

Consent Agenda

May 10, 2022

MET IN REGULAR SESSION

The Board of Supervisors met in regular session at 10:00 A.M. All members present. Chairman Wichman presiding.

PLEDGE OF ALLEGIANCE

1. CONSENT AGENDA

After discussion was held by the Board, a motion was made by Shea, and second by Schultz, to approve:

- A. May 3, 2022, Minutes as read.
- B. April 2022 Vendor Publication Report.
- C. Thriving Families Alliance – Employment of Carrie Powders as Child & Family Resource Network Coordinator.
- D. Thriving Families Alliance – Employment of Erika Kirchhoff as part time CFRN Outreach Coordinator.

UNANIMOUS VOTE. Motion Carried.

2. SCHEDULED SESSIONS

John Rasmussen/Engineer appeared before the Board to discuss the Roads Operation Center with regards to the expenditures. Discussion only. No Action Taken.

John Rasmussen/Engineer appeared before the Board to discuss pipeline inspection requirement and consideration of consultant inspection for land restoration. Discussion only. No Action Taken.

Motion by Belt, second by Schultz, to approve and authorize Board to sign **Resolution No. 39-2022** authorizing Finance and Tax Officer, Becky Lenihan, to be appointed as Pottawattamie County’s Chief Financial Officer for DHS-FEMA programs.

RESOLUTION 39-2022

WHEREAS, Pottawattamie County receives Federal and State financial assistance from DHS-FEMA; and

WHEREAS, Pottawattamie County is required to update the authorized representative upon the change of Authorized Representative or Chief Finance Officer; and

WHEREAS, Becky Lenihan is the Finance and Tax Officer in the Pottawattamie County Auditor’s Office;

IT IS THEREFORE RESOLVED that Finance and Tax Officer, Becky Lenihan, shall be appointed as the Pottawattamie County’s Chief Financial Officer for DHS-FEMA programs.
Resolution adopted this 10TH day of May, 2022.

ROLL CALL VOTE

	AYE	NAY	ABSTAIN	ABSENT
_____	○	○	○	○
Tim Wichman, Chairman				
_____	○	○	○	○
Scott Belt				
_____	○	○	○	○
Lynn Grobe				
_____	○	○	○	○
Justin Schultz				
_____	○	○	○	○
Brian Shea				

ATTEST: _____

Melvyn Houser, County Auditor

Roll Call Vote: **AYES: Wichman, Belt, Grobe, Schultz, Shea. Motion Carried.**

Motion by Belt, second by Schultz, to approve and authorize Board Chairman to sign American Federation of State, County and Municipal Employees (AFSCME) Local 2364 Roads Employees Agreement, effective July 1, 2022, through June 30, 2025.

UNANIMOUS VOTE. Motion Carried.

Motion by Schultz, second by Shea, to approve and authorize Board Chairman to sign Memorandum of Understanding Between Pottawattamie County and the American Federation of State, County and Municipal Employees (AFSCME) Local 2364 Roads Employees Agreement, effective July 1, 2022, through June 30, 2025.

UNANIMOUS VOTE. Motion Carried.

Motion by Schultz, second by Shea, to approve and authorize Board Chairman to sign Pottawattamie County Communications and 911 Employee Association/AFSCME 2364-911 Union Labor Agreement, effective July 1, 2022, through June 30, 2025.

UNANIMOUS VOTE. Motion Carried.

Motion by Shea, second by Belt, to approve and authorize Board Chairman to sign Memorandum of Understanding Between Pottawattamie County and the American Federation of State, County and Municipal Employees (AFSCME) Local 2364-911 Agreement, effective July 1, 2022, through June 30, 2025.

UNANIMOUS VOTE. Motion Carried.

3. OTHER

After discussion was held by the Board, a motion was made by Shea, second by Schultz, to approve the Website Privacy, Legal & Linking Policy.

UNANIMOUS VOTE. Motion Carried.

After discussion was held by the Board, a motion was made by Shea, second by Belt, to approve the Acceptable Use Policy. This will be a new policy in the employee handbook.

UNANIMOUS VOTE. Motion Carried.

After discussion was held by the Board, a motion was made by Schultz, second by Shea, to approve Public Relations position.

Roll Call Vote: **AYES: Schultz, Shea, Belt. NAYS: Wichman, Grobe. Motion Carried.**

4. RECEIVED/FILED

A. Salary Action(s):

- 1) Conservation – Employment of Grace Kauffman as Natural Areas Management Intern – Hitchcock.

5. PUBLIC COMMENTS

Arlen Ullrich following up to Town Hall meetings on ARPA money, wants \$200 per month for citizens of the county 70 years of age or older who make \$35,000 per year or less. Money to be spent in 4 vouchers for #1 housing, #2 utilities, #3 medical and drugs and #4 food and gasoline for as long as the money lasts.

Shawna Anderson will present information from Town Hall ideas. 1. Help for Small Businesses 2.

Housing for Teachers.

6. BUDGET SESSION

Discussion only.

7. ADJOURN

Motion by Belt, second by Schultz, to adjourn meeting.

UNANIMOUS VOTE. Motion Carried.

THE BOARD ADJOURNED SUBJECT TO CALL AT 12:44 P. M.

Tim Wichman, Chairman

ATTEST: _____
Melvyn House, Auditor

APPROVED: May 17, 2022
PUBLISH: X

Scheduled Sessions

**Becky Lenihan/Tax and Finance Officer,
Auditor's Office**

Public Hearing on Pottawattamie County's amendment to current county budget for Fiscal Year 2021/22; and discussion and/or decision to approve and authorize Board to sign Resolution No. 40-2022, a Resolution to Approve Pottawattamie County's amendment to current county budget for FY 2021/22.

RESOLUTION NO. 40-2022

WHEREAS, there were necessary expenses incurred in several county departments, causing the budget of that department to exceed 100% of costs; and

WHEREAS, the Auditor, Secondary Roads, Board of Supervisors, and Nondepartmental have exceeded their Budget due to said necessary expenditures; and

WHEREAS, the Amendment to the Fiscal Year 2021/22 Budget for the Auditor, Secondary Roads, Board of Supervisors, and Nondepartmental shall be substantially as follows:

DEPT #	Revenue Amount	Expense Amount
Veteran Affairs -21		\$ 22,500
Total		\$ 22,500
Conservation - 22		333,081
Total		333,081
Public Health - 23	\$ 36,000	9,000
	\$ 20,503	20,503
Total	\$ 56,503	\$ 29,503
Planning - 53	\$ 354,140	247,466
Total	\$ 354,140	\$ 247,466
MHDS - 60	\$ 156,629	156,629
		750,000
Total	\$ 156,629	\$ 906,629
Non-Departmental - 99		20,000
Total		20,000
	\$ 567,272	\$ 1,559,179

WHEREAS, the Board of Supervisors desires to allow those expenditures, and no tax increase will occur due to these expenditures; and

WHEREAS, the public had due notice of the Budget Amendment Hearing held on May 17, 2022, and at the hearing, due time was allowed for objections to any and all portions of the amended budget.

NOW, THEREFORE BE IT RESOLVED, that the Board of Supervisors of Pottawattamie County, hereby amends the Fiscal Year 2021/22 budget.

Dated this 17th day of May, 2022.

ROLL CALL VOTE

	AYE	NAY	ABSTAIN	ABSENT
_____ Tim Wichman, Chairman	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
_____ Scott Belt	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
_____ Lynn Grobe	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
_____ Justin Schultz	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
_____ Brian Shea	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

ATTEST: _____
Melvyn J. Houser, County Auditor

FY 2020-2021 Pottawattamie County Budget Appropriations								
DEPT	DEPARTMENT	CERTIFIED	ORIGINAL	AMENDMENT	AMENDMENT	AMENDMENT	Original	DEPT
#	NAME	BUDGET 03/30/21	7/1/2021	9/21/2021	2/1/2022	5/17/2022	Budget	#
				Resolution 103-2021	Resolution 11-2022	Resolution 40-2022	With Amendments	
01	Board of Supervisors	11,664,965	11,664,965	13,420,644	5,323,249		30,408,858	01
02	Auditor	1,751,457	1,751,457	62,379			1,813,836	02
03	Treasurer	1,779,500	1,779,500				1,779,500	03
04	Attorney	3,480,303	3,480,303				3,480,303	04
05	Sheriff	9,971,291	9,971,291				9,971,291	05
06	Debt Service/Supervisors	3,016,600	3,016,600				3,016,600	06
07	Recorder	903,595	903,595				903,595	07
12	Medical Examiner	409,323	409,323		15,000		424,323	12
20	Secondary Roads	18,353,596	18,353,596	2,350,000			20,703,596	20
21	Veteran Affairs	507,149	507,149			22,500	529,649	21
22	Conservation	2,862,206	2,862,206			333,081	3,195,287	22
23	Physical Health & Education	1,043,774	1,043,774		855,790	29,503	1,929,067	23
24	General Assistance	235,791	235,791				235,791	24
25	DHS	439,300	439,300				439,300	25
27	Animal Control	176,846	176,846				176,846	27
29	Corrections-Jail	14,167,646	14,167,646				14,167,646	29
37	Communications-911	3,712,573	3,712,573				3,712,573	37
38	Environmental Health	693,685	693,685				693,685	38
40	Unemployment--HR	40,000	40,000				40,000	40
48	WIC	642,548	642,548				642,548	48
50	Human Resources	474,804	474,804				474,804	50
51	Building and Grounds	1,468,043	1,468,043				1,468,043	51
52	Information Services	2,248,595	2,248,595				2,248,595	52
53	Planning & Development	686,309	686,309		40,000	247,466	973,775	53
54	GIS	421,603	421,603				421,603	54
57	Promise Partners	402,709	402,709				402,709	57
58	CD Treatment Services	4,000	4,000				4,000	58
59	Case Management	0	0				0	59
60	Mental Health	2,175,518	2,175,518			906,629	3,082,147	60
99	Non Departmental	10,560,450	10,560,450	20,953,618		20,000	31,534,068	99
	TOTAL	94,294,179	94,294,179	36,786,641	6,234,039	1,559,179	138,874,038	

21-22 Amend Breakdown for Reso

DEPT #	Revenue Amount	Expense Amount
Veteran Affairs -21		\$ 22,500
Total		\$ 22,500
Conservation - 22		333,081
Total		333,081
Public Health - 23	\$ 36,000	9,000
	\$ 20,503	20,503
Total	\$ 56,503	\$ 29,503
Planning - 53	\$ 354,140	247,466
Total	\$ 354,140	\$ 247,466
MHDS - 60	\$ 156,629	156,629
		750,000
Total	\$ 156,629	\$ 906,629
Non-Departmental - 99		20,000
Total		20,000
	\$ 567,272	\$ 1,559,179

Grant Anderson/MAPA

**Discussion and/or decision to approve
Cornerstone Commercial Contractors pay
application no. 11 for Carson/Macedonia
downtown rehab.**

Attach supporting documentation to the back of this form

STATE OF IOWA

GAX

BUDGET FY 2022		General Accounting Expenditure								DOCUMENT NUMBER 1						
		DATE				ACCTG PERIOD (mm/yy) 05/2022										
VENDOR CODE						AGENCY NAME										
VENDOR NAME AND ADDRESS Pottawattamie County 227 South 6th Street Council Bluffs, IA 51501						BILL TO ADDRESS (ORDERING AGENCY) Iowa Economic Development Authority 1963 Bell Avenue, Suite 200 Des Moines, Iowa 50315				SHIP TO ADDRESS						
TERMS		FOB		ORDER APPROVED BY						GOODS RECEIVED/SERVICES PERFORMED						
										DATE		INITIALS				
QUANTITY		VENDOR'S INVOICE NUMBER														
ORDERED	RECEIVED	UNIT OF MEASURE							UNIT PRICE	TOTAL PRICE						
			Request for CDBG-DTR Funds Contract Number: 18-DTR-004													
			18-DTR-004-116													
			Cornerstone Commercial Contractors pay application no. 11							29,499.00						
			18-DTR-004-181													
DOCUMENT TOTAL									\$ 29,499.00							
CLAIMANT'S CERTIFICATION						AGENCY CERTIFICATION										
I CERTIFY THAT THE ITEMS FOR WHICH PAYMENT IS CLAIMED WERE FURNISHED FOR STATE BUSINESS UNDER THE AUTHORITY OF THE LAW AND THAT THE CHARGES ARE REASONABLE, PROPER, AND CORRECT, AND NO PART OF THIS CLAIM HAS BEEN PAID.						I CERTIFY THAT THE ABOVE EXPENSE WERE INCURRED AND THE AMOUNTS ARE CORRECT AND SHOULD BE PAID FROM THE FUNDS APPROPRIATED BY:										
DATE		5/17/2022		TITLE		Chair, Pottawattamie Co BOS				CODE OR CHAPTER SECTION(S)						
CLAIMANT'S SIGNATURE						AUTHORIZED SIGNATURE										
THE FOLLOWING FIELDS ARE FOR STATE ACCOUNTING USE ONLY																
DOC TYPE (GAX) GAX	DOC NUMBER 1		DOC DATE	ACCTG PRD	BUDGET FY 22	ACTION NEW/MOD	PO SHIP INSTR	GAX TYPE	INT IND	INT SELLER FUND	INT SELLER AGCY					
VENDOR CODE 2130029		ADDR OVERRIDE	F/A INDICATOR	EFT IND	TEXT -po's only (Y/N)	TEXT (po's only)										
REF DOC TYPE		REF DOC NUMBER		REF DOC LINE	COM LN	VEND INVOICE #	COMMODITY CODE		GS CONTRACT							
LINE	FUND	AGCY	ORG	SUB ORG	ACTV	FUNC	OBJT	SUB OBJT	JOB NUMBER	REP CAT	QUANTITY / UNITS	I/D	DESCRIPTION	AMOUNT	I/D	P/F
01	0001	269	5000				4125							\$ 29,499.00		
02																
03																
04																
05																
06																
07																
DOCUMENT TOTAL												\$ 29,499.00				

GAX

WARRANT #

AUDITED BY

PAID DATE

PAYMENT APPLICATION

TO: Pottawattamie County, Iowa 227 South 6th St Council Bluffs, IA 51501	PROJECT NAME AND LOCATION: Carson Macedonia Façade CDBG Pottawattamie County, Iowa Façade Re various locations Macedonia, Iowa and Carson, Iowa	APPLICATION # 11 PERIOD THRU: 04/22/2022 PROJECT #s: Pott County Façade DATE OF CONTRACT: 03/10/2021
FROM: Cornerstone Commercial Contractors, Inc. 401 7th St Corning, Iowa 50841	ARCHITECT: The Franks Design Group 410 First Street Glenwood, Iowa 51534	Distribution to: <input type="checkbox"/> OWNER <input type="checkbox"/> ARCHITECT <input type="checkbox"/> CONTRACTOR <input type="checkbox"/> <input type="checkbox"/>
FOR: façade rehabilitation		

CONTRACTOR'S SUMMARY OF WORK

Application is made for payment as shown below.
Continuation Page is attached.

