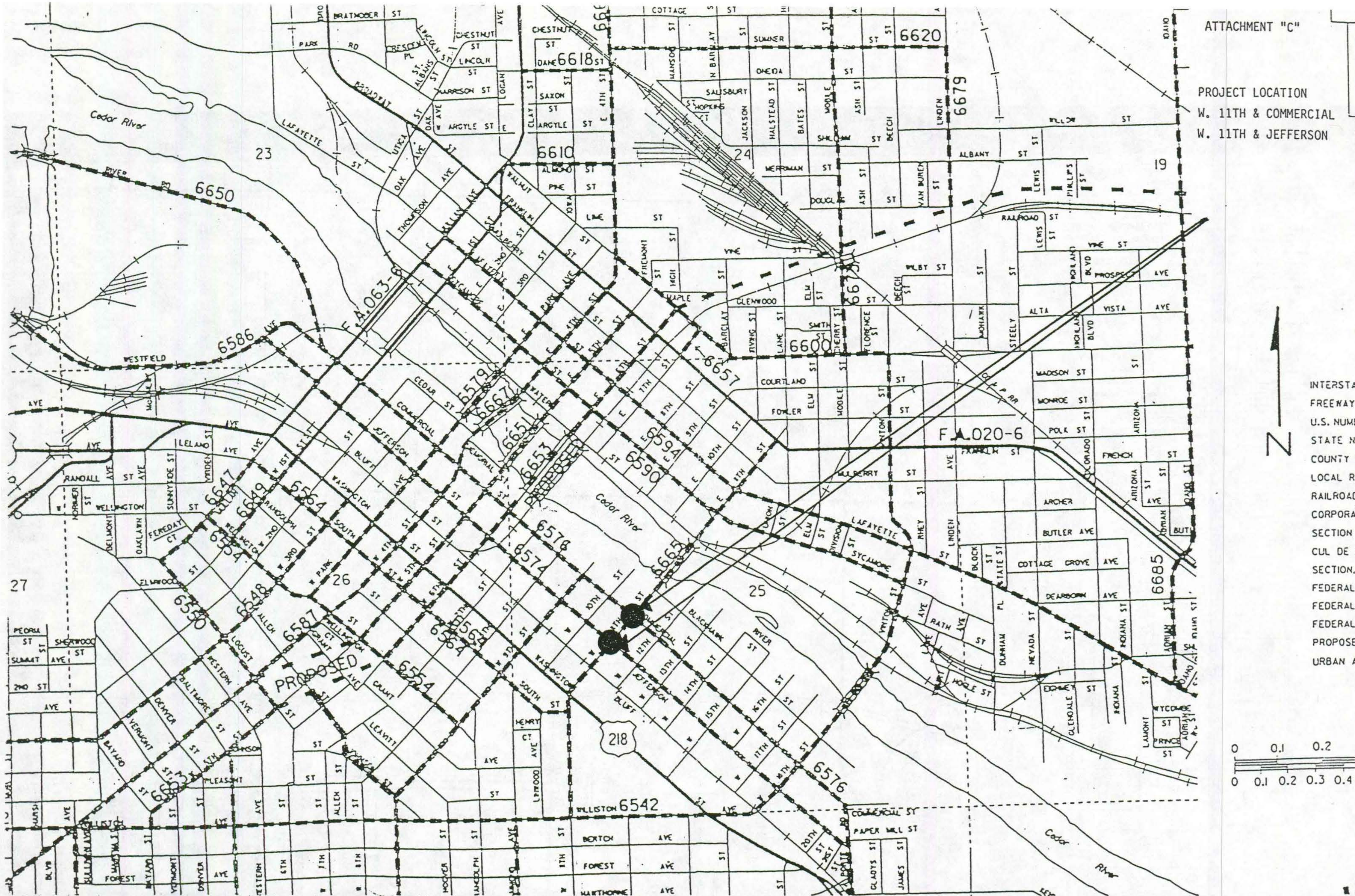
In the first phase of this request, we analyzed existing data from MATOSS and gathered additional data for the purpose of justifying some type of signal device at each of these intersections. The results showed that indeed a signalized traffic control device was warranted at each one.

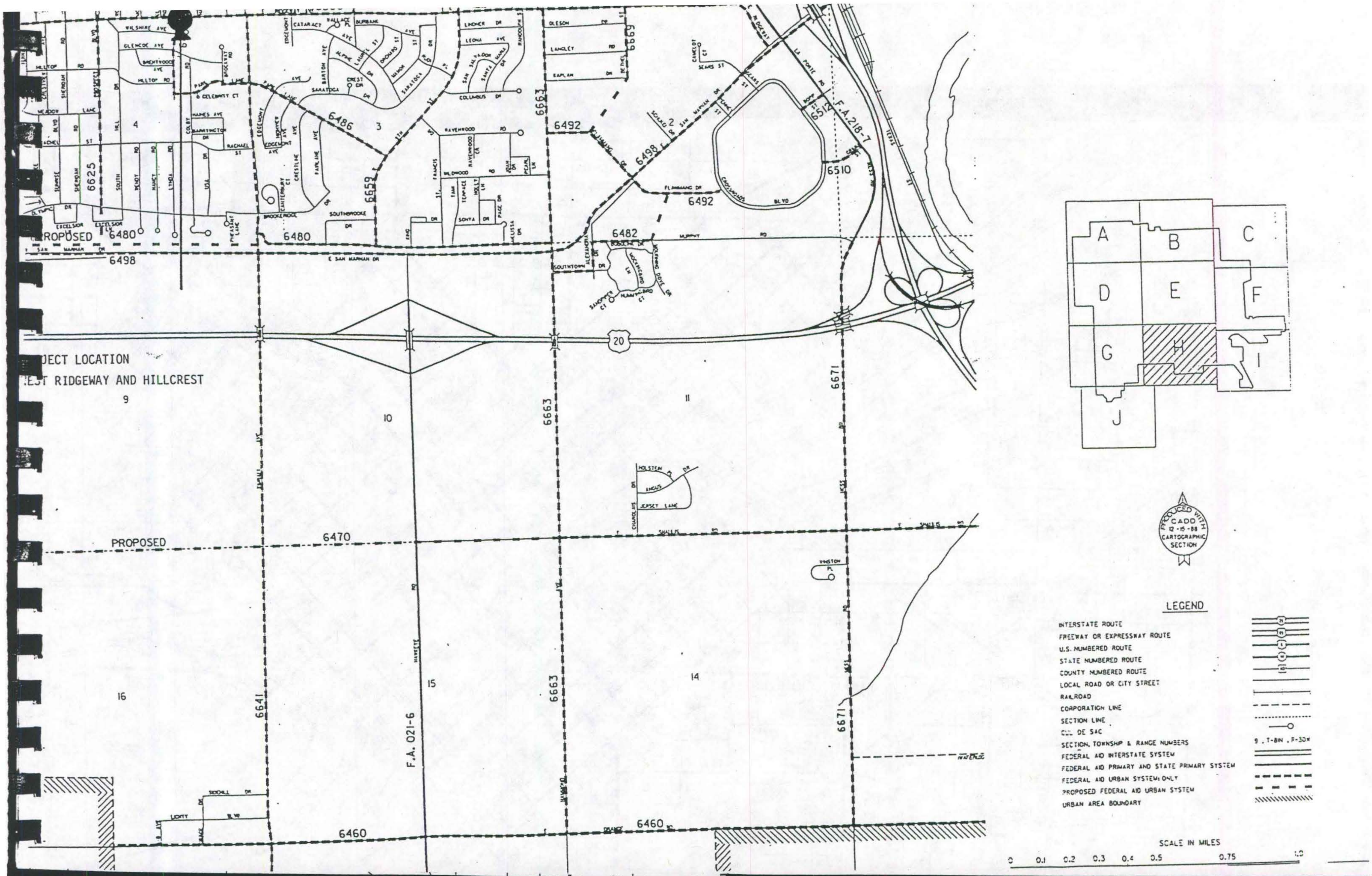
We then entered Phase II, "Analysis and Review of Existing Traffic Control Devices." Again, this was done at both intersections. Upon completion of Phase II, it as determined that due to the age of the control device and the nonconformance to MUTCD standards, it would be necessary to update the traffic signals at each intersection. This determination is supported by the conclusions and recommendations reached in the MATOSS study.

Therefore, we ask your consideration and approval of this application request for Traffic Safety Funds for Updating Traffic Control Devices at each of the described intersections.

ATTACHMENT "C"

PROJECT LOCATION
W. 11TH & COMMERCIAL
W. 11TH & JEFFERSON




PROPOSED 6480
6498
6486
6659
6625
6663
6492
6498
6482
6512
6510
F.A. 218-7
20
PROJECT LOCATION
WEST RIDGEWAY AND HILLCREST
PROPOSED
6470
6641
F.A. 021-6
6663
6671
6460
A
B
C
D
E
F
G
H
I
J
PRODUCED WITH CADD 12-15-88 CARTOGRAPHIC SECTION
LEGEND
INTERSTATE ROUTE
FREEWAY OR EXPRESSWAY ROUTE
U.S. NUMBERED ROUTE
STATE NUMBERED ROUTE
COUNTY NUMBERED ROUTE
LOCAL ROAD OR CITY STREET
RAILROAD
CORPORATION LINE
SECTION LINE
CUL DE SAC
SECTION, TOWNSHIP & RANGE NUMBERS
FEDERAL AID INTERSTATE SYSTEM
FEDERAL AID PRIMARY AND STATE PRIMARY SYSTEM
FEDERAL AID URBAN SYSTEM ONLY
PROPOSED FEDERAL AID URBAN SYSTEM
URBAN AREA BOUNDARY
SCALE IN MILES
0 0.1 0.2 0.3 0.4 0.5 0.75 1.0

PRELIMINARY ESTIMATE OF QUANTITIES FOR TRAFFIC SIGNAL SYSTEMS
WEST RIDGEWAY AVENUE AND HILLCREST ROAD
WEST ELEVENTH STREET AND COMMERCIAL STREET

ITEM	DESCRIPTION	UNIT	ESTIMATED QUANTITY	UNIT PRICE	AMOUNT
1	CONTROLLER/CABINET 8-PHASE OPERATION, 12-BAY BACK PANEL, W/ PED. MOVEMENTS WAL W/ GREEN, (BASE MOUNTED)	EA	2	9,600.00	19,200.00
2	MAST POLES W/ 15 LUMINAIRE EXT. TRANSFER BASES WITH ANCHOR BOLTS, WITH MAST ARMS	EA	8	3,000.00	24,000.00
3	SIGNAL FACE, 3-SECTION TRAFFIC HEADS WITH TUNNEL VISORS, 12 INCH, W/ BACK-GROUND SHIELDS	EA	24	418.00	10,032.00
4	SIGNAL FACE, 2-SECTION PEDESTRIAN HEADS, 12 INCH WITH MOUNTING BRACKETS	EA	16	328.00	5,248.00
5	HANDHOLES WITH COVERS AND RINGS AND CABLE HOOKS	EA	10	240.00	2,400.00
6	CONCRETE C-4	CY	16	100.00	1,600.00
7	DETECTOR LOOP, SAWCUT-ASPHALT	EA	20	540.00	10,800.00
8	PED. PUSHBUTTONS WITH SIGNS	EA	16	42.00	672.00
9	1 1/2 INCH PVC	LF	2000	0.37	740.00
10	3 INCH RIGID STEEL CONDUIT(RSC)	LF	480	4.50	2,160.00
11	CABLE, SIGNAL 12c-#12 AWG	LF	270	1.12	302.40

ATTACHMENT "E"

PRELIMINARY ESTIMATE OF QUANTITIES FOR TRAFFIC SIGNAL SYSTEMS (CONTINUED)

ITEM	DESCRIPTION	UNIT	QUANTITY	PRICE	AMOUNT
12	CABLE, #14 AWG SHIELDED, TWISTED PAIR	LF	3240	0.28	907.20
13	CABLE, SIGNAL 4c-#14 AWG	LF	920	2.10	1,932.00
14	1c-#6 AWG BARE STRANDED GROUND	LF	540	0.20	108.00
15	2c-#8 AWG(BLACK AND WHITE)	LF	200	0.15	30.00
16	1 1/2 INCH RIGID STEEL CONDUIT(RSC)	LF	300	3.50	1,050.00
17	12 PAIR COMMUNICATIONS CABLE	LF	260	0.83	215.80
18	SIGNAL HEADS TO MAST ARM BRACKETS	EA	16	87.00	1,392.00
19	2 CHANNEL DETECTOR AMPS + HARNESSES	EA	2	300.00	600.00
20	914 DETECTOR AMPS. + HARNESSES	EA	8	300.00	2,400.00
21	STREET NAME SIGNS(B-1,B-2,B-3,B-4,B-5, B-6)	EA	8	60.00	480.00
22	"D" CONNECTOR CABLE	EA	2	100.00	200.00
23	CABLE, 5c-#14 AWG(PED BUTTONS)	LF	620	2.20	1,364.00
24	2c-#10 AWG (STREET LIGHT)	LF	800	1.20	960.00
				TOTAL	**$ 88,793.40**

(PEOQTS)

Iowa Department of Transportation
Request for Traffic Safety Funds

GENERAL INFORMATION

Applicant: City or County of City of Waterloo

Contact Person: Tim Mrozek Title: Traffic Engineer

Complete Mailing Address: 408 E. 6th St.
(Street Address and/or Box Number)

Waterloo (City) Iowa (State) 50703 (Zip) Daytime Phone: 319-291-4440 (Area Code)

If more than one highway authority is involved in this project, please indicate the contact person, mailing address, and telephone number of the second highway authority.

Applicant: City or County of _____

Contact Person: _____ Title: _____

Complete Mailing Address: _____
(Street Address and/or Box Number)

_____ (City) _____ (State) _____ (Zip) Daytime Phone: _____ (Area Code)

PLEASE COMPLETE THE FOLLOWING PROJECT INFORMATION:

Nature of Application:
_____ Site Specific
XX Traffic Control Device
_____ Safety Study

Funding: Total Cost of the Proposed Improvement $ 185,000.00

Safety Funds Requested for the Project $ 160,000.00*

*Joint Safety and USTEP Funding Application

Total USTEP Funding	$25,000.00
IDOT Funding	13,750.00
City Funding	11,250.00

NARRATIVE

Highway 21 (Hawkeye Road) is a four-lane state highway with a posted speed limit at 55 MPH. Highway 21 intersects with the interchange of U.S. Highway No. 20 which is a conventional diamond interchange. Both of the ramps presently are unsignalized. Traffic counts were taken at both of these ramps and as can be seen in the proceeding material each ramp does meet a number of signal warrants as established by the Manual of Uniform Traffic Control Devices (MUTCD).

The City of Waterloo has used the Metropolitan area Traffic Operation and signal Study (MATOSS) which was financed through funds provided by the Federal Highway Administration for justification on interconnection feasibility on various traffic safety funding project. The MATOSS report did not address these intersections since it was prepared in the late 1980's, but due to the close proximity of the San Marnan Drive Subsystem A interconnection of these ramps would be an additional asset to the Waterloo's traffic control system.

Due to the number of warrants met at both of these intersections and with the close proximity of the San Marnan Drive Subsystem A, this is a justifiable Traffic Safety Fund and Urban State Traffic Engineering Project.

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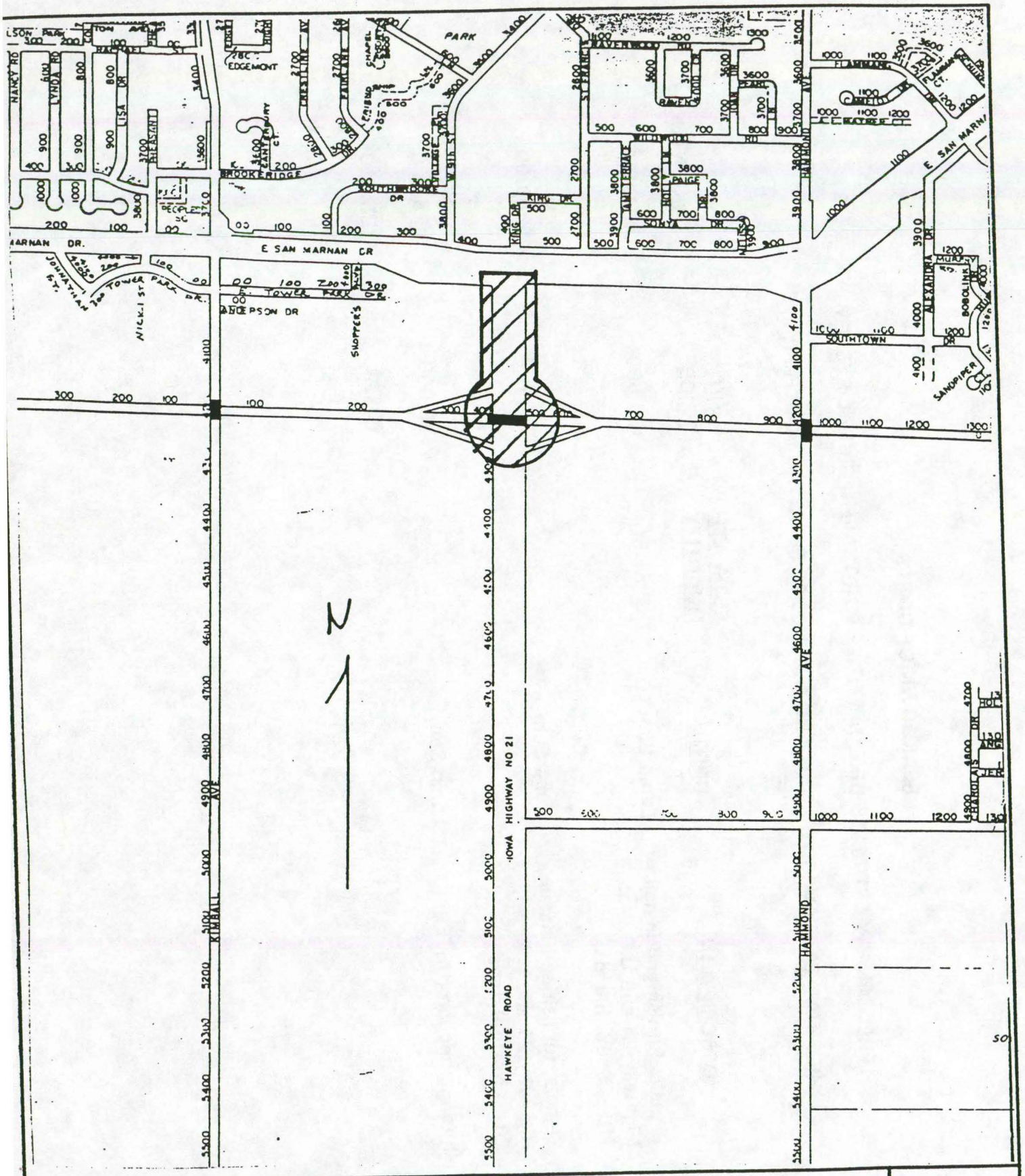