1. CONTRACT AMOUNT	<u>\$464,670.00</u>
2. SUM OF ALL CHANGE ORDERS	<u>\$139,038.00</u>
3. CURRENT CONTRACT AMOUNT (Line 1 +/- 2)	<u>\$603,708.00</u>
4. TOTAL COMPLETED AND STORED (Column G on Continuation Page)	<u>\$558,877.55</u>
5. RETAINAGE:	
a. 5.00% of Completed Work (Columns D + E on Continuation Page)	<u>\$27,039.33</u>
b. 5.00% of Material Stored (Column F on Continuation Page)	<u>\$904.55</u>
Total Retainage (Line 5a + 5b or Column I on Continuation Page)	<u>\$27,943.88</u>
6. TOTAL COMPLETED AND STORED LESS RETAINAGE (Line 4 minus Line 5 Total)	<u>\$530,933.67</u>
7. LESS PREVIOUS PAYMENT APPLICATIONS	<u>\$480,073.05</u>
8. PAYMENT DUE	\$50,860.62
9. BALANCE TO COMPLETION (Line 3 minus Line 6)	<u>\$72,774.33</u>

SUMMARY OF CHANGE ORDERS	ADDITIONS	DEDUCTIONS
Total changes approved in previous months	\$152,033.00	(\$49,998.00)
Total approved this month	\$37,003.00	\$0.00
TOTALS	\$189,036.00	(\$49,998.00)
NET CHANGES	\$139,038.00	


Contractor's signature below is his assurance to Owner, concerning the payment herein applied for, that: (1) the Work has been performed as required in the Contract Documents, (2) all sums previously paid to Contractor under the Contract have been used to pay Contractor's costs for labor, materials and other obligations under the Contract for Work previously paid for, and (3) Contractor is legally entitled to this payment.

CONTRACTOR: Cornerstone Commercial Contractors, Inc.

By: _____ Date: _____
 Jason Kentner, owner

State of: Iowa
 County of: Adams

Subscribed and sworn to before
 me this 22nd day of April 2022


 Jason Kentner
 Digitally signed by Jason Kentner
 Date: 2022.04.22 13:50:27 -05'00'


Notary Public: Jaime Johnston
 My Commission Expires: 01-19-2025

ARCHITECT'S CERTIFICATION

Architect's signature below is his assurance to Owner, concerning the payment herein applied for, that: (1) Architect has inspected the Work represented by this Application, (2) such Work has been completed to the extent indicated in this Application, and the quality of workmanship and materials conforms with the Contract Documents, (3) this Application for Payment accurately states the amount of Work completed and payment due therefor, and (4) Architect knows of no reason why payment should not be made.

CERTIFIED AMOUNT..... \$50,860.62

(If the certified amount is different from the payment due, you should attach an explanation. Initial all the figures that are changed to match the certified amount.)

ARCHITECT:  Peter G. Franks, AIA, NCARB

By: _____ Date: 5/2/2022

Neither this Application nor payment applied for herein is assignable or negotiable. Payment shall be made only to Contractor, and is without prejudice to any rights of Owner or Contractor under the Contract Documents or otherwise.

PROJECT: Carson Macedonia Façade APPLICATION #: 11
 CDBG Pottawattamie County, Iowa Façade DATE OF APPLICATION: 04/22/2022
 Rehab Project-Macedonia and Carson, Iowa PERIOD THRU: 04/22/2022
 Payment Application containing Contractor's signature is attached. PROJECT #s: Pott County Façade

A ITEM #	B WORK DESCRIPTION	C SCHEDULED AMOUNT	D COMPLETED WORK		F STORED MATERIALS (NOT IN D OR E)	G		H BALANCE TO COMPLETION (C-G)	I RETAINAGE (If Variable)
			AMOUNT PREVIOUS PERIODS	AMOUNT THIS PERIOD		TOTAL COMPLETED AND STORED (D + E + F)	% COMP. (G / C)		
4b	Carpentry	\$3,500.00	\$700.00	\$0.00	\$0.00	\$700.00	20%	\$2,800.00	
4c	Paint	\$4,739.00	\$3,554.25	\$0.00	\$0.00	\$3,554.25	75%	\$1,184.75	
4d	Storm windows	\$2,700.00	\$0.00	\$0.00	\$2,700.00	\$2,700.00	100%	\$0.00	
4e	Misc materials	\$1,000.00	\$500.00	\$0.00	\$0.00	\$500.00	50%	\$500.00	
4f	Performance bond	\$1,000.00	\$1,000.00	\$0.00	\$0.00	\$1,000.00	100%	\$0.00	
4g	General conditons, overhead and	\$4,847.00	\$3,877.60	\$0.00	\$0.00	\$3,877.60	80%	\$969.40	
4h	CO #1 change to combination	\$1,523.00	\$0.00	\$0.00	\$1,523.00	\$1,523.00	100%	\$0.00	
5	312 Building 312 Main St	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00		\$0.00	
5a	Masonry	\$13,680.00	\$13,680.00	\$0.00	\$0.00	\$13,680.00	100%	\$0.00	
5b	Carpentry	\$3,500.00	\$700.00	\$0.00	\$0.00	\$700.00	20%	\$2,800.00	
5c	Paint	\$4,739.00	\$1,658.65	\$0.00	\$0.00	\$1,658.65	35%	\$3,080.35	
5d	Storm windows	\$2,700.00	\$0.00	\$0.00	\$2,700.00	\$2,700.00	100%	\$0.00	
5e	Glazing	\$400.00	\$0.00	\$0.00	\$0.00	\$0.00	0%	\$400.00	
5f	Misc materials	\$1,000.00	\$500.00	\$0.00	\$0.00	\$500.00	50%	\$500.00	
5g	Performance bond	\$1,000.00	\$1,000.00	\$0.00	\$0.00	\$1,000.00	100%	\$0.00	
5h	General conditons, overhead and	\$5,935.00	\$3,857.75	\$0.00	\$0.00	\$3,857.75	65%	\$2,077.25	
5i	CO #1 change to combination	\$1,523.00	\$0.00	\$0.00	\$1,523.00	\$1,523.00	100%	\$0.00	
6	Treynor State Bank 310 Main St	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00		\$0.00	
6a	Masonry	\$9,240.00	\$9,240.00	\$0.00	\$0.00	\$9,240.00	100%	\$0.00	
6b	Carpentry	\$500.00	\$500.00	\$0.00	\$0.00	\$500.00	100%	\$0.00	
6c	Paint	\$2,719.00	\$2,719.00	\$0.00	\$0.00	\$2,719.00	100%	\$0.00	
6d	Misc materials	\$1,000.00	\$1,000.00	\$0.00	\$0.00	\$1,000.00	100%	\$0.00	
6e	Performance bond	\$1,000.00	\$1,000.00	\$0.00	\$0.00	\$1,000.00	100%	\$0.00	
6f	General conditons, overhead and	\$3,423.00	\$3,423.00	\$0.00	\$0.00	\$3,423.00	100%	\$0.00	
7	Stempl Bird Museum 311 Main St	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00		\$0.00	
7a	Masonry	\$6,800.00	\$6,800.00	\$0.00	\$0.00	\$6,800.00	100%	\$0.00	
7b	Window rehab	\$600.00	\$600.00	\$0.00	\$0.00	\$600.00	100%	\$0.00	
7c	Door rehab	\$900.00	\$900.00	\$0.00	\$0.00	\$900.00	100%	\$0.00	
7d	Paint	\$1,241.00	\$1,241.00	\$0.00	\$0.00	\$1,241.00	100%	\$0.00	
	SUB-TOTALS	\$171,700.00	\$146,838.65	\$0.00	\$8,446.00	\$155,284.65	90%	\$16,415.35	

CONTINUATION PAGE

PROJECT: Carson Macedonia Façade APPLICATION #: 11
 CDBG Pottawattamie County, Iowa Façade DATE OF APPLICATION: 04/22/2022
 Rehab Project-Macedonia and Carson, Iowa PERIOD THRU: 04/22/2022
 Payment Application containing Contractor's signature is attached. PROJECT #s: Pott County Façade

ITEM #	WORK DESCRIPTION	SCHEDULED AMOUNT	COMPLETED WORK		STORED MATERIALS (NOT IN D OR E)	TOTAL COMPLETED AND STORED (D + E + F)	% COMP. (G / C)	BALANCE TO COMPLETION (C-G)	RETAINAGE (If Variable)
			AMOUNT PREVIOUS PERIODS	AMOUNT THIS PERIOD					
7e	Carpentry	\$500.00	\$500.00	\$0.00	\$0.00	\$500.00	100%	\$0.00	
7f	Misc materials	\$1,000.00	\$1,000.00	\$0.00	\$0.00	\$1,000.00	100%	\$0.00	
7g	Performance bond	\$1,000.00	\$1,000.00	\$0.00	\$0.00	\$1,000.00	100%	\$0.00	
7h	General conditons, overhead and	\$2,940.00	\$2,940.00	\$0.00	\$0.00	\$2,940.00	100%	\$0.00	
8	The Barn 106-110 Broadway St	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00		\$0.00	
8a	Masonry	\$20,934.00	\$20,934.00	\$0.00	\$0.00	\$20,934.00	100%	\$0.00	
8b	Carpentry	\$7,500.00	\$7,500.00	\$0.00	\$0.00	\$7,500.00	100%	\$0.00	
8c	Aluminum storefront/door	\$12,000.00	\$12,000.00	\$0.00	\$0.00	\$12,000.00	100%	\$0.00	
8d	Paint	\$1,419.00	\$1,419.00	\$0.00	\$0.00	\$1,419.00	100%	\$0.00	
8e	Misc materials	\$1,000.00	\$1,000.00	\$0.00	\$0.00	\$1,000.00	100%	\$0.00	
8f	Performance bond	\$1,000.00	\$1,000.00	\$0.00	\$0.00	\$1,000.00	100%	\$0.00	
8g	General conditons, overhead and	\$9,302.00	\$9,302.00	\$0.00	\$0.00	\$9,302.00	100%	\$0.00	
8h	Alternate #1	\$2,804.00	\$2,804.00	\$0.00	\$0.00	\$2,804.00	100%	\$0.00	
8i	CO #1 prep and paint existing lap	\$924.00	\$924.00	\$0.00	\$0.00	\$924.00	100%	\$0.00	
8j	CO #1 new glass at return walls	\$3,229.00	\$3,229.00	\$0.00	\$0.00	\$3,229.00	100%	\$0.00	
9	124 Cenpro 124 Broadway St	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00		\$0.00	
9a	Masonry	\$13,080.00	\$13,080.00	\$0.00	\$0.00	\$13,080.00	100%	\$0.00	
9b	Aluminum storefront	\$10,329.00	\$10,329.00	\$0.00	\$0.00	\$10,329.00	100%	\$0.00	
9c	Carpentry	\$4,500.00	\$4,500.00	\$0.00	\$0.00	\$4,500.00	100%	\$0.00	
9d	Paint	\$1,164.00	\$1,164.00	\$0.00	\$0.00	\$1,164.00	100%	\$0.00	
9e	Misc materials	\$1,000.00	\$1,000.00	\$0.00	\$0.00	\$1,000.00	100%	\$0.00	
9f	Performance bond	\$1,000.00	\$1,000.00	\$0.00	\$0.00	\$1,000.00	100%	\$0.00	
9g	General conditons, overhead and	\$6,746.00	\$6,746.00	\$0.00	\$0.00	\$6,746.00	100%	\$0.00	
9h	CO #1 change to spandrel glass at	\$555.00	\$555.00	\$0.00	\$0.00	\$555.00	100%	\$0.00	
10	The Lodge 126 Broadway St	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00		\$0.00	
10a	Painting	\$1,779.00	\$0.00	\$0.00	\$0.00	\$0.00	0%	\$1,779.00	
10b	Misc materials	\$1,000.00	\$1,000.00	\$0.00	\$0.00	\$1,000.00	100%	\$0.00	
10c	Performance bond	\$1,000.00	\$1,000.00	\$0.00	\$0.00	\$1,000.00	100%	\$0.00	
10d	General conditons, overhead and	\$1,287.00	\$257.40	\$0.00	\$0.00	\$257.40	20%	\$1,029.60	
	SUB-TOTALS	\$280,692.00	\$253,022.05	\$0.00	\$8,446.00	\$261,468.05	93%	\$19,223.95	

CONTINUATION PAGE

PROJECT: Carson Macedonia Façade APPLICATION #: 11
 CDBG Pottawattamie County, Iowa Façade DATE OF APPLICATION: 04/22/2022
 Rehab Project-Macedonia and Carson, Iowa PERIOD THRU: 04/22/2022
 Payment Application containing Contractor's signature is attached. PROJECT #s: Pott County Façade