CITY OF WATERLOO TRAFFIC OPERATION DEPARTMENT	PROJECT LOCATION MAP	FIGURE 1
	TRAFFIC FUNDING	

BREAKDOWN OF COSTS

PRELIMINARY ESTIMATE OF QUANTITIES FOR TRAFFIC SIGNAL SYSTEM

HIGHWAY 21 (HAWKEYE ROAD AND U.S. NO. 20 (NORTH & SOUTH RAMPS)

ITEM	DESCRIPTION	UNIT	ESTIMATE QUANTITY	UNIT PRICE	AMOUNT
1	Signals, furnish and install Highway 21 and U.S. No. 20 - South Ramps	Lump Sum	1	$80,000	$80,000
2	Signals, furnish and install Highway 21 and U.S. No. 20 - North Ramps	Lump Sum	1	$80,000	$80,000
3	Interconnection (USTEP)	Lump Sum	1	$25,000	$25,000
				TOTAL	$185,000

Iowa Department of Transportation
Request for Traffic Safety Funds

GENERAL INFORMATION

Applicant: City or County of Iowa Department of Transportation

Contact Person: Roger Anderberg Title: Director, Office of Local Systems

Complete Mailing Address: 800 Lincoln Way
(Street Address and/or Box Number)

Ames (City) Iowa (State) 50010 (Zip) Daytime Phone: 515-239-1291 (Area Code)

If more than one highway authority is involved in this project, please indicate the contact person, mailing address, and telephone number of the second highway authority.

Applicant: City or County of _____

Contact Person: _____ Title: _____

Complete Mailing Address: _____
(Street Address and/or Box Number)

_____ Daytime Phone: _____
(City) (State) (Zip) (Area Code)

PLEASE COMPLETE THE FOLLOWING PROJECT INFORMATION:

Nature of Application:
_____ Site Specific
__X__ Traffic Control Device
_____ Safety Study

Funding: Total Cost of the Proposed Improvement $ 400,000

Safety Funds Requested for the Project $ 400,000

Form 000021- WP
2-75

IOWA DEPARTMENT OF TRANSPORTATION

To Office Engineering Division Date December 17, 1996

Attention C. I. MacGillivray Ref. No. 800

From Roger L. Anderberg

Office Local Systems

Subject Funding Request for Traffic Sign Inventories/Replacement Program, FY98

Action Requested: Approval of $400,000 from Traffic Safety Improvement Funds

Background: The department started the subject program in 1991 at a funding level of $120,000. In 1996, this program was continued at an increased level of funding of $200,000 in traffic safety improvement funds. The program is structured such that all communities with less than 5,000 population are eligible to apply. Applications for the program are considered in the order received.

Application Process: The first step in the program is for a community to submit an application for a sign inventory. In general, for those communities with less than 10 miles of streets, the Iowa DOT provides a traffic engineering consultant to conduct the sign inventory. In communities with 10 miles of streets or more, the traffic engineering consultant provides training and technical assistance, and the community is responsible for conducting the sign inventory. Once the inventory is completed, the community may wish to apply to receive materials to replace obsolete warning and regulatory signs.

A second application is also required from a community to initiate the receipt of sign replacement materials. When the application from a community is received, evaluated and approved, the Iowa DOT arranges for delivery of the requested signs, up to a maximum of $5,000 in materials, to an Iowa DOT maintenance facility near the city's location. When the materials are delivered to the maintenance facility, the applicant is responsible for picking up and installing the signs.

Program Needs: I understand this program has become extremely popular with Iowa communities due to their expressed need for replacing obsolete signs. As of today, the Iowa DOT has received approximately 500 applications from various Iowa communities for participating in this program. The traffic safety improvement funding approved to date will not be sufficient to meet the needs of all the applicants.

In view of this overwhelming demand from communities as stated above, we request your approval of $400,000 from traffic safety improvement funds to continue this program in the next fiscal year. Please contact me or Saleem Baig of our office staff if you have any questions.

RLA:SB:jj
cc: Fred Walker
Saleem Baig

Iowa Department of Transportation
Request for Traffic Safety Funds

GENERAL INFORMATION

Applicant: City ~~or County~~ of Marion

Contact Person: Erv Mussman Title: City Engineer

Complete Mailing Address: 195 35th Street
(Street Address and/or Box Number)

Marion (City) IA (State) 52302 (Zip) Daytime Phone: (319) 373-9422 (Area Code)

If more than one highway authority is involved in this project, please indicate the contact person, mailing address, and telephone number of the second highway authority.

Applicant: City or County of _____

Contact Person: _____ Title: _____

Complete Mailing Address: _____
(Street Address and/or Box Number)

_____ (City) _____ (State) _____ (Zip) Daytime Phone: _____ (Area Code)

PLEASE COMPLETE THE FOLLOWING PROJECT INFORMATION:

Nature of Application:
_____ Site Specific
__X__ Traffic Control Device
_____ Safety Study