A ITEM #	B WORK DESCRIPTION	C SCHEDULED AMOUNT	D COMPLETED WORK		F STORED MATERIALS (NOT IN D OR E)	G TOTAL COMPLETED AND STORED (D + E + F)	H % COMP. (G / C)	I BALANCE TO COMPLETION (C-G)	RETAINAGE (If Variable)
			AMOUNT PREVIOUS PERIODS	AMOUNT THIS PERIOD					
1	The Painted Camel 320 Main St	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00		\$0.00	
1a	Carpentry	\$4,500.00	\$4,500.00	\$0.00	\$0.00	\$4,500.00	100%	\$0.00	
1b	Aluminum storefront	\$8,952.00	\$8,952.00	\$0.00	\$0.00	\$8,952.00	100%	\$0.00	
1c	Paint	\$2,694.00	\$2,694.00	\$0.00	\$0.00	\$2,694.00	100%	\$0.00	
1d	Misc materials	\$1,000.00	\$1,000.00	\$0.00	\$0.00	\$1,000.00	100%	\$0.00	
1e	Performance bond	\$1,000.00	\$1,000.00	\$0.00	\$0.00	\$1,000.00	100%	\$0.00	
1f	General conditions, overhead and	\$4,161.00	\$4,161.00	\$0.00	\$0.00	\$4,161.00	100%	\$0.00	
1g	Allowance #1	\$8,000.00	\$8,000.00	\$0.00	\$0.00	\$8,000.00	100%	\$0.00	
1h	CO #1 additional carpentry at	\$1,711.00	\$1,711.00	\$0.00	\$0.00	\$1,711.00	100%	\$0.00	
2	Pioneer Trail Museum Annex 318	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00		\$0.00	
2a	Masonry	\$5,882.00	\$5,882.00	\$0.00	\$0.00	\$5,882.00	100%	\$0.00	
2b	Carpentry	\$3,500.00	\$3,500.00	\$0.00	\$0.00	\$3,500.00	100%	\$0.00	
2c	Aluminum storefront	\$8,200.00	\$8,200.00	\$0.00	\$0.00	\$8,200.00	100%	\$0.00	
2d	Paint	\$2,679.00	\$2,679.00	\$0.00	\$0.00	\$2,679.00	100%	\$0.00	
2e	Misc materials	\$1,000.00	\$1,000.00	\$0.00	\$0.00	\$1,000.00	100%	\$0.00	
2f	Performance bond	\$1,000.00	\$1,000.00	\$0.00	\$0.00	\$1,000.00	100%	\$0.00	
2g	General conditions, overhead and	\$4,984.00	\$4,984.00	\$0.00	\$0.00	\$4,984.00	100%	\$0.00	
2h	CO #1 replace rotten wood	\$682.00	\$682.00	\$0.00	\$0.00	\$682.00	100%	\$0.00	
2i	CO #1 add cornice to building	\$10,518.00	\$8,414.40	\$0.00	\$0.00	\$8,414.40	80%	\$2,103.60	
3	Pioneer Trail Museum Storage	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00		\$0.00	
3a	Carpentry	\$2,000.00	\$2,000.00	\$0.00	\$0.00	\$2,000.00	100%	\$0.00	
3b	Paint	\$3,579.00	\$3,579.00	\$0.00	\$0.00	\$3,579.00	100%	\$0.00	
3c	Door Rehab	\$900.00	\$900.00	\$0.00	\$0.00	\$900.00	100%	\$0.00	
3d	Misc materials	\$1,000.00	\$1,000.00	\$0.00	\$0.00	\$1,000.00	100%	\$0.00	
3e	Performance bond	\$1,000.00	\$1,000.00	\$0.00	\$0.00	\$1,000.00	100%	\$0.00	
3f	General conditions, overhead and	\$2,227.00	\$2,227.00	\$0.00	\$0.00	\$2,227.00	100%	\$0.00	
3g	CO #1 replace rotten wood	\$682.00	\$682.00	\$0.00	\$0.00	\$682.00	100%	\$0.00	
4	314 Bulding 314 Main St	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00		\$0.00	
4a	Masonry	\$8,640.00	\$8,640.00	\$0.00	\$0.00	\$8,640.00	100%	\$0.00	
	SUB-TOTALS	\$90,491.00	\$88,387.40	\$0.00	\$0.00	\$88,387.40	98%	\$2,103.60	

CONTINUATION PAGE

PROJECT: Carson Macedonia Façade APPLICATION #: 11
 CDBG Pottawattamie County, Iowa Façade DATE OF APPLICATION: 04/22/2022
 Rehab Project-Macedonia and Carson, Iowa PERIOD THRU: 04/22/2022
 PROJECT #s: Pott County Façade

Payment Application containing Contractor's signature is attached.

A ITEM #	B WORK DESCRIPTION	C SCHEDULED AMOUNT	D COMPLETED WORK		F STORED MATERIALS (NOT IN D OR E)	G TOTAL COMPLETED AND STORED (D + E + F)		H BALANCE TO COMPLETION (C-G)	I RETAINAGE (If Variable)
			AMOUNT PREVIOUS PERIODS	AMOUNT THIS PERIOD		% COMP. (G / C)			
10e	Allowance #2	\$46,500.00	\$46,500.00	\$0.00	\$0.00	\$46,500.00	100%	\$0.00	
10f	Allowance #3	\$3,650.00	\$3,650.00	\$0.00	\$0.00	\$3,650.00	100%	\$0.00	
10g	Alternate #2	\$3,800.00	\$3,800.00	\$0.00	\$0.00	\$3,800.00	100%	\$0.00	
10h	CO #1 structural issues remove	\$126,835.00	\$95,126.25	\$12,683.50	\$0.00	\$107,809.75	85%	\$19,025.25	
10i	CO #2 winter conditions	\$7,500.00	\$0.00	\$7,500.00	\$0.00	\$7,500.00	100%	\$0.00	
10j	CO #2 COR 15, 16, 17 additional	\$22,840.00	\$0.00	\$22,840.00	\$0.00	\$22,840.00	100%	\$0.00	
11	126 Building East 126 Broadway	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00		\$0.00	
11a	Masonry	\$48,960.00	\$48,960.00	\$0.00	\$0.00	\$48,960.00	100%	\$0.00	
11b	Carpentry	\$3,750.00	\$2,812.50	\$0.00	\$0.00	\$2,812.50	75%	\$937.50	
11c	Paint	\$1,619.00	\$1,619.00	\$0.00	\$0.00	\$1,619.00	100%	\$0.00	
11d	Wood windows	\$9,645.00	\$0.00	\$0.00	\$9,645.00	\$9,645.00	100%	\$0.00	
11e	Wood door	\$3,426.00	\$0.00	\$0.00	\$0.00	\$0.00	0%	\$3,426.00	
11f	Door rehab	\$900.00	\$900.00	\$0.00	\$0.00	\$900.00	100%	\$0.00	
11g	Misc materials	\$1,000.00	\$1,000.00	\$0.00	\$0.00	\$1,000.00	100%	\$0.00	
11h	Performance Bond	\$1,000.00	\$1,000.00	\$0.00	\$0.00	\$1,000.00	100%	\$0.00	
11i	General conditons, overhead and	\$14,785.00	\$12,567.25	\$0.00	\$0.00	\$12,567.25	85%	\$2,217.75	
11j	CO #1 double hung windows in	\$3,851.00	\$0.00	\$3,851.00	\$0.00	\$3,851.00	100%	\$0.00	
12	US Bank 113 Broadway St	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00		\$0.00	
12a	Masonry	\$9,840.00	\$9,840.00	\$0.00	\$0.00	\$9,840.00	100%	\$0.00	
12b	Glass	\$1,000.00	\$1,000.00	\$0.00	\$0.00	\$1,000.00	100%	\$0.00	
12c	Misc materials	\$1,000.00	\$1,000.00	\$0.00	\$0.00	\$1,000.00	100%	\$0.00	
12d	Performance bond	\$1,000.00	\$1,000.00	\$0.00	\$0.00	\$1,000.00	100%	\$0.00	
12e	General conditons, overhead and	\$2,452.00	\$2,452.00	\$0.00	\$0.00	\$2,452.00	100%	\$0.00	
12f	CO #2 COR #14 new storefront	\$6,663.00	\$0.00	\$6,663.00	\$0.00	\$6,663.00	100%	\$0.00	
13	119 Building 119 Broadway St	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00		\$0.00	
13a	Masonry	\$16,200.00	\$16,200.00	\$0.00	\$0.00	\$16,200.00	100%	\$0.00	
13b	Aluminum storefront/door	\$12,400.00	\$12,400.00	\$0.00	\$0.00	\$12,400.00	100%	\$0.00	
13c	Carpentry	\$8,500.00	\$8,500.00	\$0.00	\$0.00	\$8,500.00	100%	\$0.00	
13d	Paint	\$3,199.00	\$3,199.00	\$0.00	\$0.00	\$3,199.00	100%	\$0.00	
	SUB-TOTALS	\$643,007.00	\$526,548.05	\$53,537.50	\$18,091.00	\$598,176.55	93%	\$44,830.45	

CONTINUATION PAGE

PROJECT: Carson Macedonia Façade
 CDBG Pottawattamie County, Iowa Façade
 Rehab Project-Macedonia and Carson, Iowa

APPLICATION #: 11
 DATE OF APPLICATION: 04/22/2022
 PERIOD THRU: 04/22/2022
 PROJECT #s: Pott County Façade

Payment Application containing Contractor's signature is attached.

A ITEM #	B WORK DESCRIPTION	C SCHEDULED AMOUNT	D COMPLETED WORK		F STORED MATERIALS (NOT IN D OR E)	G TOTAL COMPLETED AND STORED (D + E + F)		H BALANCE TO COMPLETION (C-G)	I RETAINAGE (If Variable)
			D AMOUNT PREVIOUS PERIODS	E AMOUNT THIS PERIOD		G %	G COMP. (G / C)		
13e	Misc materials	\$1,000.00	\$1,000.00	\$0.00	\$0.00	\$1,000.00	100%	\$0.00	
13f	Performance bond	\$1,000.00	\$1,000.00	\$0.00	\$0.00	\$1,000.00	100%	\$0.00	
13g	General conditons, overhead and	\$8,699.00	\$8,699.00	\$0.00	\$0.00	\$8,699.00	100%	\$0.00	
13h	CO #1 remove building from	(\$49,998.00)	(\$49,998.00)	\$0.00	\$0.00	(\$49,998.00)	100%	\$0.00	
TOTALS		\$603,708.00	\$487,249.05	\$53,537.50	\$18,091.00	\$558,877.55	93%	\$44,830.45	

**Carson-Macedonia Downtown Storefront Rehabilitation
Project Funds and Costs
(Current through 05/11/2022)**

Current Obligations by Activity

Activity	Total	Carson	Macedonia
Construction	\$ 603,708.00	\$ 422,596.00	\$ 181,112.00
Architecture	\$ 135,000.00	\$ 67,500.00	\$ 67,500.00
Asbestos Inspections	\$ 2,350.00	\$ 2,350.00	\$ -
Environmental Testing	\$ 20,040.00	\$ 13,226.00	\$ 6,814.00
TOTAL	\$ 761,098.00	\$ 505,672.00	\$ 255,426.00

Costs to Date by Activity

Activity	Total	Carson	Macedonia
Construction	\$ 530,933.67	\$ 373,199.92	\$ 157,733.75
Architecture	\$ 93,096.06	\$ 46,548.03	\$ 46,548.03
Asbestos Inspections	\$ 2,350.00	\$ 2,350.00	\$ -
Environmental Testing	\$ -	\$ -	\$ -
TOTAL	\$ 626,379.73	\$ 422,097.95	\$ 204,281.78

Remaining Costs by Activity

Activity	Total	Carson	Macedonia
Construction	\$ 72,774.33	\$ 49,396.08	\$ 23,378.25
Architecture	\$ 41,903.94	\$ 20,951.97	\$ 20,951.97
Asbestos Inspections	\$ -	\$ -	\$ -
Asbestos Abatement	\$ 20,040.00	\$ 13,226.00	\$ 6,814.00
TOTAL	\$ 134,718.27	\$ 83,574.05	\$ 51,144.22

Anticipated Funding Distribution of Remaining Expenditures

	Expenditures	CDBG	CITIES	Owners
Construction	\$ 72,774.33	\$ 2,892.85	\$ 29,837.48	\$ 40,044.00
Architecture	\$ 41,903.94	\$ 20,951.97	\$ 20,951.97	\$ -
Other	\$ 20,040.00	\$ 11,823.60	\$ 8,216.40	\$ -
TOTAL	\$ 134,718.27	\$ 35,668.42	\$ 59,005.85	\$ 40,044.00

Status of CDBG Disbursement Requests



[Menu](#) | [Help](#) | [Log Out](#)

[Back](#) | [Print](#) | [Add](#) | [Delete](#) | [Edit](#) | [Save](#)

Grant/Project Tracking

Grant/Project: 18-DTR-004 - Pottawattamie County - 2018

Status: Underway
Program Area: CDBG
Grantee Organization: Omaha-Council Bluffs Metropolitan Area Planning Agency
Program Officer: Ed Peter Basch
Awarded Amount: \$500,000.00
Last Site Visit: 01/31/2022

Claims

[Copy Existing Claim](#) | [Return to Components](#)

ID	Type	Status	Date Submitted	Date Paid	Date From-To	Claim Amount
18-DTR-004 - 001	Reimbursement	Paid	08/16/2019	10/01/2019	08/12/2019 - 08/12/2019	\$46,221.00
18-DTR-004 - 002	Reimbursement	Paid	07/24/2020	09/24/2020	07/24/2020 - 07/24/2020	\$44,623.00
18-DTR-004 - 003	Reimbursement	Paid	02/10/2021	07/12/2021	02/10/2021 - 02/10/2021	\$32,444.00
18-DTR-004 - 004	Reimbursement	Paid	07/15/2021	08/11/2021	07/15/2021 - 07/15/2021	\$33,576.00
18-DTR-004 - 005	Reimbursement	Paid	08/16/2021	09/16/2021	08/16/2021 - 08/16/2021	\$16,639.00
18-DTR-004 - 006	Reimbursement	Paid	10/07/2021	10/21/2021	10/06/2021 - 10/06/2021	\$46,044.00
18-DTR-004 - 007	Reimbursement	Paid	11/17/2021	01/07/2022	09/22/2021 - 10/31/2021	\$25,092.00
18-DTR-004 - 008	Reimbursement	Paid	12/16/2021	02/02/2022	12/16/2021 - 12/16/2021	\$22,739.00
18-DTR-004 - 009	Reimbursement	Paid	02/21/2022	03/17/2022	02/21/2022 - 02/21/2022	\$23,703.00
18-DTR-004 - 010	Reimbursement	Paid	03/03/2022	04/19/2022	03/02/2022 - 03/02/2022	\$8,204.00
18-DTR-004 - 011	Reimbursement	Paid	03/17/2022	04/19/2022	03/17/2022 - 03/17/2022	\$33,128.00
18-DTR-004 - 012	Reimbursement	Approved	04/14/2022		04/14/2022 - 04/14/2022	\$22,765.00
Submitted Amount						\$0.00
Approved Amount						\$22,765.00
Paid Total						\$332,413.00
Total						\$355,178.00