Funding: Total Cost of the Proposed Improvement $ 70,000

Safety Funds Requested for the Project $ 40,000

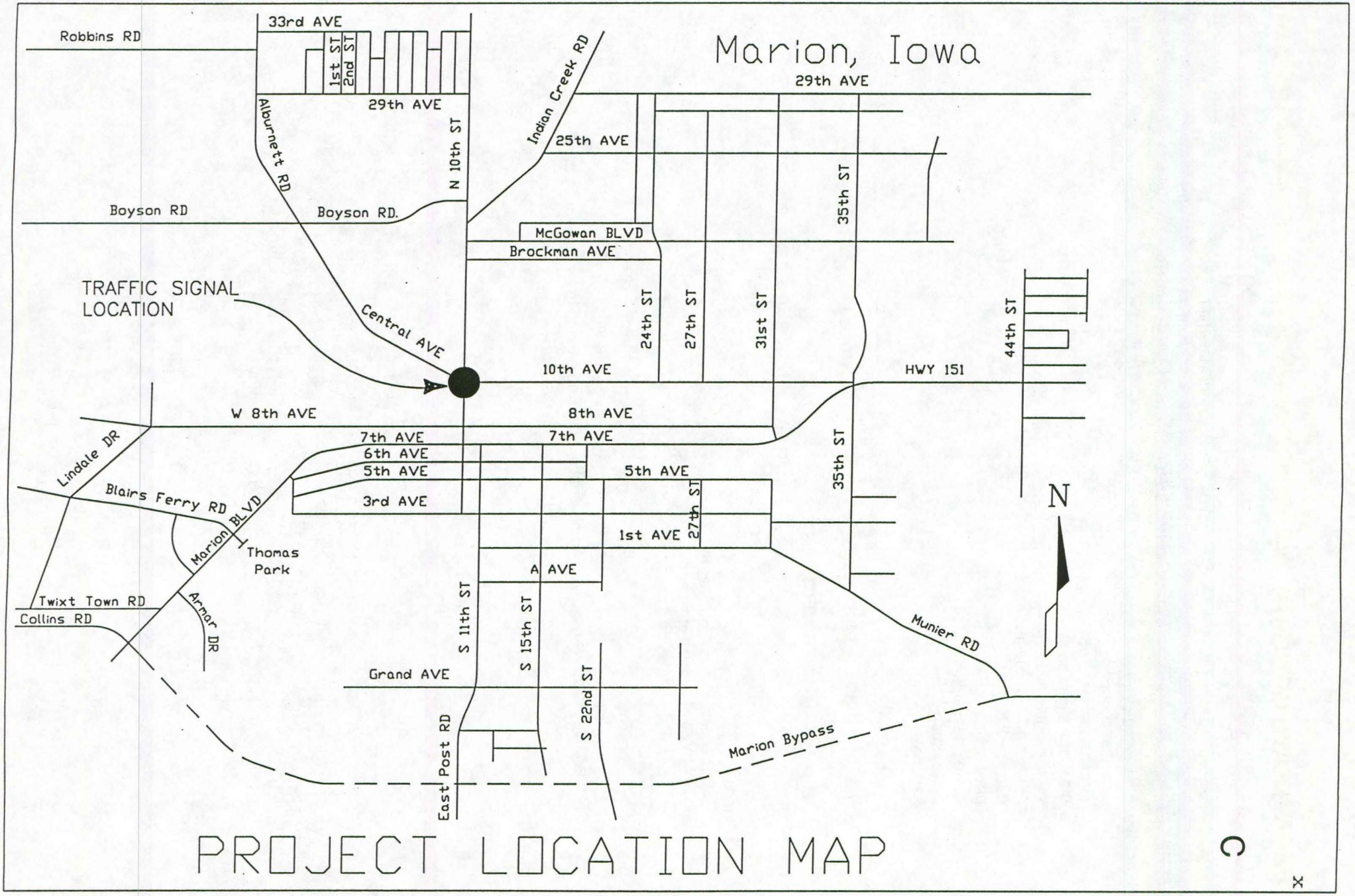
NARRATIVE

The intersection of 10th Street and 10th Avenue/Central Avenue is immediately north of the downtown commercial area of the City of Marion. Current daily traffic volumes are 12,400 vehicles per day on 10th Street and 4,600 vehicles per day on 10th Avenue. This traffic volume is currently being controlled by a four-way stop sign operation. The level of service (LOS) during peak hours is near or at failure for all approaches.

A traffic signal warrant analysis results in this intersection meeting Warrant 9 - Four Hour Volumes, Warrant 10 - Peak Hour Delay, Warrant 11 - Peak Hour Volume of the Manual On Uniform Traffic Control Devices (MUTCD). A copy of current traffic counts is included in Section G.

The signal controller will be fully actuated, providing an east-west phase, and a north-south phase. Pedestrian pushbuttons will be provided to actuate the pedestrian signal indications.

The signal heads will be mounted on mast arm poles to get the signal indications over the roadway. This will better locate the indications in the motorist's field of view. The signal heads would use 12-inch indications for improved visibility. Pedestrian signal indications would be provided at the intersection. Where possible, the street light poles would be removed and a combination signal/lighting pole would be used to eliminate the need for additional poles at the intersection.



PROJECT LOCATION MAP

BREAKDOWN OF COSTS

10TH STREET & 10TH AVENUE/CENTRAL AVENUE	Material / Equipment Cost	Installatior Cost
Furnish and install new signal including: actuated controller terminal facilities and cabinet mast arm signal poles vehicle signal heads pedestrian signal heads detector loops pedestrian push buttons cable and conduit power supply handholes	$40,000	$30,000
Total Estimated Cost	$40,000	$30,000
TOTAL PROJECT COST		**$70,000**

Project Financing:

Traffic Safety Funds (Equipment)	$40,000
City (100% of Installation)	$30,000
TOTAL	**$70,000**

Not included in above costs are Administration and Engineering to be paid for by the C

Iowa Department of Transportation
Request for Traffic Safety Funds

GENERAL INFORMATION

Applicant: City or ~~County of~~ Boone

Contact Person: Jeff Kooistra Title: City Administrator

Complete Mailing Address: 923 8th Street
(Street Address and/or Box Number)

Boone (City) Iowa (State) 50036 (Zip) Daytime Phone: 515-432-4211 (Area Code)

If more than one highway authority is involved in this project, please indicate the contact person, mailing address, and telephone number of the second highway authority.

Applicant: City or County of _____

Contact Person: _____ Title: _____

Complete Mailing Address: _____
(Street Address and/or Box Number)

_____ (City) _____ (State) _____ (Zip) Daytime Phone: _____ (Area Code)

PLEASE COMPLETE THE FOLLOWING PROJECT INFORMATION:

Nature of Application:
_____ Site Specific
__X__ Traffic Control Device
_____ Safety Study

Funding: Total Cost of the Proposed Improvement $ 360,000

Safety Funds Requested for the Project $ 150,000

NARRATIVE

B

The City of Boone is applying for Traffic Safety Funds to help with the installation of traffic control signals at the following intersections:

- Story Street and Park Avenue;
- 8th Street and Benton Street;
- Mamie Eisenhower Avenue and Benton Street; and
- Mamie Eisenhower Avenue and Cedar Street.

Story Street and Park Avenue

Story Street is a four-lane roadway with Park Avenue having two traffic lanes. The intersection is currently controlled by four-way stop signs with flashing red beacons. The intersection was changed to a four-way stop due to increasing traffic volumes on Story Street. This intersection is also a crossing location for children going to the City Park. The traffic count data shows that the intersection meets the requirements of Warrant 2 - Interruption of Continuous Traffic of the Manual On Uniform Traffic Control Devices (MUTCD).

8th Street and Benton Street

Both 8th Street and Benton Street are two-lane roadways. The intersection is controlled by four-way stop signs. The Union Pacific Railroad cuts through Boone with an east-west line. North of the intersection on Benton Street is the only railroad overpass in the City. When a train is occupying the other crossings, the traffic volume at this intersection will see increases. The traffic count data shows that this intersection meets the requirements of Warrant 1 - Minimum Vehicular Volume of the MUTCD.

Mamie Eisenhower Avenue and Benton Street

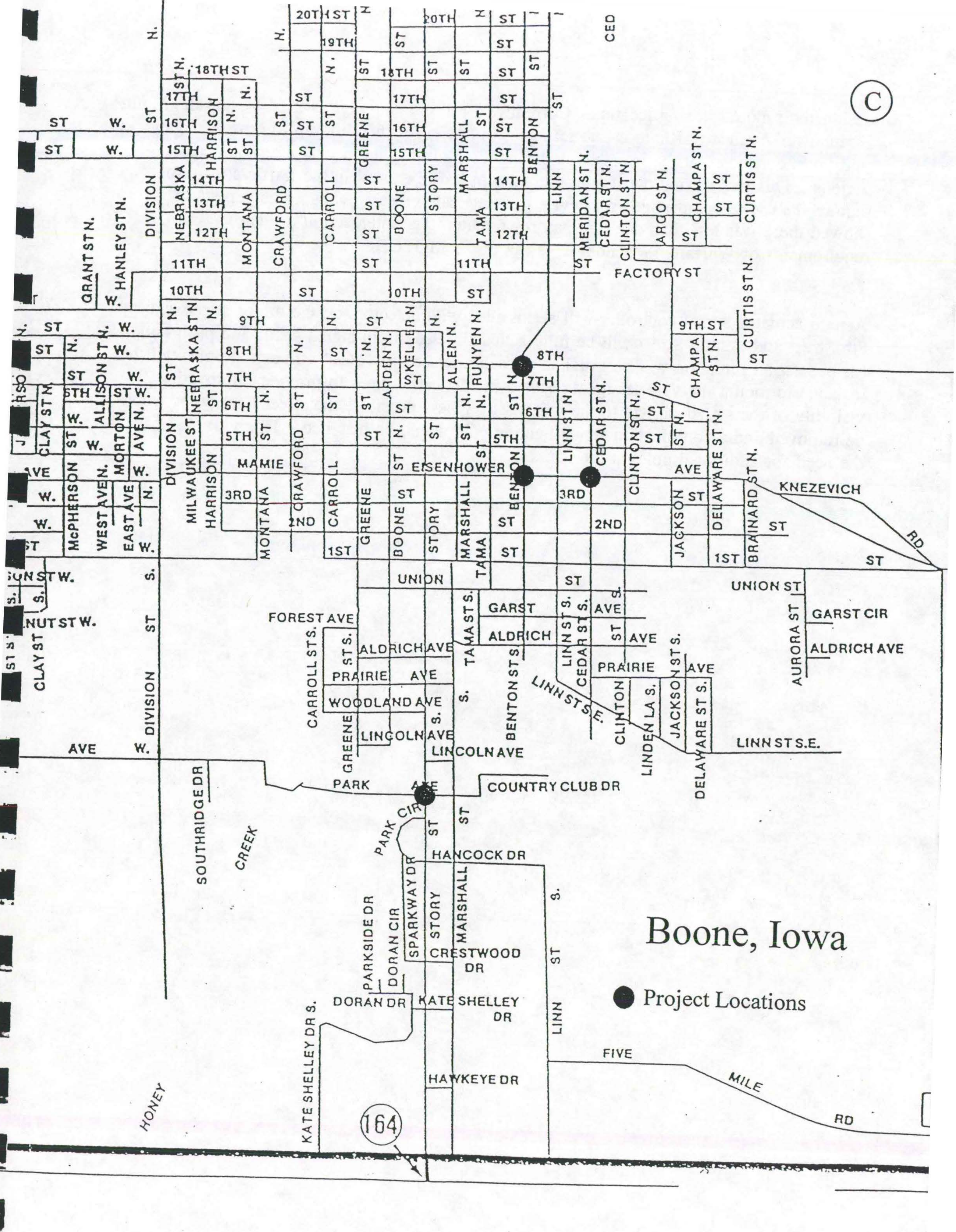
Mamie Eisenhower Avenue and Benton Street are both two-lane roadways. Traffic control at this intersection is by stop sign control on Benton Street. Benton Street is a major north-south roadway in Boone since it provides a route to get under the Union Pacific Railroad tracks by means of an underpass. Traffic count data shows that this intersection meets the requirements of Warrant 1 - Minimum Vehicular Volume of the MUTCD.