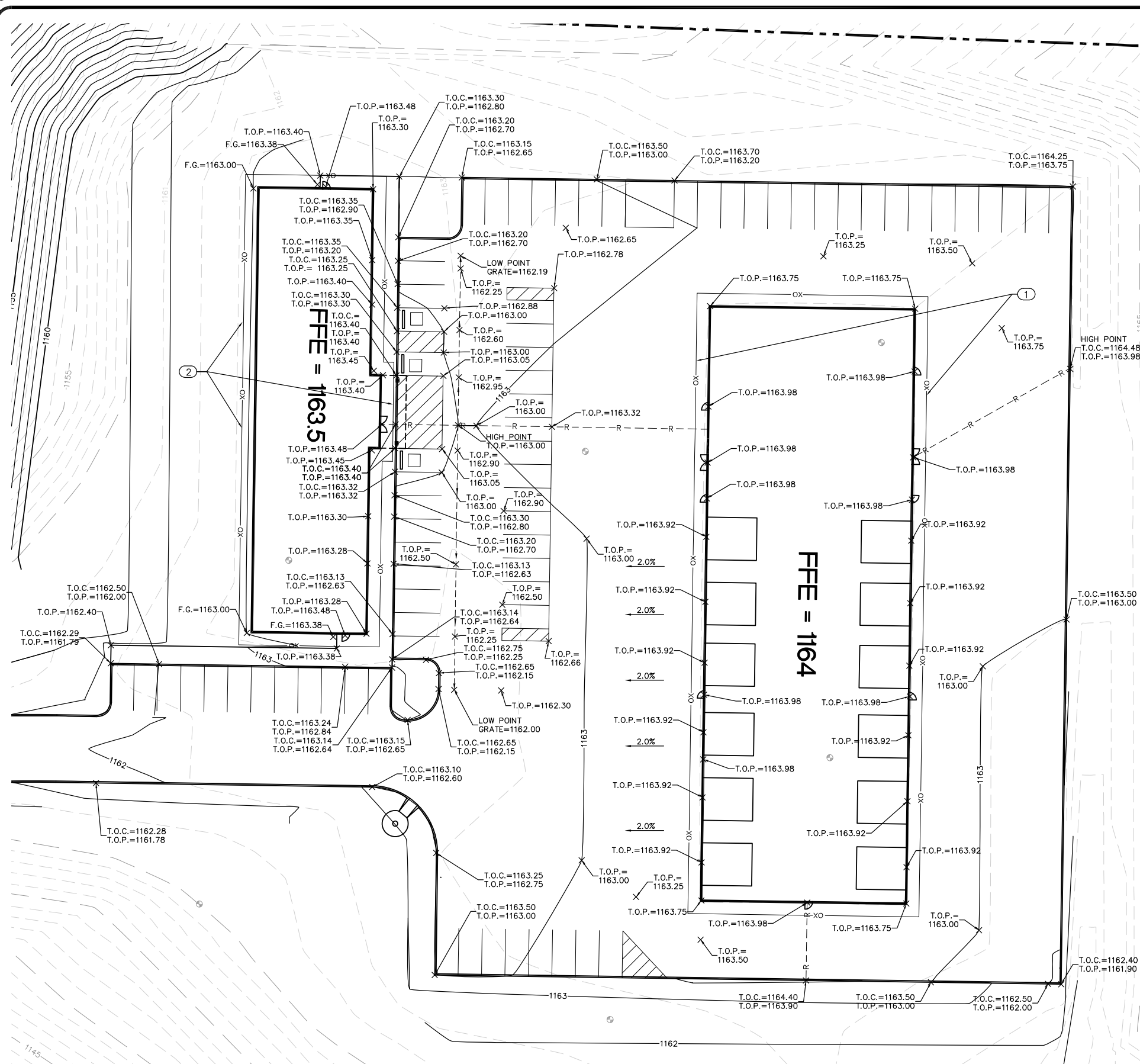
Last Edited By:

Note: The total CDBG award is \$500,000: \$470,000 is for project implementation and \$30,000 is for general admin.

John Rasmussen/Engineer

Discussion and/or decision to approve Value Engineering changes for the Roads Operations Center.

FILENAME: S:\Blue_Team\Projects\105120_POTT_CO_ENG_BUILDING\Engineering_Dwgs\105120 DESIGN 12-21.dwg
 DRAWN BY: Jns. SAVE DATE: Dec 22, 2021 3:09 PM DATE PLOTTED: 12/23/2021 8:53 AM, PLOT SCALE: 1:1



GENERAL GRADING NOTES

THE GENERAL CONTRACTOR AND/OR SUB-CONTRACTOR SHALL HAVE COMPLETE RESPONSIBILITY FOR DAMAGE CAUSED BY BLOWING DUST FROM HIS CONSTRUCTION ACTIVITIES.

TOPSOIL AND NON-WOODY VEGETATION SHALL BE STRIPPED TO A DEPTH OF 4" TO 6" IN AREAS TO BE GRADED. A GEOTECHNICAL ENGINEER REPRESENTATIVE SHALL OBSERVE STRIPPING OPERATIONS TO ENSURE ALL UNSUITABLE MATERIALS HAVE BEEN REMOVED. SITE STRIPPING, SUBGRADE PREPARATION AND COMPACTION PROCEDURES SHALL EXTEND A MINIMUM OF 5 FEET BEYOND THE PERIMETER OF THE BUILDING AND A MINIMUM OF 2 FEET BEYOND THE EDGE OF PROPOSED PAVEMENT.

TOPSOIL GENERATED FROM STRIPPING OPERATIONS SHALL BE STOCKPILED IN AN APPROVED LOCATION AND RE-Spread ON AREAS FINISH GRADED TO RECEIVE TOPSOIL.

RUBBLE AND WASTE MATERIALS FROM SITE CLEARING AND DEMOLITION SHALL BE REMOVED FROM THE SITE AND LAWFULLY DISPOSED, SALVAGED, OR RECYCLED. WHERE FENCE POSTS ARE REMOVED, THEIR CONCRETE BASES SHALL BE EXCAVATED AND COMPLETELY REMOVED. WASTE MATERIALS SHALL NOT BE BURIED ON SITE.

OSHA'S CONSTRUCTION STANDARDS FOR EXCAVATIONS REQUIRE THAT THE CONTRACTOR'S EXCAVATION ACTIVITIES FOLLOW CERTAIN WORKER SAFETY PROCEDURES. EXCAVATIONS OVER 4 FEET DEEP SHALL BE SLOPED BACK, SHORED, OR SHIELDED. THE MAXIMUM ALLOWABLE SLOPE FOR AN UNBRACED EXCAVATION IN THESE SOILS IS 1H:1V AND 1.5H:1V, RESPECTIVELY, ALTHOUGH OTHER PROVISIONS AND RESTRICTIONS APPLY. THE CONTRACTOR IS SOLELY RESPONSIBLE FOR SITE/EXCAVATION SAFETY AND COMPLIANCE WITH OSHA REGULATIONS.

EXISTING FILL SOILS WITHIN PROPOSED BUILDING FOOTPRINTS INCLUDING A 5-FOOT OFFSET OF THE PROPOSED BUILDING FOOTPRINT SHALL BE EXCAVATED TO A MINIMUM DEPTH OF 18 INCHES, BACKFILLED AND COMPACTED AS STRUCTURAL FILL.

ALL STRUCTURAL FILL AND BACKFILL SOILS SHALL BE LOW PLASTICITY, COHESIVE SOIL THAT ARE FREE OF ORGANIC MATERIAL OR DEBRIS. STRUCTURAL FILL/BACKFILL MATERIALS SHALL HAVE A LIQUID LIMIT LESS THAN 45 AND A PLASTICITY INDEX LESS THAN 20. EXCAVATED SITE SOILS WILL GENERALLY BE SUITABLE FOR USE AS STRUCTURAL FILL.

FILL COMPACTION REQUIREMENTS:
 SHALLOW FOUNDATIONS -
 BUILDING FOOTPRINTS SHALL BE EXCAVATED TO A DEPTH OF 3 FEET BELOW THE FOOTING ELEVATION. OVER-EXCAVATION SHALL EXTEND LATERALLY, 5 FEET OUTSIDE THE BUILDING FOOTPRINT. OVER-EXCAVATED SOILS MAY BE MOISTURE CONDITIONED AND RECOMPACTED AS STRUCTURAL FILL.

AREAS TO RECEIVE FILL SHALL BE SCARIFIED TO A MINIMUM DEPTH OF 6". FILL SHALL BE PLACED IN LIFTS NOT TO EXCEED 8" IN LOOSE THICKNESS. STRUCTURAL FILL SHALL BE COMPACTED TO A MINIMUM OF 95% OF THE MAXIMUM DRY DENSITY PER ASTM D-698 (STANDARD PROCTOR) AT A MOISTURE CONTENT BETWEEN 0% AND +4% OF OPTIMUM.

ALL OTHER LOCATIONS
 AREAS TO RECEIVE FILL SHALL BE SCARIFIED TO A MINIMUM DEPTH OF 6". FILL SHALL BE PLACED IN LIFTS NOT TO EXCEED 8" IN LOOSE THICKNESS. STRUCTURAL FILL SHALL BE COMPACTED TO A MINIMUM OF 95% OF THE MAXIMUM DRY DENSITY PER (ASTM D-698, STANDARD PROCTOR) AT A MOISTURE CONTENT BETWEEN 0% AND +4% OF OPTIMUM.

PCC PAVEMENTS: PREPARE SUBGRADE AS PER NOTES AND SPECIFICATIONS IDENTIFIED ON THE PAVING PLAN SHEET.

PCC SIDEWALKS: PREPARE SUBGRADE AS PER NOTES AND SPECIFICATIONS IDENTIFIED ON THE PAVING PLAN SHEET.

BACKFILL SOILS AROUND FOUNDATIONS, BASEMENT WALLS AND RETAINING WALLS SHALL BE COMPACTED TO A MINIMUM OF 95% OF THE MAXIMUM DRY DENSITY (PER ASTM D-698, STANDARD PROCTOR) AT A MOISTURE CONTENT BETWEEN -3% AND +4% OF OPTIMUM. FILL SHALL BE PLACED IN LOOSE LIFTS APPROPRIATE TO THE EQUIPMENT AND METHODS USED FOR COMPACTION. GRANULAR BACKFILL SHALL NOT BE USED AROUND FOUNDATION ELEMENTS.

BACKFILL SOILS IN UTILITY TRENCHES SHALL BE COMPACTED TO A MINIMUM OF 95% OF THE MAXIMUM DRY DENSITY AS PER ASTM D698 (STANDARD PROCTOR) AT A MOISTURE CONTENT BETWEEN 0% AND +4% OF OPTIMUM. FILL SHALL BE PLACED IN LOOSE LIFTS APPROPRIATE TO THE EQUIPMENT AND METHODS USED FOR COMPACTION. GRANULAR BACKFILL SHALL NOT BE USED IN EXTERIOR TRENCHES. A "TRENCH PLUG" SHALL BE CONSTRUCTED TO A DISTANCE 5 FEET FROM FACE OF BUILDING EXTERIORS. THE PLUG MATERIAL SHALL CONSIST OF A CLAY COMPACTED AT A WATER CONTENT AT OR ABOVE THE SOIL'S OPTIMUM WATER CONTENT. THE CLAY PLUG SHOULD BE PLACED TO COMPLETELY SURROUND THE UTILITY LINE AND COMPACTED AS DESCRIBED ABOVE.

IMPORTED FILL MATERIAL, IF REQUIRED, SHALL BE FREE OF ORGANIC MATTER AND DEBRIS, AND SHALL BE A CLEAN, INORGANIC SILT OR LEAN CLAY WITH A LIQUID LIMIT LESS THAN 45 AND A PLASTICITY INDEX LESS THAN 20. IMPORTED MATERIAL SHALL NOT CONTAIN ANY FOREIGN MATERIAL OR DEBRIS WITH A DIMENSION GREATER THAN 3".

ANY EXCESS MATERIAL SHALL BE DISPOSED OF AT AN OFF-SITE AT A LOCATION DETERMINED BY THE CONTRACTOR.

UNLESS OTHERWISE NOTED, ALL SPOT ELEVATIONS SHOWN ARE TOP OF CURB (T.O.C.), TOP OF SLAB (T.O.P.) OR FINISHED GRADE (F.G.). CONTOURS ARE TO TOP OF PAVEMENT.

THE SUBGRADE OF THE FLOOR SLAB SHALL BE REWORKED AND COMPACTED AS STRUCTURAL FILL PRIOR TO CONCRETE PLACEMENT. THE UPPER 6 INCHES OF BASE SOILS SHALL BE COMPACTED TO A MINIMUM OF 95% OF THE MAXIMUM DRY DENSITY AS PER ASTM D698 (STANDARD PROCTOR) AT A MOISTURE CONTENT BETWEEN -3% AND +4% OF OPTIMUM.

4 INCHES OF FREE DRAINING GRANULAR MATERIAL MAY BE PLACED AS AN AGGREGATE BASE ON TOP OF THE STRUCTURAL FILL AS A CONSTRUCTION CONVENIENCE, BUT IT IS NOT CONSIDERED CRITICAL TO PROPER SLAB PERFORMANCE. A 10 MIL VAPOR RETARDER IS RECOMMENDED BENEATH THE CONCRETE TO INHIBIT THE UPWARD MIGRATION OF MOISTURE THROUGH THE SLAB.