Mamie Eisenhower Avenue and Cedar Street

Mamie Eisenhower Avenue and Cedar Street are both two-lane roadways. Traffic control at this intersection is usually by stop sign control on Cedar Street. The intersection is a

designated school crossing location. Currently, a roll out stop sign is used to stop the Mamie Eisenhower Avenue traffic to create safe gaps in traffic for the children to cross. A gap study was conducted at the intersection during the morning, noon, and afternoon crossing periods. This was to find out if adequate gaps in traffic existed in the traffic stream to require the use of a traffic control device to create safe crossing gaps. The gap study showed there was less than one safe gap per minute. The intersection meets the requirements of Warrant 4 - School Crossing of the MUTCD.

A semi-actuated signal controller will be installed with detectors on the minor streets except 8th Street and Benton Street will be fully actuated. Pedestrian signal heads and push buttons for pedestrian actuation will be installed at each intersection. Mast arm signal poles will be installed to mount the vehicle signal heads over the traffic lanes to provide improved visibility of the signal display to the motorists. Where possible, the street light poles would be removed and a combination signal/lighting pole would be installed. This will eliminate the need for additional poles at the intersections.


C
Boone, Iowa
Project Locations
164
DIVISION ST
STORY ST
MARSHALL ST
BENTON ST
LINN ST
CEDAR ST N.
EISENHOWER
MAMIE
UNION
GARST
ALDRICH
PRAIRIE AVE
WOODLAND AVE
LINCOLN AVE
PARK AVE
COUNTRY CLUB DR
HANCOCK DR
CRESTWOOD DR
KATE SHELLEY DR
HAWKEYE DR
FIVE MILE RD
KNEZEVICH RD
FACTORY ST
LINN ST S.E.
SOUTHRIDGE DR
HONEY CREEK

BREAKDOWN OF COSTS

E

STORY STREET AND PARK AVENUE	Material / Equipment Cost	Installation Cost
Furnish and install new signal including: actuated controller terminal facilities and cabinet 4 mast arm signal poles vehicle signal heads pedestrian signal heads pedestrian push buttons detector loops cable and conduit power supply handholes	$37,500	$37,500

8TH STREET AND BENTON STREET	Material / Equipment Cost	Installation Cost
Furnish and install new signal including: actuated controller terminal facilities and cabinet 4 mast arm signal poles vehicle signal heads pedestrian signal heads pedestrian push buttons detector loops cable and conduit power supply handholes	$37,500	$37,500

BREAKDOWN OF COSTS

(E)

MAMIE EISENHOWER AND BENTON STREET	Material / Equipment Cost	Installation Cost
Furnish and install new signal including:	$37,500	$37,500
actuated controller		
terminal facilities and cabinet		
4 mast arm signal poles		
vehicle signal heads		
pedestrian signal heads		
pedestrian push buttons		
detector loops		
cable and conduit		
power supply		
handholes		

MAMIE EISENHOWER AND CEDAR STREET	Material / Equipment Cost	Installation Cost
Furnish and install new signal including:	$37,500	$37,500
actuated controller		
terminal facilities and cabinet		
4 mast arm signal poles		
vehicle signal heads		
pedestrian signal heads		
pedestrian push buttons		
detector loops		
cable and conduit		
power supply		
handholes		
Total Estimated Costs	$150,000	$150,000

TOTAL PROJECT COST $300,000

Project Financing:

Traffic Safety Funds (Equipment)	$150,000
City (100% of Installation)	150,000
TOTAL	**$300,000**

Not included in above costs are Administration and Engineering to be paid for by the City.

RECEIVED

MAR 24 1997

OFFICE OF TRANSPORTATION SAFETY

Iowa Department of Transportation
Request for Traffic Safety Funds

GENERAL INFORMATION

Applicant: City or County of CITY OF AVOCA

Contact Person: Max Anson Title: Mayor

Complete Mailing Address: 201 North Elm St, P O Box 246
(Street Address and/or Box Number)

AVOCA (City) IA (State) 51521 (Zip) Daytime Phone: 712-343-2424 (Area Code)

If more than one highway authority is involved in this project, please indicate the contact person, mailing address, and telephone number of the second highway authority.

Applicant: City or County of _____

Contact Person: _____ Title: _____

Complete Mailing Address: _____
(Street Address and/or Box Number)

_____ (City) _____ (State) _____ (Zip) Daytime Phone: _____ (Area Code)

PLEASE COMPLETE THE FOLLOWING PROJECT INFORMATION:

Nature of Application:
_____ Site Specific
__x__ Traffic Control Device
_____ Safety Study

Funding: Total Cost of the Proposed Improvement $ 75000.00

Safety Funds Requested for the Project $ 75000.00

k

k

GENERAL

The scope of this study is to develop a district wide school route plan which focuses on establishing pedestrian routes for elementary students in Avoca. The study identifies the need for additional sidewalks, transportation facilities and traffic control at school crossings. A secondary focus was to ensure that the school routes and traffic controls also serve other pedestrian oriented facilities such as parks and recreation areas.

DATA COLLECTION

The data collection phase of the study was a joint effort by the City of Avoca, Avoca Public Schools, Iowa DOT and Snyder and Associates, Inc.

The City of Avoca provided maps of school district attendance boundaries, intersection traffic controls, sidewalk locations, school/pedestrian traffic control and accident data.

The school district provided the Consultant with student attendance data.

The Iowa DOT provided PC-ALAS accident information for pedestrian/bicycle related traffic accidents within Avoca during the three year period of July, 1990 through June, 1993 and electronic media for a map of the City of Avoca.

ELEMENTARY SCHOOL LOCATION

The elementary school grounds are located between Walnut Street on the west, Chestnut Street on the east, Thomas Street on the north, and Taylor Street on the south. Thomas Street and Taylor Street between Walnut Street and Chestnut Street are one-way streets eastbound and westbound respectively.

ANALYSIS AND RECOMMENDATIONS

The Consultant established a series of school routes for children to utilize to and from school. These routes are indicated by arrows on the school route map shown in Figure 1. Consideration of a route was based on maximizing the safety of children while utilizing existing sidewalks and traffic control whenever possible. In some instances children have been routed a slightly longer distance to school in an effort to utilize existing facilities and to minimize exposure to heavily traveled streets.

One accident involving a bicyclist occurred in Avoca during the time period of July, 1990 through June, 1993. The accident resulted in a minor injury.

The City of Avoca supplied an accident report for a pedestrian accident that occurred on September 1, 1994. The accident occurred on Walnut Street (US Highway 59) near Kearny Street. Major injuries were sustained by the pedestrian. PC-ALAS data and the Avoca accident report are attached in Appendix A.

Thirty-one sidewalk segments listed in Table 1 are needed for the school routes. They should be scheduled for sidewalk construction over a reasonable period of time to implement the school route plan. The sidewalks are listed in order of construction priority. The order of construction priority is based on the number of students expected to use each sidewalk segment. While approximately 18,800 linear feet of sidewalk is needed to complete the sidewalk network required in the school route plan, many of the thirty-one segments are relatively short, 100 feet to one block, and should be implemented to complete a route to school.

School crossings of US Highway 59 are limited to one location in the school route plan; US Highway 59 (Walnut Street) at Taylor Street.

Table 2 summarizes traffic sign installation and removal recommendations. Portable or part-time STOP signs are specifically prohibited by Section 2B-5 of the *Manual On Uniform Traffic Control Devices* (MUTCD) and are recommended for removal even though they are permitted under Iowa Statute.

A study of the gaps in traffic on US Highway 59 at Taylor Street was conducted on October 30, 1995. Due to the roll-out STOP sign at Taylor Street a normal gap study was not possible. In order to simulate a gap study, the arrival times of vehicles as they entered the northbound and southbound queues were used to simulate the traffic patterns that would result if the roll-out STOP sign was not present. During the nine minute interval that students were present at the crossing, eight gaps of acceptable length occurred in the traffic stream. When adequate gaps occur less frequently than one per minute, pedestrians may become impatient and endanger themselves by attempting to cross during and inadequate gap. When adequate gaps are not present the crossing should be relocated to a location with acceptable gaps or a means of creating adequate gaps should be provided. While adequate gaps were available eight times during the nine minutes that crossings by students occurred, due to the uneven distribution of adequate gaps, only one adequate gap occurred during a four minute interval of the nine minutes. The requirements of traffic signal Warrant 4, the school crossing warrant, are met at this location. The requirements of Warrant 4 are outlined in Section 4C-6 of the MUTCD, a copy of which is on file at City Hall.

No intersection along US Highway 59 would have better crossing opportunities, since the only traffic control stopping traffic on US Highway 59 is the roll-out STOP sign at Taylor Street. We recommend the removal of the STOP sign control at this intersection and the installation of a semi actuated traffic signal with vehicle actuation for Taylor Street and pedestrian actuation for the crossing of US Highway 59.

Many of the sidewalks in the study area do not comply with the Americans with Disabilities Act (ADA) pedestrian ramp requirements. New pedestrian ramps need to be constructed and non-complying locations need to be reconstructed in a manner consistent with the ADA requirements, if permitted by site conditions. The Iowa DOT standard sidewalk ramp detail (RB-6) is attached in Appendix B.

Crosswalks should be denoted with the recommended pavement markings outlined in Section 3B-18 of the MUTCD at the crossing of US Highway 59 and the crossings of Iowa Highway 83.

The Iowa DOT, in concert with FHWA, is currently evaluating the effectiveness of FLUORESCENT YELLOW-GREEN TRAFFIC SIGNS for bicycle crossings, school crossings, pedestrian crossings, and associated advance signing for each category. The City may wish to consider installing the recommended school and pedestrian signs with these experimental signs which requires special authorization from FHWA through the Iowa DOT. The FHWA allows deviations from the MUTCD under the experimentation provisions in Section 1A-6. To participate the City should contact the Southwest Iowa Transportation Center office of the Iowa DOT in Atlantic for additional information about the authorization for these signs.

BUS LOADING/UNLOADING AREAS

A bus loading area is located on Chestnut Street, south of Thomas Street, which is directly adjacent to the elementary school. This facility provides a bus loading/unloading area and a sidewalk connecting to the school with no pedestrian/bus conflict points.

IMPLEMENTATION

The successful implementation of the school route plan is premised upon these key elements.

- Installation of recommended painted crosswalks.
- Modification of traffic control as recommended.
- Construction of recommended sidewalks.
- Understanding and continuation of the school route plan by students, parents, teachers and school administrators.

The School Traffic Safety Committee should be informed of the plan to ensure its implementation. The Committee should be comprised of local governmental officials and parent-teacher organization representatives who have the authority to "get things done". The Committee would be responsible for adopting and administering the school safety program.

The AAA Iowa (American Automobile Association) also provides pamphlets, videos and other materials regarding school safety and adult guards which are available to cities and school districts. If interested, contact Public Affairs Consultant, AAA Iowa, 1500 30th Street, West Des Moines, Iowa 50266 (Phone No. 515-223-4104) for information regarding AAA materials.

To administer the school route plan developed by this study, the following actions are recommended:

1. Provide each classroom with an explanation of the proposed routes and other traffic safety issues at the beginning of each school semester.

2. Provide a copy of the school route plan to each student to be taken home and discussed by students and parents. It is desirable to have the parents sign and return to the school a form indicating they have instructed their children on the use of the appropriate route.

3. Provide law enforcement personnel with a copy of the plan for their use in patrolling the area. The plan will show the officials where potential vehicle pedestrian conflicts may occur, and provides for selective enforcement along the school routes.

SUMMARY

The Consultant has analyzed existing pedestrian facilities and developed a school route plan. The plan includes the following recommendations:

1. The City order constructed 18,800 linear feet of sidewalk to complete the school route plan over a reasonable period of time, with priority given to those areas where there is high student use as established in descending priority in Table 1.

2. Modify traffic control signs as recommended.

3. Remove the roll out STOP signs and install a traffic signal on US Highway 59 at Taylor Street.

FUNDING

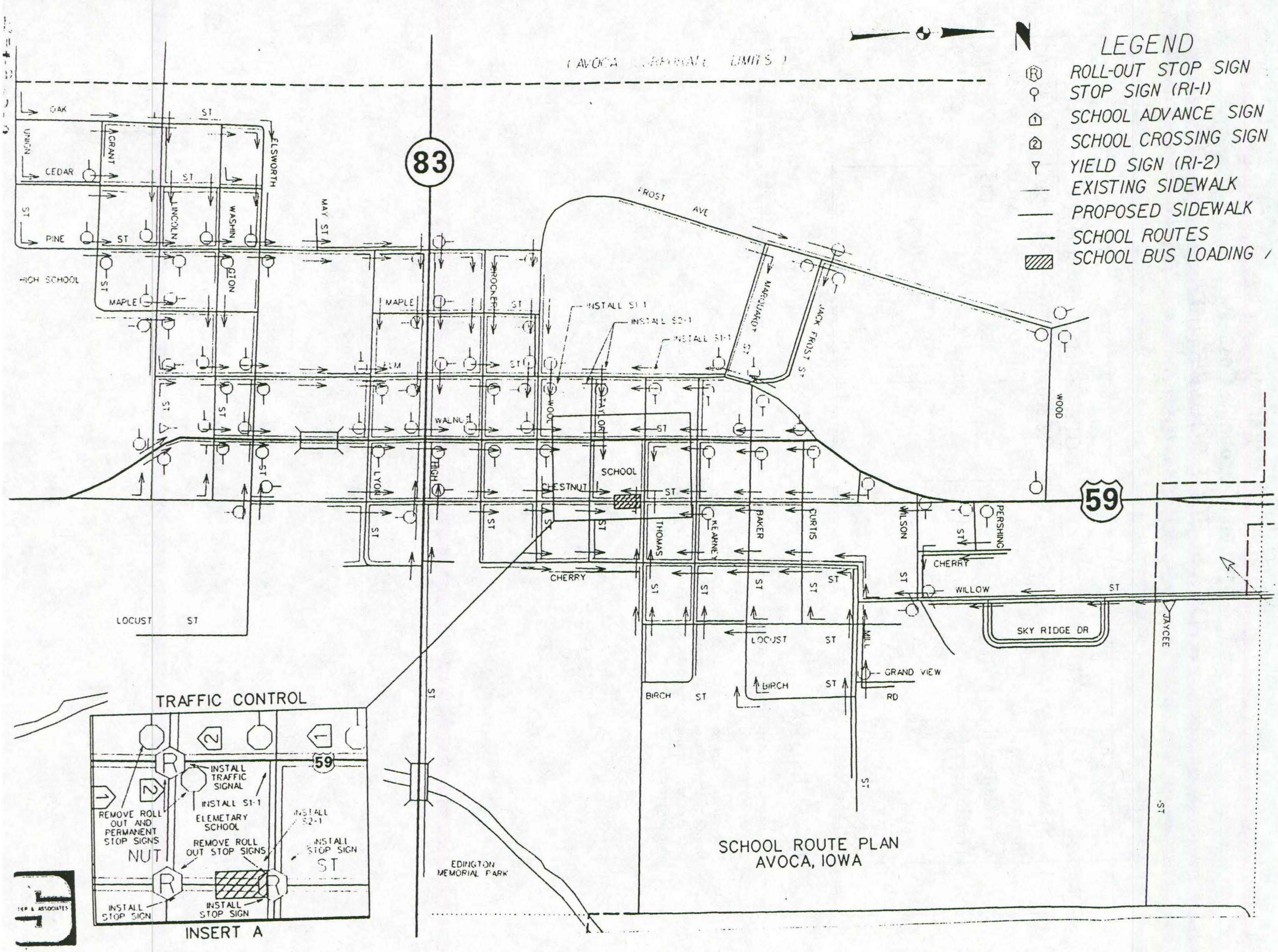
The recommended improvements have an order of magnitude cost of $285,000. A summary of the costs is shown in Table 3.

Funding for sidewalk improvements is not typically eligible from either state or federal programs unless it is part of a street improvement project. Therefore, to accomplish the recommended sidewalk improvements the following is recommended:

1. The City enact a policy of requiring sidewalk construction with the development of vacant land to create a complete sidewalk network.

2. The City continue sidewalk programs to construct sidewalk shown by this and future studies in areas which are already developed. Every attempt should be made to accomplish the construction by voluntary compliance rather than by assessment.

Funding for the traffic signal equipment is available from the Traffic Control section of the Iowa DOT Traffic Safety Fund (TSF). The City should contact the Southwest Iowa Transportation Center office of the Iowa DOT in Atlantic for additional information about the availability of funding for the traffic control improvements.