IF UNSTABLE SOILS ARE ENCOUNTERED IN THE BOTTOM OF SHALLOW FOUNDATIONS OR SUBGRADE AREAS, THE CONTRACTOR SHALL IMPLEMENT OVER-EXCAVATION AND BACKFILL PRACTICES WITH A MORE SUITABLE MATERIAL. THE CONTRACTOR SHALL CONTACT THE GEOTECHNICAL ENGINEER TO IDENTIFY LIMITS AND DEPTHS OF OVER-EXCAVATION.

EXPOSED PROJECT SITE SOILS SHALL BE STABILIZED AS SHOWN IN THE STORM WATER POLLUTION PREVENTION PLAN AND LANDSCAPING PLAN.

THE RECOMMENDATIONS OF THE GEOTECHNICAL REPORT SHALL CONTROL IN ALL INSTANCES WHERE SUBGRADE PREPARATION, BACKFILL AND COMPACTION ARE CONCERNED. PLEASE REFERENCE "GEOTECHNICAL EXPLORATION REPORT, COUNCIL BLUFFS AIRPORT MAINTENANCE FACILITY, EASTERN HILLS DRIVE AND MCPHERSON AVENUE, COUNCIL BLUFFS, IOWA," PREPARED BY THIELE GEOTECH INC. AND DATED JULY 27, 2020. THIELE GEOTECH PROJECT NUMBER: 20235.00.

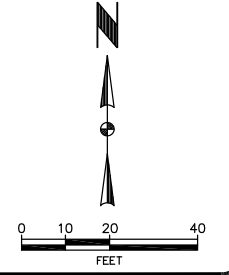
SURFACE WATER SHALL NOT BE ALLOWED TO POND ON THE SITE OR SOAK INTO THE SOILS OUTSIDE OF DESIGNATED STORMWATER AREAS. CONSTRUCTION STAGING SHOULD PROVIDE FOR THE DRAINAGE OF SURFACE WATER AWAY FROM THE BUILDING AND PAVEMENT AREAS. UPON COMPLETION OF FILLING AND GRADING OPERATIONS, CARE SHOULD BE TAKEN TO MAINTAIN SUBGRADE MOISTURE CONTENT PRIOR TO CONSTRUCTION OF PAVEMENTS.

(X) REFERENCE NOTE

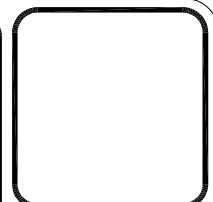
- OVER-EXCAVATE TO ELEVATION 1157.0. BACKFILL AS STRUCTURAL FILL.
- OVER-EXCAVATE TO ELEVATION 1156.5. BACKFILL AS STRUCTURAL FILL.

LEGEND

- T.O.P. - TOP OF PAVEMENT ELEVATION
- T.O.C. - TOP OF CURB ELEVATION
- F.G. - FINISHED GRADE ELEVATION
- R- - RIDGE LINE
- - - - - CONSTRUCTED SWALE IN PAVEMENT
- OX - OVER-EXCAVATION LIMITS



1 GRADING PLAN
 SCALE: 1" = 20'



for use on this project in this drawing is being made except in accordance with the terms of the contract for the above agreement, hgm associates inc. this drawing or any part thereof assumes no liability for any use of

INS	drawn	date
PJG	designed	12-22-21
PJG	approved	12-22-21

project Pottawattamie County - ROC - Vehicle Maintenance Building
 101 Ingenuum Way, Council Bluffs, IA
 client Pottawattamie County Roads Department
 sheet GRADING PLAN

project no. 107420
 sheet C1.1

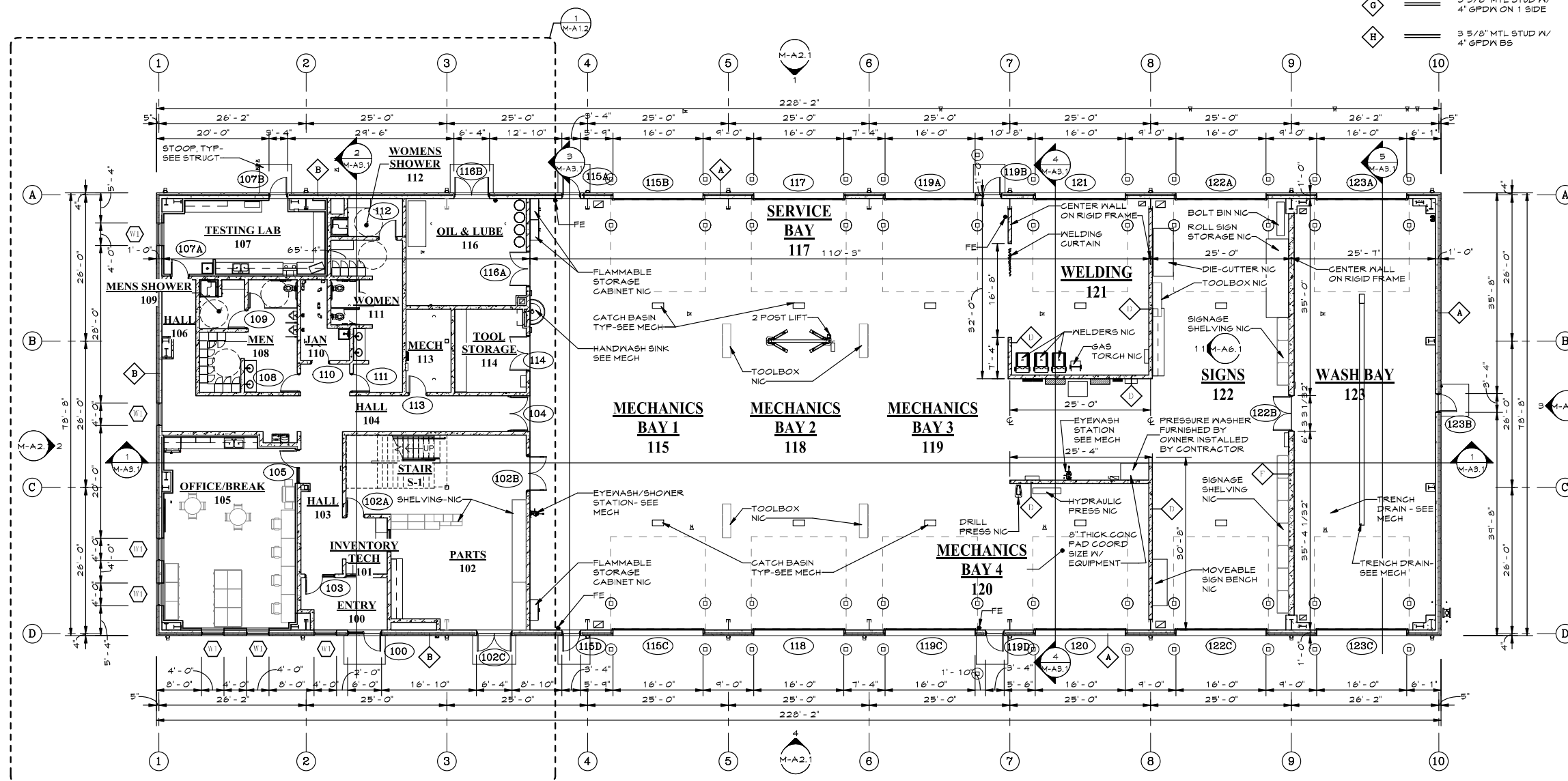
12/28/2021 10:55:28 AM \\SRV16\Users\bsb\Documents\107420 Pott Co Roads Maintenance Bldg_BSB.rvt

FLOOR PLAN NOTES:

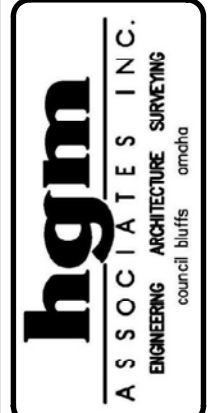
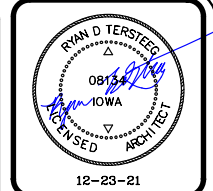
1. DIMENSIONS SHOWN ON FLOOR PLANS ARE TO THE FACE OF FINISH INTERIOR WALLS, TO CENTER LINE OF COLUMNS AND TO FACE OF CONCRETE OR MASONRY WALLS, UNLESS OTHERWISE NOTED. WRITTEN DIMENSIONS TAKE PRECEDENCE OVER DRAWING SCALE.
2. SEE 2/M-A 1.0 FOR TYPICAL MOUNTING HEIGHTS OF PLUMBING FIXTURES AND TOILET ACCESSORIES.
3. FOUNDATION PERIMETER TO RECEIVE FLUID APPLIED WATERPROOFING. EXTEND WATERPROOFING HORIZONTALLY OVER FOOTINGS AND TURN DOWN TO BOTTOM OF FOOTING. TERMINATE TOP OF WATERPROOFING IN ACCORDANCE WITH MANUFACTURER'S INSTRUCTIONS APPROXIMATELY 4" BELOW FINISHED GRADE. PROTECTION COURSE IS TO BE INSTALLED PRIOR TO PERIMETER INSULATION.
4. PROVIDE INSULATION AT SLAB AND FOUNDATION PERIMETER TO 24 INCHES BELOW GRADE OR TOP OF FOOTING, WHICHEVER IS GREATER. PROVIDE MINIMUM R-12 INSULATION.
5. PROVIDE UNDER SLAB VAPOR BARRIER AT NEW FLOOR SLAB.

WALL TYPE LEGEND

- A** 12" PREGAST BASE TO 10'-0" --GIRT 8" ABOVE
- B** 12" PREGAST BASE TO 21'-0" --GIRT 8" ABOVE
- C** 4" CMU
- D** 8" CMU
- E** 8" CMU W/ 12" GPDW ON 1 SIDE
- F** 12" CMU
- G** 3 5/8" MTL STUD W/ 4" GPDW ON 1 SIDE
- H** 3 5/8" MTL STUD W/ 4" GPDW BS



1 FLOOR PLAN
SCALE: 3/32" = 1'-0"



This drawing is being made available by hgm associates inc. in accordance with hgm associates inc. agreement for liability for any use of this drawing in accordance with the terms of the above agreement.

Rev#	Date
HGM drawn	
HGM designed	
HGM approved	
HGM date	12-23-21

Project: Pottawattamie County - ROC - Vehicle Maintenance Building
101 Ingenuium Way, Council Bluffs, IA
Client: Pottawattamie County Roads Department
Sheet: **FLOOR PLAN**

Project no. 107420
Sheet **M-A1.1**

12/28/2021 12:42:32 PM \\SRV16\Users\smg\Documents\107420 Pott Co Roads Office_smp.rvt

WALL TYPE LEGEND

A		PRECAST 12" CONC 6-3-3 W/ 3 5/8" MTL STUDS, TYP X GPDW INTERIOR SIDE ONLY
A1		PRECAST 12" CONC W/ 6" MTL STUD TYPE X GPDW, INTERIOR SIDE ONLY
B		3 5/8" MTL STUD, TYP X GPDW BS, AND SOUND BATTS
C		3 5/8" MTL STUDS GPDW ONE SIDE
D		6" MTL STUD TYPE X GPDW BS, SOUND BATTS

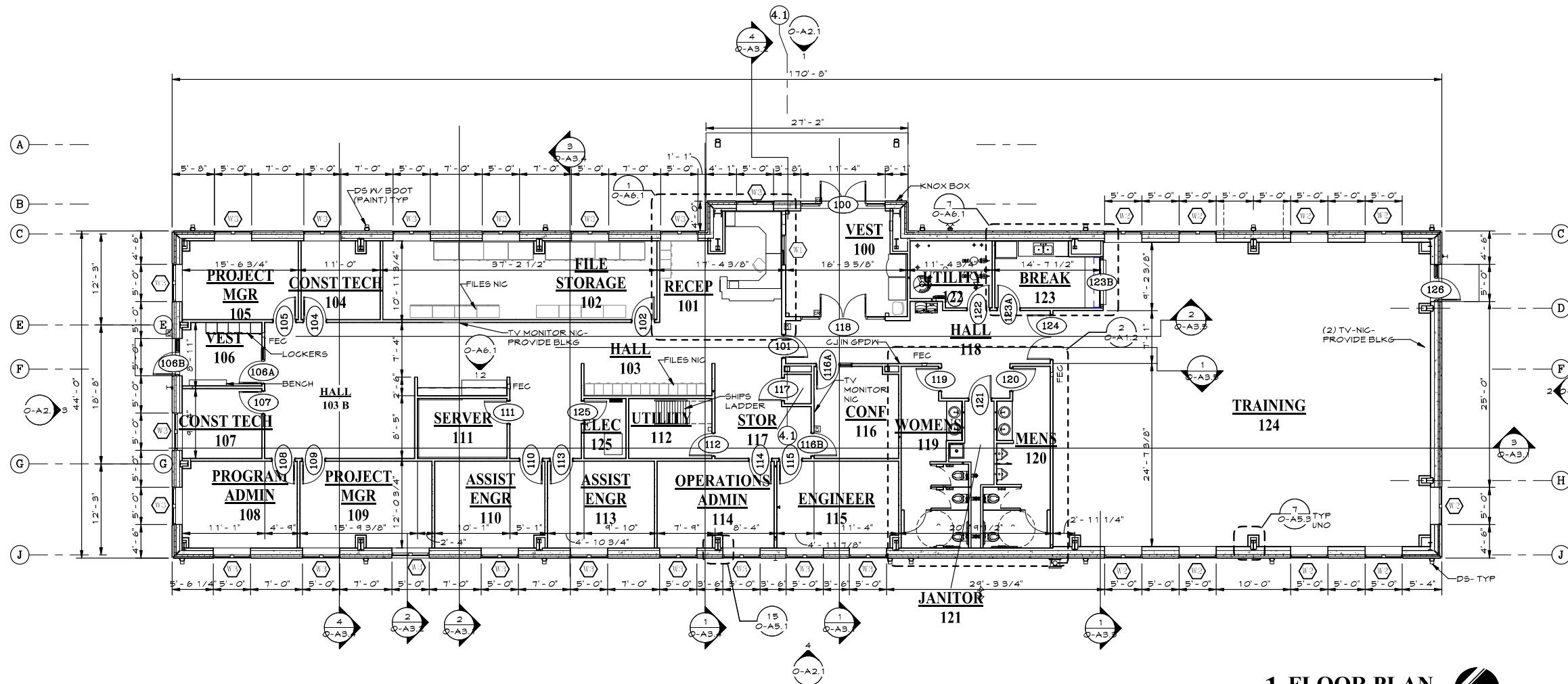
NOTES:
1. REFER TO SHEET O-A 1.2 & O-A 1.3 FOR LOCATION OF ALL WALL TYPES
2. REFER TO SECTIONS FOR HEIGHTS OF WALLS

GENERAL NOTE:

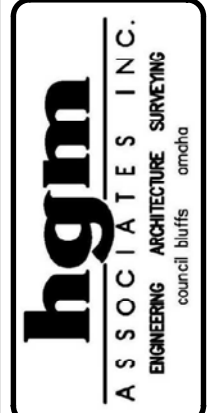
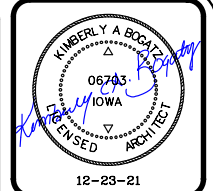
ALL DIMENSIONS ARE TO FINISH FACE OF WALLS.
WRITTEN DIMENSIONS TAKE PRECEDENCE OVER DRAWING SCALE.