LEGEND
ROLL-OUT STOP SIGN
STOP SIGN (R1-1)
SCHOOL ADVANCE SIGN
SCHOOL CROSSING SIGN
YIELD SIGN (R1-2)
EXISTING SIDEWALK
PROPOSED SIDEWALK
SCHOOL ROUTES
SCHOOL BUS LOADING
N
83
59
FROST AVE
OAK ST
CEDAR ST
PINE ST
MAPLE ST
ELM ST
WALNUT
CHESTNUT ST
CHERRY
LOCUST ST
BIRCH ST
WILLOW ST
SKY RIDGE DR
GRAND VIEW RD
UNION ST
GRANT
LINCOLN
WASHINGTON
ELSWORTH
MAY ST
HIGH SCHOOL
LYON ST
HIGH ST
CROCKER
WOOD
TAYLOR ST
THOMAS ST
KEARNEY ST
BAKER ST
CURTIS ST
MARQUARDT ST
JACK FROST ST
WILSON ST
PERSHING ST
MILL ST
JAYCEE ST
SCHOOL
INSTALL S1-1
INSTALL S2-1
INSTALL S1-1
EDINGTON MEMORIAL PARK
TRAFFIC CONTROL
INSTALL TRAFFIC SIGNAL
INSTALL S1-1
REMOVE ROLL OUT AND PERMANENT STOP SIGNS
ELEMETARY SCHOOL
INSTALL S2-1
INSTALL STOP SIGN
REMOVE ROLL OUT STOP SIGNS
NUT
ST
INSTALL STOP SIGN
INSTALL STOP SIGN
INSERT A
SCHOOL ROUTE PLAN
AVOCA, IOWA

Table 3
Order of Magnitude
Opinion of Probable Cost
AVOCA SCHOOL ROUTE STUDY

No.	ITEM	QTY	UNIT	UNIT COST	ITEM TOTAL
1	4' Sidewalk	18,800	LF	$10	$188,000
2	Sign and Post	9	EA	$100	$900
3	6" Wide Pavement Markings	3	STA	$35	$105
4	Traffic Signal	1	EA	$70,000	$70,000
	SUBTOTAL				$259,005
	CONTINGENCIES (10%)				$25,995
	TOTAL ESTIMATE				$285,000

Note: This estimate represents approximate construction quantities only and does not provide a detailed list of expected construction project pay items. The estimate is to be used as a planning number only. Actual costs may vary as detailed design plans are prepared.

Iowa Department of Transportation
Request for Traffic Safety Funds

GENERAL INFORMATION

Applicant: City ~~or County~~ of KEYSTONE

Contact Person: ROBERT E. SCHMIDT Title: SUPERINTENDENT OF PUBLIC WORKS

Complete Mailing Address: 208 1st. STREET BOX 215
(Street Address and/or Box Number)

KEYSTONE, IA 52249 Daytime Phone: (319) 442-3246
(City) (State) (Zip) (Area Code)

If more than one highway authority is involved in this project, please indicate the contact person, mailing address, and telephone number of the second highway authority.

Applicant: City or County of _____

Contact Person: _____ Title: _____

Complete Mailing Address: _____
(Street Address and/or Box Number)

_____ Daytime Phone: _____
(City) (State) (Zip) (Area Code)

PLEASE COMPLETE THE FOLLOWING PROJECT INFORMATION:

Nature of Application:
_____ Site Specific
XX Traffic Control Device
_____ Safety Study

Funding: Total Cost of the Proposed Project $ 563.38

Safety Funds Requested for the Project $ 563.38

Fred Walker
Transportation Safety

Iowa Department of Transportation

800 Lincoln Way, Ames, IA 500100 515/239-1190

October 7, 1993 Ref. No. 591.24

Mr. Robert Schmidt
208 1st St., Box 215
Keystone, IA 52249

Dear Mr. Schmidt:

As part of the Sign Inventory/Upgrade Program, the Iowa Department of Transportation has reviewed the traffic control at the intersection of 5th Avenue and Railroad Street in Keystone. Our recommendation is to remove the existing "stop" sign on the north approach of 5th Street and replace the "yield" sign on the east approach of Railroad Street with a "stop sign." This recommendation is consistent with the Manual on Uniform Traffic Control Devices and would provide the least delay to motorists.

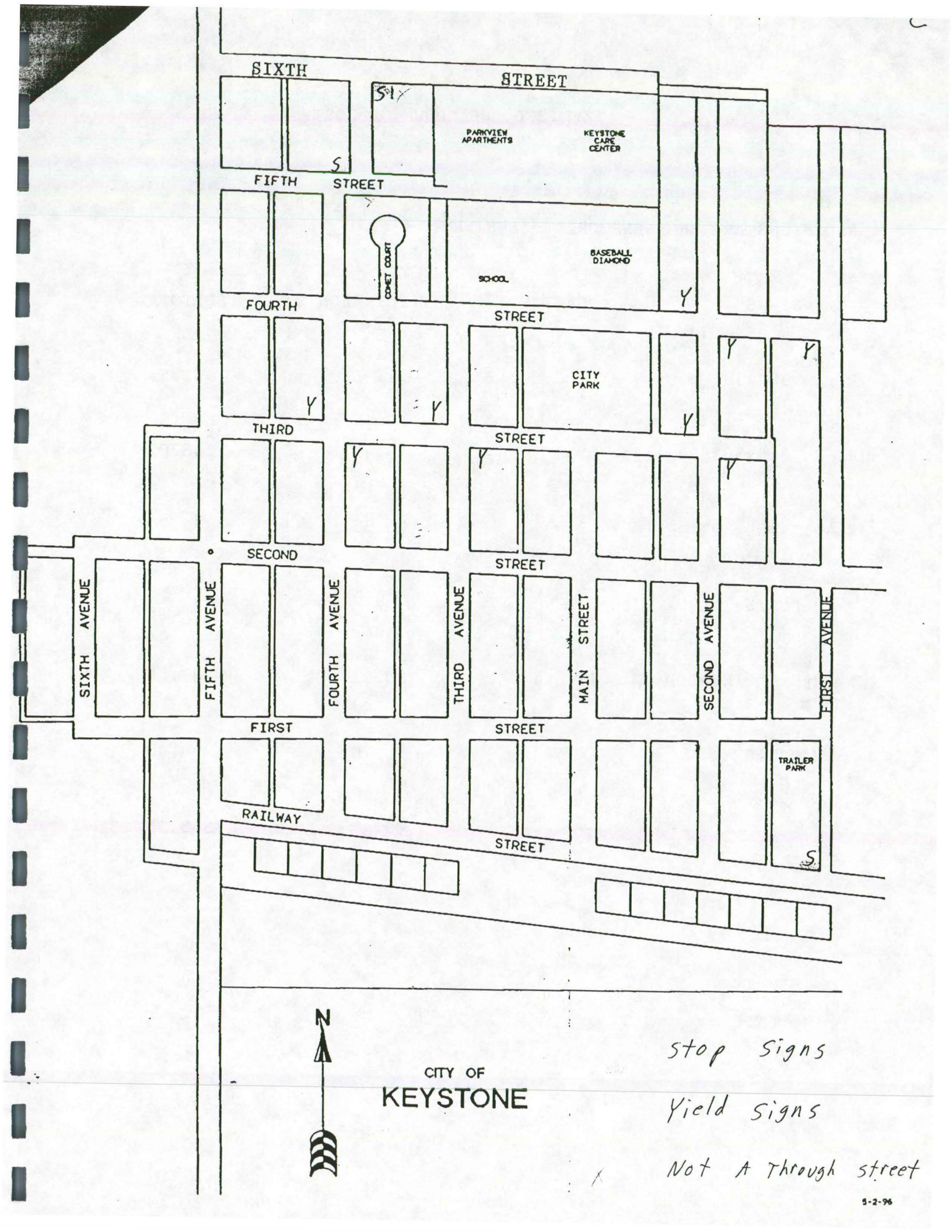
As per the memorandum you submitted with your application and our recent telephone conversations, it is noted that the City of Keystone refuses to modify traffic control at this intersection. For this reason, the sign material ordered through the Sign Inventory Program will exclude any traffic control devices, and the city will assume all responsibility for traffic control at this intersection.

Sincerely,

Marlee Walton

Marlee Walton, P.E.
Office of Program Management
Planning & Research Division

MW/jas
cc: R. Kautz, Local Systems Engineer, District 6, Iowa DOT
F. W. Walker, Acting Director, Bureau of Transportation Safety, Iowa DOT


SIXTH STREET
FIFTH STREET
FOURTH STREET
THIRD STREET
SECOND STREET
FIRST STREET
RAILWAY STREET
PARKVIEW APARTMENTS
KEYSTONE CARE CENTER
COMET COURT
SCHOOL
BASEBALL DIAMOND
CITY PARK
TRAILER PARK
SIXTH AVENUE
FIFTH AVENUE
FOURTH AVENUE
THIRD AVENUE
MAIN STREET
SECOND AVENUE
FIRST AVENUE
N
CITY OF
KEYSTONE
Stop Signs
Yield Signs
Not A Through street
5-2-96

ITEMIZED BREAKDOWN OF COST

ALL SIGNS ARE ENGINEER GRADE ALUMINUM.

SIGNS	QUANITY	PRICE EACH	SUBTOTAL
R1-1 30"x30"	3	21.85	65.55
R1-2 36"x36"x36"	9	16.45	148.05
W14-1A 30"x30"	2	26.35	52.70
POSTS			
14'x4"x4" TREATED	14	20.52	287.28
HARDWARE	14	.70	9.80
		TOTAL	563.38

Iowa Department of Transportation
Request for Traffic Safety Funds

GENERAL INFORMATION

Applicant: City or County of Page

Contact Person: James L. Christensen Title: Page County Engineer

Complete Mailing Address: 123 W. Washington St.
(Street Address and/or Box Number)

Clarinda (City) IA (State) 51632 (Zip) Daytime Phone: (712) 542-2510 (Area Code)

If more than one highway authority is involved in this project, please indicate the contact person, mailing address, and telephone number of the second highway authority.