FLOOR PLAN NOTES:

1. REFER TO G SERIES SHEETS FOR GRAPHIC EXTENTS OF FIRE RATED PARTITIONS. REFER TO PARTITION LEGEND FOR LOCATION OF SOUND ATTENUATION BLANKETS.
2. DIMENSIONS SHOWN ON FLOOR PLANS ARE TO THE FACE OF FINISH INTERIOR WALLS, TO CENTER LINE OF COLUMNS AND TO FACE OF CONCRETE OR MASONRY WALLS, UNLESS OTHERWISE NOTED.
3. SEE 3/O-A 1.0 FOR TYPICAL MOUNTING HEIGHTS OF PLUMBING FIXTURES AND TOILET ACCESSORIES.
4. REFER TO STRUCTURAL FOR ALL STRUCTURAL INFORMATION
5. REFER TO MECHANICAL AND ELECTRICAL DRAWINGS FOR ALL MECHANICAL, PLUMBING AND ELECTRICAL INFORMATION
6. ALL HEAD AND JAMB OF WINDOWS SHALL BE 6" GPDW. ALL WINDOW SILLS SHALL BE 5" GPDW
7. PROVIDE BLKG AT ALL TV, TOILET ACCESSORIES, AND OFFICE ROBE HOOKS. COORDINATE HEIGHTS AND LOCATIONS OF ALL TVs WITH OWNER
8. ALL EXPOSED STRUCTURE, PIPES, CONDUIT, DUCTWORK, ECT SHALL BE PAINTED



1 FLOOR PLAN
SCALE: 1/8" = 1'-0"



This drawing is being made available by hgm associates inc. in accordance with hgm associates inc. agreement for liability for any use of this drawing in accordance with the terms of the above agreement.

Rev#	Date
HGM	drawn
HGM	designed
HGM	approved
12-23-21	date

Project: Pottawattamie County-ROC- Office Building
101 Ingenuium Way, Council Bluffs, IA
Client: Pottawattamie County Roads Department
Sheet: **GROUND FLOOR PLAN**

project no.
107420
sheet
O-A1.1

John Rasmussen/Engineer

**Discussion on Pine Terrace/Hwy 92 Traffic study for
Lewis Township Volunteer Fire Department traffic light
request.**



May 4, 2022

MEMORANDUM

TO: Mr. John Rasmussen, PE
Pottawattamie County Engineer
223 S. 6th Street
Council Bluffs, IA 51501

FROM: Adam Denney, PE, PTOE
Kornel Gwiazdowski
Felsburg Holt & Ullevig

SUBJECT: IA-92 and Pine Terrace Drive Warrant Analysis
FHU Reference No. 122100-05

	I hereby certify that this engineering document was prepared by me or under my direct personal supervision and that I am a duly licensed Professional Engineer under the laws of the State of Iowa.
	<hr/>
	05/04/2022
	Adam Jon Denney Date
	License Number: 25097
My License Renewal Date is December 31, 2022	
Pages or sheets covered by this Seal:	
All pages in this document	

Felsburg Holt & Ullevig (FHU) has evaluated Manual on Uniform Traffic Control Devices (MUTCD) traffic control warrants for the intersection of Iowa Highway 92 (IA-92) with Pine Terrace Drive in Pottawattamie County, Iowa. The intersection of Pine Terrace Drive with IA-92 is currently two-way stop controlled (TWSC) with stop signs on the northbound and southbound approaches. The Lewis Township Fire and Rescue Department is located on the northwest corner of the intersection. Additionally, due to complaints of inadequate gaps for emergency vehicles on IA-92, an emergency-vehicle traffic signal was evaluated. The previously completed Traffic Engineering Assistance Program Traffic and Safety Study, May 2018, was reviewed.

Roadway Geometrics

The configuration of IA-92 is a four-lane divided minor arterial with a posted speed limit of 50 miles per hour (mph). Pine Terrace Drive is a two-lane local roadway with a posted speed limit of 25 mph. The northbound and southbound approaches at the intersection are stop-controlled, and the westbound and eastbound approaches are free movements. The westbound and eastbound approaches have two through lanes in each direction with left-turn lanes at the intersection. Additionally, there is an eastbound right-turn lane at the intersection. The northbound and southbound approaches have a single, shared lane for all movements. There are no pedestrian facilities along IA-92 and Pine Terrace Drive in the project vicinity.

The Iowa DOT recently completed a mill and overlay of IA-92 in the summer of 2021. It is unsure if any grade changes were made with the resurfacing.

Data Collection

FHU contacted the Lewis Township Fire and Rescue to talk about operations, issues, and concerns. The following items were discussed:

- The majority of calls, approximately 70%, are to the east requiring emergency vehicles to make a southbound left-turn to go east. Much of the service area is to the east of the station.
- Eastbound vehicles on IA-92 do not stop for active (siren and lights on) emergency vehicles turning on to the highway. Some will slow down but then realize they are already at the Pine Terrace Drive intersection and continue on.
- Response calls are random and spread throughout the day.

A field review was conducted to confirm roadway geometrics, and a 24-hour turning movement count was conducted by FHU at the study intersection starting at 12:00 AM on Thursday, March 3, 2022. The AM peak hour was determined to be 6:45 AM to 7:45 AM, and the PM peak hour was 3:45 PM to 4:45 PM. The traffic count data is attached.

Visual site distance checks were completed during the site visit to determine if there were any obstructions within the intersection sight triangles. The sight distance lengths evaluated are based on the *A Policy on Geometric Design of Highways and Streets (Green Book), AASHTO, 7th Edition, 2018* for the posted speed limit of 50 mph and the 85th percentile speed limit of 55 mph determined as part of the *Traffic Engineering Assistance Program Traffic and Safety Study, May 2018*. **Table I** summarizes the required sight distance lengths for the minor approaches at the intersection for left-turn, crossing, and right-turn for the respective design vehicle.

For drivers eastbound on IA-92, the two trees on the northwest corner of the intersection of IA-92 with Pine Terrace Road may be obstructing the view of an emergency vehicle turning onto IA-10. However, the flashing lights and siren should provide other visual and audio cues that are not obstructed by the trees.

It was observed that 650 feet of sight distance is provided for the southbound left-turn and crossing movements, and 620 feet is provided for the northbound right-turn movement. More than 1,000 feet of sight distance is provided for the northbound left-turn, northbound crossing, and southbound right-turn movements. Based on the posted speed limit of 50 mph, the sight distance requirements are met for all movements for passenger cars. However, using the 85th percentile speed of 55 mph determined as part of the previous study, the sight distance requirement is not met for the southbound left-turn and crossing movements for passenger cars. For single-unit trucks, the southbound left-turn, southbound crossing, and northbound right-turn movements for single-unit trucks are not met under either speed analyzed. The insufficient sight distances are due to the crest vertical curve to the west of the intersection along IA-92.

Table I. Required Minor Approach Intersection Sight Distance

Location	Minor Approaches	Speed (mph)	Passenger Car Intersection Sight Distance	Single-Unit Trucks Intersection Sight Distance
Pine Terrace Drive & IA-92	Left-turn	50	625 feet	775 feet
	Crossing		555 feet	775 feet
	Right-turn		480 feet	625 feet
	Left-turn	55	690 feet	850 feet
	Crossing		690 feet	850 feet
	Right-turn		530 feet	690 feet

The site distance measurements collected by FHU differ from those in the *Traffic Engineering Assistance Program Traffic and Safety Study*, which measured the 730 feet of sight distance for the southbound left-turn and crossing movement. The difference in measurements may be attributed to a grade raise from the mill and overlay completed by the Iowa DOT in 2021.

MUTCD Traffic Control Device Warrant Evaluation

A review was performed to determine if *Manual on Uniform Traffic Control Devices (MUTCD) for Streets and Highways, 2009 Edition* traffic signal Warrant 1 (Eight-Hour Vehicular Volume) and/or Warrant 2 (Four-Hour Vehicular Volume) are satisfied for the study intersection under Existing (2022) traffic conditions. The intersection was analyzed with 50 mph speed limit on IA-92 and 25 mph speed limit on Pine Terrace Drive with two-lanes on the major approaches and one-lane on the minor approaches.

Signal Warrant 1 and Warrant 2 were **not satisfied** at Pine Terrace Drive with IA-92. Graphical results of the MUTCD Warrant Analysis are included at the end of this memo.

Traffic Operations

Traffic operations were analyzed for the study intersection using procedures documented in the *Highway Capacity Manual (HCM) 6th Edition*, Transportation Research Board, 2016. From the analyses, a key measure or “level of service” rating of the traffic operational conditions was obtained. In general, level of service (LOS) is a qualitative assessment of traffic operational conditions within a traffic stream in terms of the average stopped delay per vehicle at a controlled intersection.

Levels of service are described by a letter designation of either A, B, C, D, E or F, with LOS A representing essentially uninterrupted flow, and LOS F representing a breakdown of traffic flow with noticeable congestion and delay. Unsignalized, or stop sign controlled, intersection capacity analyses produce LOS results for each movement which must yield to conflicting traffic at the intersection. **Table 2** summarizes LOS criteria for signalized and unsignalized (stop sign controlled) intersections.

Table 2. Level of Service (LOS) Criteria

Level of Service	Average Control Delay per Vehicle (sec/veh)	
	Signalized Intersections	Stop Sign Controlled Intersections
A	≤ 10	≤ 10
B	> 10 to 20	> 10 to 15
C	> 20 to 35	> 15 to 25
D	> 35 to 55	> 25 to 35
E	> 55 to 80	> 35 to 50
F	> 80	> 50

HCM 6th Edition, Exhibit 19-8 & Exhibit 20-2

Synchro traffic analysis software was utilized to analyze traffic operations at the study intersection. For Existing (2022) traffic conditions, all movements at the intersection of Pine Terrace Drive with IA-92 operate at LOS C or better during the AM and PM peak hours.

95th percentile queue lengths were reviewed at the study intersection for Existing (2022) traffic conditions. **Table 3** summarizes the 95th percentile queue lengths for the AM and PM peak hours. Based on the 95th percentile queue lengths at the intersection, queues are not anticipated to impact traffic operations at the intersection.

Table 3. Turn Lane Storage & 95th Percentile Queue Lengths

Location	Critical Movements	Existing Turn Lane Storage Length (ft)	95% Queue Length (ft)
			Existing (2022) (AM / PM)
Pine Terrace Drive with IA-92	NB Through ⁺	-	20 / 15
	EB Left-turn	155	3 / 3
	WB Left-turn	130	0 / 0
	SB Through ⁺	-	10 / 5

⁺shared lane # - 95th percentile volume exceeds capacity; queues may be longer

Speed Limit

As a tool to help assist in determining the appropriate posted speed limit for IA-92, FHU utilized the Federal Highway Administration's (FHWA) USLIMIT2 tool. The tool completes a statistical analysis based on several roadway specific inputs including current speed limit, 85th and 50th percentile speeds, roadway features, ADT volumes, and crash statistics to develop a recommended posted speed limit. Based on speed study results, the roadway cross-section, crash history, engineering judgment, and FHWA guidance, the USLIMIT2 software advises the posted speed limit to be 55 mph (currently posted at 50 mph). However, due to intersection sight distance concerns, it is not recommended the speed limit be increased in the study. The results of the USLIMIT2 analysis are attached to this memo.

Summary and Recommendations

Traffic operations at the study intersection for Existing (2022) traffic conditions were reviewed. Based upon Existing (2022) traffic conditions, all intersection movements operate at LOS C or better during the AM and PM peak hour.

A field review of sight distance triangles was conducted. Based on field measurements, the intersection does not provide adequate sight distance for the southbound left-turn and crossing movements for passenger cars based on the 85th percentile speed determined as part of the Traffic Engineering Assistance Program Traffic and Safety Study, May 2018. For single-unit trucks, southbound left-turn, southbound crossing, and the northbound right-turn movements for single-unit trucks are not met under either speed analyzed.

The following is recommended:

- Based on MUTCD Signal Warrant Analysis, a traffic signal is **not warranted** at the intersection of IA-92 with Pine Terrace Drive.
- According to Section 4G.01 of the MUTCD, an emergency-vehicle traffic signal may be installed at locations that do not meet signal warrants of Chapter 4C, and if sufficient gaps and stopping sight distance is not provided.
 - A review of intersection sight distance determined that adequate stopping sight **distance is provided**, but sufficient intersection sight distance is **not provided** for vehicles on the minor street approaches based on the 85th percentile speed.
 - Based on a gap study from the Traffic Engineering Assistance Program Traffic and Safety Study, May 2018, conducted at the intersection, adequate gaps are **not provided** for the southbound movements for single-unit trucks during the PM peak hour.
 - Per the MUTCD, an emergency vehicle traffic signal **may be installed** at this intersection due to insufficient intersection sight distance and inadequate gaps.
- In addition to the existing emergency vehicle warning sign (W11-8) on the west leg of the intersection, **it is recommended** that a warning sign be installed on the east leg of IA-92 in advance of the Lewis Township Fire and Rescue Station.
 - Adding warning beacons on the signs to indicate when emergency-vehicles are entering the highway to respond to service calls should be considered. This will require communication between the beacon and fire station.
 - A supplemental "When Flashing" sign (W16-13P) may be considered to supplement the warning beacon.
- Both advanced warning beacons and an emergency traffic signal are potential solutions at this location. The cost for an emergency traffic signal is estimated at **\$375,000** and the cost for the advanced warning beacons is estimated at **\$55,000**. These costs include survey, design/engineering, and construction management. **It is recommended** that the advanced warning beacons be implemented first and be continually monitored to assess if yielding to emergency vehicles improves. Should issues remain, a higher form of traffic control such as an emergency traffic signal would be recommended.

May 4, 2022

IA-92 & Pine Terrace Drive Warrant Analysis

Page 5

- Field sight checks indicated that the two trees on the northwest corner of the intersection of IA-92 with Pine Terrace Road may be obstructing the view of an emergency vehicle turning onto IA-92. Consideration should be given to the removal of these trees to provide an unobstructed view of and emergency vehicle accessing IA-92. Based on a cursory review of the Pottawattamie County GIS website, these trees may be located within Iowa DOT right-of-way.
- Traffic operations and crash performance should continue to be monitored at the intersection. As development continues and volumes increase, traffic control warrants should be re-evaluated.

Appendix

- Traffic Count Data
- USLIMIT2
- MUTCD Warrant Worksheets
- Capacity Analysis Worksheets

Traffic Count Data



Felsburg Holt & Ullevig : Omaha (NE)
11422 Miracle Hills Drive Suite 115

Omaha, Nebraska, United States 68154
(402) 445-4405 kornel.gwiazdowski@fhueng.com

Count Name: IA 92 & Pine Terrace Drive
Site Code:
Start Date: 03/03/2022
Page No: 1

Turning Movement Data

Start Time	IA 92 Eastbound					IA 92 Westbound					Pine Terrace Drive Northbound					Pine Terrace Drive Southbound					Int. Total	
	U-Turn	Left	Thru	Right	App. Total	U-Turn	Left	Thru	Right	App. Total	U-Turn	Left	Thru	Right	App. Total	U-Turn	Left	Thru	Right	App. Total		
12:00 AM	0	0	5	0	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	5
12:15 AM	0	0	4	0	4	0	0	4	0	4	0	0	0	0	0	0	0	0	0	0	0	8
12:30 AM	0	1	5	1	7	0	0	3	0	3	0	1	0	0	1	0	0	0	0	0	0	11
12:45 AM	0	0	4	0	4	0	0	4	0	4	0	0	0	0	0	0	0	0	0	0	0	8
Hourly Total	0	1	18	1	20	0	0	11	0	11	0	1	0	0	1	0	0	0	0	0	0	32
1:00 AM	0	0	3	0	3	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	4
1:15 AM	0	0	2	0	2	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	3
1:30 AM	0	0	2	1	3	0	0	2	0	2	0	0	0	0	0	0	0	0	0	0	0	5
1:45 AM	0	0	2	0	2	0	0	2	0	2	0	1	0	0	1	0	0	0	0	0	0	5
Hourly Total	0	0	9	1	10	0	0	6	0	6	0	1	0	0	1	0	0	0	0	0	0	17
2:00 AM	0	0	1	0	1	0	0	3	0	3	0	0	0	0	0	0	0	0	0	0	0	4
2:15 AM	0	0	1	0	1	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	2
2:30 AM	0	0	2	0	2	0	0	2	0	2	0	0	0	0	0	0	0	0	0	0	0	4
2:45 AM	0	0	0	0	0	0	0	5	0	5	0	0	0	0	0	0	0	0	0	0	0	5
Hourly Total	0	0	4	0	4	0	0	11	0	11	0	0	0	0	0	0	0	0	0	0	0	15
3:00 AM	0	0	2	0	2	0	0	5	0	5	0	0	0	0	0	0	0	0	0	0	0	7
3:15 AM	0	0	2	0	2	0	0	3	0	3	0	0	0	0	0	0	0	0	0	0	0	5
3:30 AM	0	0	0	0	0	0	0	5	0	5	0	0	0	0	0	0	0	0	0	0	0	5
3:45 AM	0	0	0	0	0	0	0	10	0	10	0	0	0	0	0	0	0	0	0	0	0	10
Hourly Total	0	0	4	0	4	0	0	23	0	23	0	0	0	0	0	0	0	0	0	0	0	27
4:00 AM	0	0	3	1	4	0	1	9	0	10	0	0	0	0	0	0	0	0	1	1	1	15
4:15 AM	0	0	0	1	1	0	0	16	0	16	0	1	0	0	1	0	0	0	0	0	0	18
4:30 AM	0	0	2	0	2	0	0	12	0	12	0	0	0	0	0	0	0	0	2	2	2	16
4:45 AM	0	0	3	1	4	0	0	26	0	26	0	0	0	0	0	0	0	0	2	2	2	32
Hourly Total	0	0	8	3	11	0	1	63	0	64	0	1	0	0	1	0	0	0	5	5	5	81
5:00 AM	0	0	4	1	5	0	0	21	0	21	0	0	0	0	0	0	0	0	2	2	2	28
5:15 AM	0	0	4	1	5	0	0	30	0	30	0	3	0	1	4	0	0	0	1	1	1	40
5:30 AM	0	0	7	1	8	0	0	40	0	40	0	1	0	0	1	0	0	0	2	2	2	51
5:45 AM	0	0	12	2	14	0	0	43	0	43	0	6	0	2	8	0	0	0	1	1	1	66
Hourly Total	0	0	27	5	32	0	0	134	0	134	0	10	0	3	13	0	0	0	6	6	6	185
6:00 AM	0	0	12	3	15	0	1	64	0	65	0	7	0	0	7	0	0	0	4	4	4	91
6:15 AM	0	2	15	0	17	0	1	80	0	81	0	11	0	0	11	0	0	1	4	5	5	114
6:30 AM	0	1	19	3	23	0	0	130	0	130	0	16	0	0	16	0	1	5	4	10	10	179
6:45 AM	0	2	20	5	27	0	0	173	1	174	0	15	0	2	17	0	1	0	13	14	14	232
Hourly Total	0	5	66	11	82	0	2	447	1	450	0	49	0	2	51	0	2	6	25	33	33	616
7:00 AM	0	2	37	12	51	0	2	143	1	146	0	16	1	0	17	0	0	2	13	15	15	229

7:15 AM	0	5	55	13	73	0	3	151	0	154	0	10	1	0	11	0	0	0	15	15	253
7:30 AM	2	4	57	12	75	0	1	194	2	197	0	11	1	0	12	0	0	0	12	12	296
7:45 AM	2	1	47	13	63	0	0	143	1	144	0	3	0	0	3	0	0	2	12	14	224
Hourly Total	4	12	196	50	262	0	6	631	4	641	0	40	3	0	43	0	0	4	52	56	1002
8:00 AM	0	5	47	13	65	0	2	112	1	115	0	5	1	4	10	0	0	1	4	5	195
8:15 AM	1	0	55	11	67	0	2	115	1	118	0	10	1	2	13	0	0	1	3	4	202
8:30 AM	0	3	47	10	60	0	1	88	1	90	0	6	1	4	11	0	0	0	4	4	165
8:45 AM	0	2	43	13	58	0	3	79	0	82	0	11	0	0	11	0	2	1	7	10	161
Hourly Total	1	10	192	47	250	0	8	394	3	405	0	32	3	10	45	0	2	3	18	23	723
9:00 AM	0	4	55	6	65	0	1	72	0	73	0	8	0	1	9	0	0	1	3	4	151
9:15 AM	0	4	52	6	62	0	0	69	0	69	0	7	0	1	8	0	0	1	4	5	144
9:30 AM	0	3	42	9	54	0	1	101	0	102	0	7	1	0	8	0	0	0	5	5	169
9:45 AM	0	2	54	7	63	0	0	71	1	72	0	4	1	0	5	0	1	1	2	4	144
Hourly Total	0	13	203	28	244	0	2	313	1	316	0	26	2	2	30	0	1	3	14	18	608
10:00 AM	0	3	33	7	43	0	0	55	0	55	0	4	2	0	6	0	0	0	1	1	105
10:15 AM	0	5	49	9	63	1	0	79	0	80	0	6	1	1	8	0	0	1	3	4	155
10:30 AM	1	0	52	7	60	0	3	76	0	79	0	6	0	1	7	0	0	2	10	12	158
10:45 AM	0	3	47	11	61	0	2	80	0	82	0	4	0	3	7	0	0	0	1	6	157
Hourly Total	1	11	181	34	227	1	5	290	0	296	0	20	3	5	28	0	0	4	20	24	575
11:00 AM	0	4	45	7	56	0	0	75	3	78	0	8	2	1	11	0	0	1	2	3	148
11:15 AM	0	6	68	5	79	0	2	68	0	70	1	7	1	2	11	0	0	2	4	6	166
11:30 AM	0	7	59	11	77	0	2	82	1	85	0	6	2	2	10	0	0	0	8	8	180
11:45 AM	0	3	57	9	69	0	6	78	0	84	0	6	0	1	7	0	0	0	2	2	162
Hourly Total	0	20	229	32	281	0	10	303	4	317	1	27	5	6	39	0	0	3	16	19	656
12:00 PM	0	4	70	13	87	0	1	69	0	70	0	6	1	2	9	0	1	0	4	5	171
12:15 PM	1	4	64	16	85	0	0	67	0	67	0	7	0	1	8	0	1	1	2	4	164
12:30 PM	1	6	67	10	84	0	4	64	0	68	0	11	4	1	16	0	0	0	3	3	171
12:45 PM	0	1	64	10	75	0	0	55	1	56	0	6	0	1	7	0	0	0	10	10	148
Hourly Total	2	15	265	49	331	0	5	255	1	261	0	30	5	5	40	0	2	1	19	22	654
1:00 PM	0	6	65	14	85	0	2	70	0	72	0	4	0	0	4	0	0	0	4	4	165
1:15 PM	1	5	75	12	93	0	2	63	1	66	0	4	1	0	5	0	2	1	6	9	173
1:30 PM	0	5	63	5	73	0	4	84	0	88	0	11	0	0	11	0	1	0	2	3	175
1:45 PM	0	5	60	8	73	0	0	49	0	49	0	10	0	1	11	0	0	1	6	7	140
Hourly Total	1	21	263	39	324	0	8	266	1	275	0	29	1	1	31	0	3	2	18	23	653
2:00 PM	0	3	68	8	79	0	0	65	0	65	0	1	1	0	2	0	0	0	5	5	151
2:15 PM	0	3	82	10	95	0	1	61	0	62	0	3	2	0	5	0	1	1	3	5	167
2:30 PM	0	8	62	19	89	0	3	54	1	58	0	11	1	0	12	0	0	1	6	7	166
2:45 PM	1	8	112	19	140	0	1	68	1	70	0	10	2	1	13	1	0	1	6	8	231
Hourly Total	1	22	324	56	403	0	5	248	2	255	0	25	6	1	32	1	1	3	20	25	715
3:00 PM	1	9	100	9	119	0	1	70	1	72	0	9	0	3	12	0	0	0	8	8	211
3:15 PM	0	10	107	12	129	0	0	71	0	71	0	8	0	3	11	0	0	0	6	6	217
3:30 PM	0	8	98	17	123	0	2	72	1	75	0	4	0	0	4	0	0	0	7	7	209
3:45 PM	0	7	121	16	144	0	1	94	3	98	0	5	1	0	6	0	0	1	13	14	262
Hourly Total	1	34	426	54	515	0	4	307	5	316	0	26	1	6	33	0	0	1	34	35	899
4:00 PM	0	11	103	12	126	0	4	78	2	84	0	13	1	1	15	0	2	0	7	9	234
4:15 PM	0	13	149	12	174	0	0	83	0	83	0	9	0	0	9	0	0	1	9	10	276
4:30 PM	1	9	136	17	163	0	0	88	0	88	0	8	1	1	10	0	0	0	5	5	266
4:45 PM	0	9	116	13	138	1	1	88	0	90	0	5	2	0	7	0	0	0	3	3	238
Hourly Total	1	42	504	54	601	1	5	337	2	345	0	35	4	2	41	0	2	1	24	27	1014
5:00 PM	0	15	134	16	165	0	1	70	1	72	0	9	0	2	11	1	0	0	6	7	255
5:15 PM	1	9	140	16	166	0	0	88	0	88	0	12	1	2	15	0	0	1	4	5	274
5:30 PM	0	9	127	15	151	0	2	74	0	76	0	8	2	3	13	0	1	0	4	5	245