Applicant: City or County of _____

Contact Person: _____ Title: _____

Complete Mailing Address: _____
(Street Address and/or Box Number)

_____ (City) _____ (State) _____ (Zip) Daytime Phone: _____ (Area Code)

PLEASE COMPLETE THE FOLLOWING PROJECT INFORMATION:

Nature of Application:
_____ Site Specific
X Traffic Control Device
_____ Safety Study

Funding: Total Cost of the Proposed Project $ 28,480.94

Safety Funds Requested for the Project $ 20,905.20

NARRATIVE

We have conducted a measurement of the retroreflectivity of each sign on the Page County Secondary Road System. Although the majority of the signs have adequate retroflectivity, there are a number of signs whose reflectivity value is low enough that replacement is justified. Our chevrons were installed in 1980 under the Chevron Alignment Sign Program and they are now 17 years old. Although reflectivity measurements on these signs give satisfactory readings, the yellow pigment in the facing has faded to a very pale, sometimes almost milky white color. We do not have an instrument for measuring sign coloration, but by visual observance, they are very visibly faded to a poor condition. The replacement of these signs would enhance the safety to the travelling public. For this project, the existing post and bolts could be re-used and the only items needed would be the replacement signs. We are requesting funding for the full amount of the purchase price of signs from Iowa Prison Industries. The local match provided by Page County would be the vehicle mileage and labor required to remove the old sign and replace it with the new sign, minus the salvage value of the old sign. All future maintenance of these signs would be the responsibility of Page County.

HIGHWAY AND TRANSPORTATION MAP

PAGE COUNTY

IOWA

Prepared By

Iowa Department of Transportation

Phone (515) 239-1282

In Cooperation With

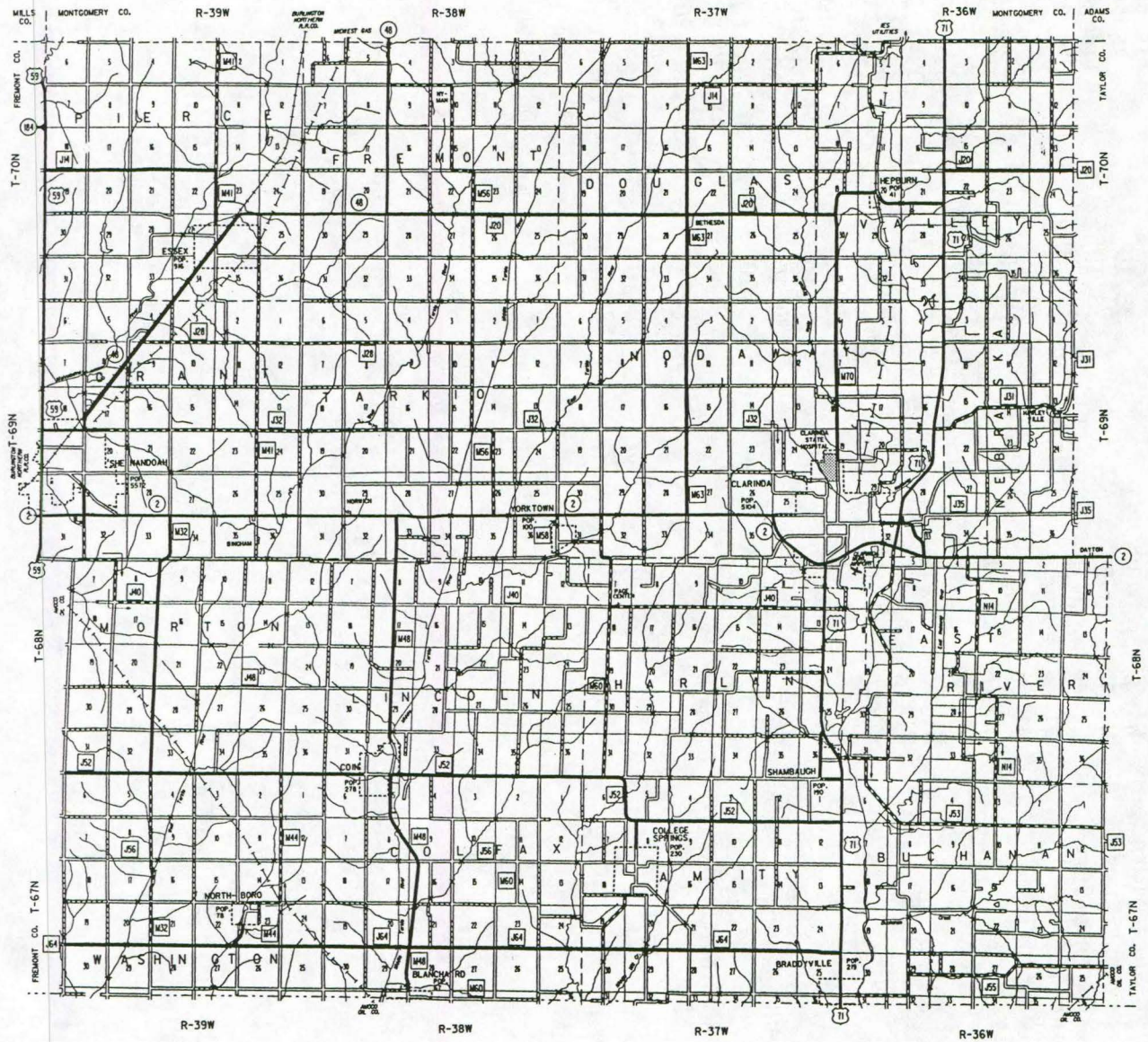
United States Department of Transportation

SCALE IN MILES

SCALE IN KILOMETERS

JANUARY 1, 1995

PRODUCED WITH CADD 07-26-95 CARTOGRAPHIC SECTION



LEGEND

DIVIDED HIGHWAY
PAVED ROAD
BITUMINOUS ROAD
GRAVEL ROAD
EARTH ROAD

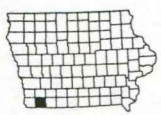
INTERSTATE HIGHWAY
UNITED STATES HIGHWAY
STATE HIGHWAY
COUNTY HIGHWAY

RAILROAD
PIPELINE
AIRPORT
HYDROLOGY
BRIDGE

STATE BOUNDARY
COUNTY BOUNDARY
CORPORATE LIMIT LINE
TOWNSHIP LINE
SECTION LINE

LOCATION MAP

The locations for this signing project are county wide.



ITEMIZED COSTS

Legend	MUTCD#	Size	Number	Unit Price	Price
Object Marker (left)	OM-3L	12x36	51	18.30	$ 933.30
Object Marker (right)	OM-3R	12x36	68	18.30	1,244.40
STOP	R1-1	30x30	51	31.55	1,609.05
ROAD CLOSED	R11-2	48x30	5	60.90	304.50
SPEED LIMIT	R2-1	24x30	7	30.45	213.15
SCHOOL BUS STOP AHEAD	S3-1	30x30	1	38.10	38.10
Left Turn	W1-1L	30x30	14	38.10	533.40
Right Turn	W1-1R	30x30	8	38.10	304.80
Left Curve	W1-2L	30x30	6	38.10	228.60
Right Curve	W1-2R	30x30	3	38.10	114.30
Right Reverse Turn	W1-3R	30x30	2	38.10	76.20
Left Reverse Curve	W1-4R	30x30	3	38.10	114.30
Right Reverse Curve	W1-4R	30x30	3	38.10	114.30
Winding Road	W1-5R	30x30	2	38.10	76.20
Single Arrow	W1-6	18x24	34	18.25	620.50
Double Arrow	W1-7	48x24	19	48.75	926.25
Speed Advisory Plate	W13-1	18x18	13	13.70	178.10
DEAD END	W14-1	30x30	3	38.10	114.30
NO PASSING ZONE	W14-3	48x36	15	31.55	473.25
Crossroad	W2-1	30x30	3	38.10	114.30
T-Intersection	W2-4	30x30	1	38.10	38.10
STOP AHEAD	W3-1	30x30	41	38.10	1,562.10
NARROW BRIDGE	W5-2	30x30	8	38.10	304.80
ONE LANE BRIDGE	W5-3	30x30	6	38.10	228.60
LEVEL B SERVICE	W14-7	36x18	39	27.50	1,072.50
CAUTION MINIMUM MAINT.	W14-6	30x30	29	38.10	1,104.90
ROCK ENDS	xx	30x30	3	38.10	114.30
SLOW	vv	30x30	6	38.10	228.60
Chevrons	W1-8	18x24	440	18.00	7,920.00
			884		$ 20,905.20

TOTAL MATERIALS

884 signs x 0.5 hour per sign x $12.13 per hour sign person wage x 1.413 fringe benefit factor = $7,575.74

MATERIALS	$ 20,905.20
LABOR	7,575.74
TOTAL	$ 28,480.94

D97-1/04