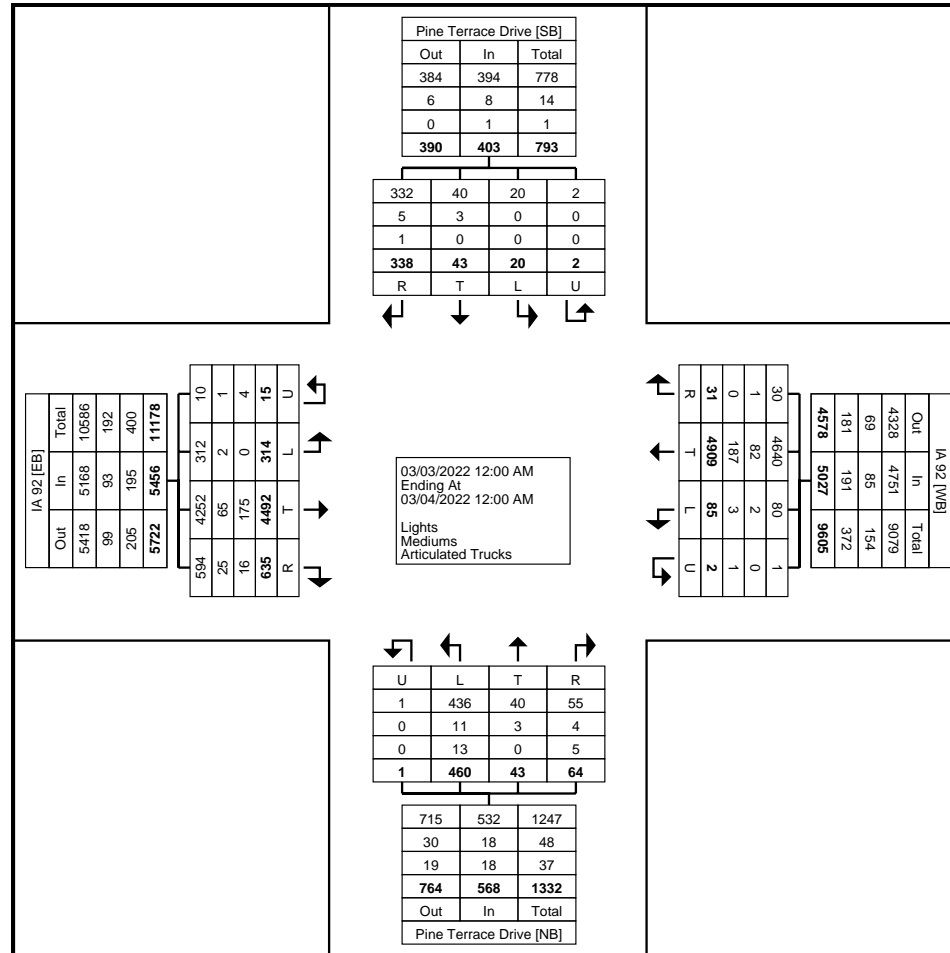
5:45 PM	0	10	102	14	126	0	1	52	1	54	0	3	0	0	3	0	0	0	7	7	190
Hourly Total	1	43	503	61	608	0	4	284	2	290	0	32	3	7	42	1	1	1	21	24	964
6:00 PM	0	9	112	16	137	0	5	77	1	83	0	8	0	0	8	0	1	1	7	9	237
6:15 PM	1	4	98	6	109	0	1	72	2	75	0	6	1	3	10	0	1	1	10	12	206
6:30 PM	0	2	82	8	92	0	0	55	0	55	0	4	0	0	4	0	3	0	2	5	156
6:45 PM	0	6	72	7	85	0	0	51	0	51	0	4	1	0	5	0	0	0	7	7	148
Hourly Total	1	21	364	37	423	0	6	255	3	264	0	22	2	3	27	0	5	2	26	33	747
7:00 PM	0	7	91	5	103	0	2	55	0	57	0	4	1	2	7	0	0	0	1	1	168
7:15 PM	0	3	63	6	72	0	1	22	0	23	0	4	2	1	7	0	0	3	3	6	108
7:30 PM	0	1	69	8	78	0	0	45	0	45	0	5	1	1	7	0	0	2	0	2	132
7:45 PM	0	3	73	6	82	0	1	36	0	37	0	7	0	0	7	0	0	0	2	2	128
Hourly Total	0	14	296	25	335	0	4	158	0	162	0	20	4	4	28	0	0	5	6	11	536
8:00 PM	0	3	49	10	62	0	0	25	1	26	0	6	0	2	8	0	0	0	1	1	97
8:15 PM	0	1	54	13	68	0	3	20	0	23	0	6	1	2	9	0	0	1	7	8	108
8:30 PM	0	4	40	2	46	0	0	16	0	16	0	4	0	1	5	0	0	2	0	2	69
8:45 PM	0	3	33	5	41	0	0	21	0	21	0	4	0	0	4	0	0	0	1	1	67
Hourly Total	0	11	176	30	217	0	3	82	1	86	0	20	1	5	26	0	0	3	9	12	341
9:00 PM	0	3	44	4	51	0	1	16	0	17	0	2	0	1	3	0	0	0	0	0	71
9:15 PM	0	6	39	4	49	0	0	10	0	10	0	1	0	0	1	0	0	1	0	1	61
9:30 PM	0	1	23	0	24	0	1	4	0	5	0	1	0	0	1	0	0	0	2	2	32
9:45 PM	0	0	22	3	25	0	0	15	0	15	0	0	0	0	0	0	0	0	0	0	40
Hourly Total	0	10	128	11	149	0	2	45	0	47	0	4	0	1	5	0	0	1	2	3	204
10:00 PM	0	3	26	2	31	0	1	15	0	16	0	1	0	0	1	0	0	0	0	0	48
10:15 PM	0	1	18	0	19	0	3	8	0	11	0	3	0	0	3	0	0	0	0	0	33
10:30 PM	0	2	12	1	15	0	1	8	0	9	0	4	0	1	5	0	1	0	1	2	31
10:45 PM	1	0	9	2	12	0	0	3	1	4	0	1	0	0	1	0	0	0	0	0	17
Hourly Total	1	6	65	5	77	0	5	34	1	40	0	9	0	1	10	0	1	0	1	2	129
11:00 PM	0	0	13	0	13	0	0	4	0	4	0	1	0	0	1	0	0	0	1	1	19
11:15 PM	0	3	10	1	14	0	0	4	0	4	0	0	0	0	0	0	0	0	1	1	19
11:30 PM	0	0	11	1	12	0	0	2	0	2	0	0	0	0	0	0	0	0	0	0	14
11:45 PM	0	0	7	0	7	0	0	2	0	2	0	0	0	0	0	0	0	0	0	0	9
Hourly Total	0	3	41	2	46	0	0	12	0	12	0	1	0	0	1	0	0	0	2	2	61
Grand Total	15	314	4492	635	5456	2	85	4909	31	5027	1	460	43	64	568	2	20	43	338	403	11454
Approach %	0.3	5.8	82.3	11.6	-	0.0	1.7	97.7	0.6	-	0.2	81.0	7.6	11.3	-	0.5	5.0	10.7	83.9	-	-
Total %	0.1	2.7	39.2	5.5	47.6	0.0	0.7	42.9	0.3	43.9	0.0	4.0	0.4	0.6	5.0	0.0	0.2	0.4	3.0	3.5	-
Lights	10	312	4252	594	5168	1	80	4640	30	4751	1	436	40	55	532	2	20	40	332	394	10845
% Lights	66.7	99.4	94.7	93.5	94.7	50.0	94.1	94.5	96.8	94.5	100.0	94.8	93.0	85.9	93.7	100.0	100.0	93.0	98.2	97.8	94.7
Mediums	1	2	65	25	93	0	2	82	1	85	0	11	3	4	18	0	0	3	5	8	204
% Mediums	6.7	0.6	1.4	3.9	1.7	0.0	2.4	1.7	3.2	1.7	0.0	2.4	7.0	6.3	3.2	0.0	0.0	7.0	1.5	2.0	1.8
Articulated Trucks	4	0	175	16	195	1	3	187	0	191	0	13	0	5	18	0	0	0	1	1	405
% Articulated Trucks	26.7	0.0	3.9	2.5	3.6	50.0	3.5	3.8	0.0	3.8	0.0	2.8	0.0	7.8	3.2	0.0	0.0	0.0	0.3	0.2	3.5



Felsburg Holt & Ullevig : Omaha (NE)
11422 Miracle Hills Drive Suite 115

Omaha, Nebraska, United States 68154
(402) 445-4405 kornel.gwiazdowski@fhueng.com

Count Name: IA 92 & Pine Terrace Drive
Site Code:
Start Date: 03/03/2022
Page No: 4



Turning Movement Data Plot



Felsburg Holt & Ullevig : Omaha (NE)
11422 Miracle Hills Drive Suite 115

Omaha, Nebraska, United States 68154
(402) 445-4405 kornel.gwiazdowski@fhueng.com

Count Name: IA 92 & Pine Terrace Drive
Site Code:
Start Date: 03/03/2022
Page No: 5

Turning Movement Peak Hour Data (6:45 AM)

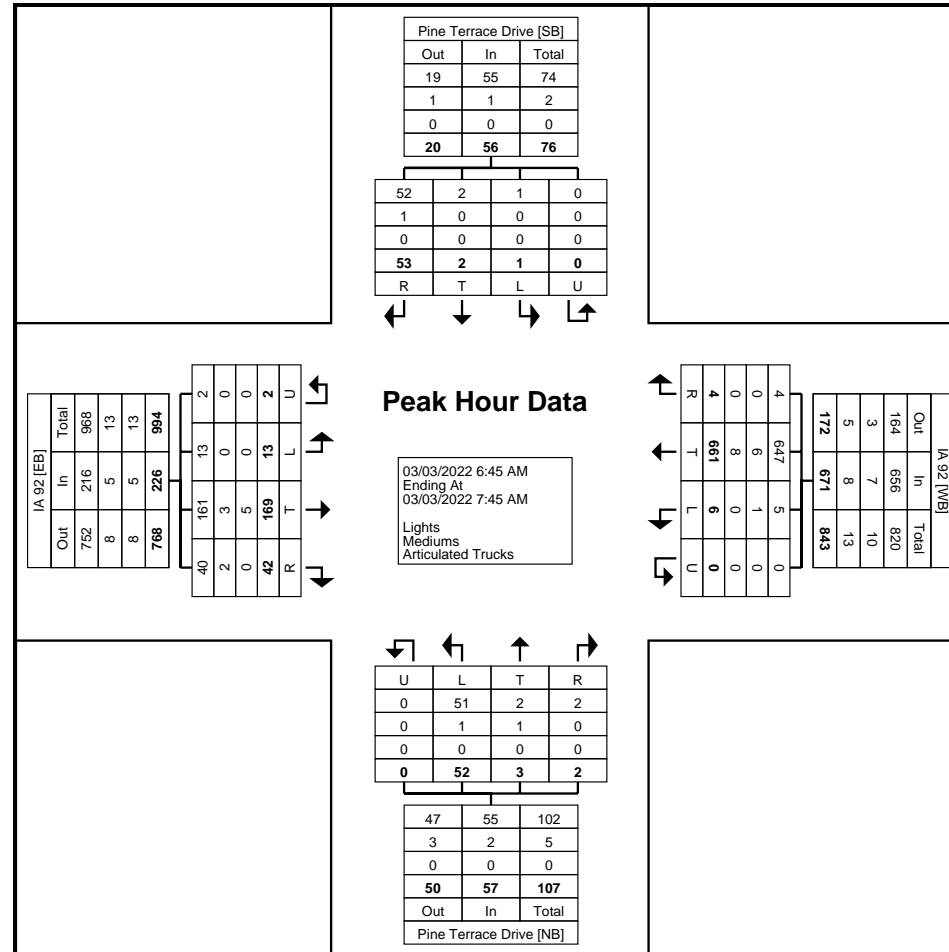
Start Time	IA 92 Eastbound					IA 92 Westbound					Pine Terrace Drive Northbound					Pine Terrace Drive Southbound					Int. Total
	U-Turn	Left	Thru	Right	App. Total	U-Turn	Left	Thru	Right	App. Total	U-Turn	Left	Thru	Right	App. Total	U-Turn	Left	Thru	Right	App. Total	
6:45 AM	0	2	20	5	27	0	0	173	1	174	0	15	0	2	17	0	1	0	13	14	232
7:00 AM	0	2	37	12	51	0	2	143	1	146	0	16	1	0	17	0	0	2	13	15	229
7:15 AM	0	5	55	13	73	0	3	151	0	154	0	10	1	0	11	0	0	0	15	15	253
7:30 AM	2	4	57	12	75	0	1	194	2	197	0	11	1	0	12	0	0	0	12	12	296
Total	2	13	169	42	226	0	6	661	4	671	0	52	3	2	57	0	1	2	53	56	1010
Approach %	0.9	5.8	74.8	18.6	-	0.0	0.9	98.5	0.6	-	0.0	91.2	5.3	3.5	-	0.0	1.8	3.6	94.6	-	-
Total %	0.2	1.3	16.7	4.2	22.4	0.0	0.6	65.4	0.4	66.4	0.0	5.1	0.3	0.2	5.6	0.0	0.1	0.2	5.2	5.5	-
PHF	0.250	0.650	0.741	0.808	0.753	0.000	0.500	0.852	0.500	0.852	0.000	0.813	0.750	0.250	0.838	0.000	0.250	0.250	0.883	0.933	0.853
Lights	2	13	161	40	216	0	5	647	4	656	0	51	2	2	55	0	1	2	52	55	982
% Lights	100.0	100.0	95.3	95.2	95.6	-	83.3	97.9	100.0	97.8	-	98.1	66.7	100.0	96.5	-	100.0	100.0	98.1	98.2	97.2
Mediums	0	0	3	2	5	0	1	6	0	7	0	1	1	0	2	0	0	0	1	1	15
% Mediums	0.0	0.0	1.8	4.8	2.2	-	16.7	0.9	0.0	1.0	-	1.9	33.3	0.0	3.5	-	0.0	0.0	1.9	1.8	1.5
Articulated Trucks	0	0	5	0	5	0	0	8	0	8	0	0	0	0	0	0	0	0	0	0	13
% Articulated Trucks	0.0	0.0	3.0	0.0	2.2	-	0.0	1.2	0.0	1.2	-	0.0	0.0	0.0	0.0	-	0.0	0.0	0.0	0.0	1.3



Felsburg Holt & Ullevig : Omaha (NE)
11422 Miracle Hills Drive Suite 115

Omaha, Nebraska, United States 68154
(402) 445-4405 kornel.gwiazdowski@fhueng.com

Count Name: IA 92 & Pine Terrace Drive
Site Code:
Start Date: 03/03/2022
Page No: 6



Turning Movement Peak Hour Data Plot (6:45 AM)



Felsburg Holt & Ullevig : Omaha (NE)
11422 Miracle Hills Drive Suite 115

Omaha, Nebraska, United States 68154
(402) 445-4405 kornel.gwiazdowski@fhueng.com

Count Name: IA 92 & Pine Terrace Drive
Site Code:
Start Date: 03/03/2022
Page No: 7

Turning Movement Peak Hour Data (3:45 PM)

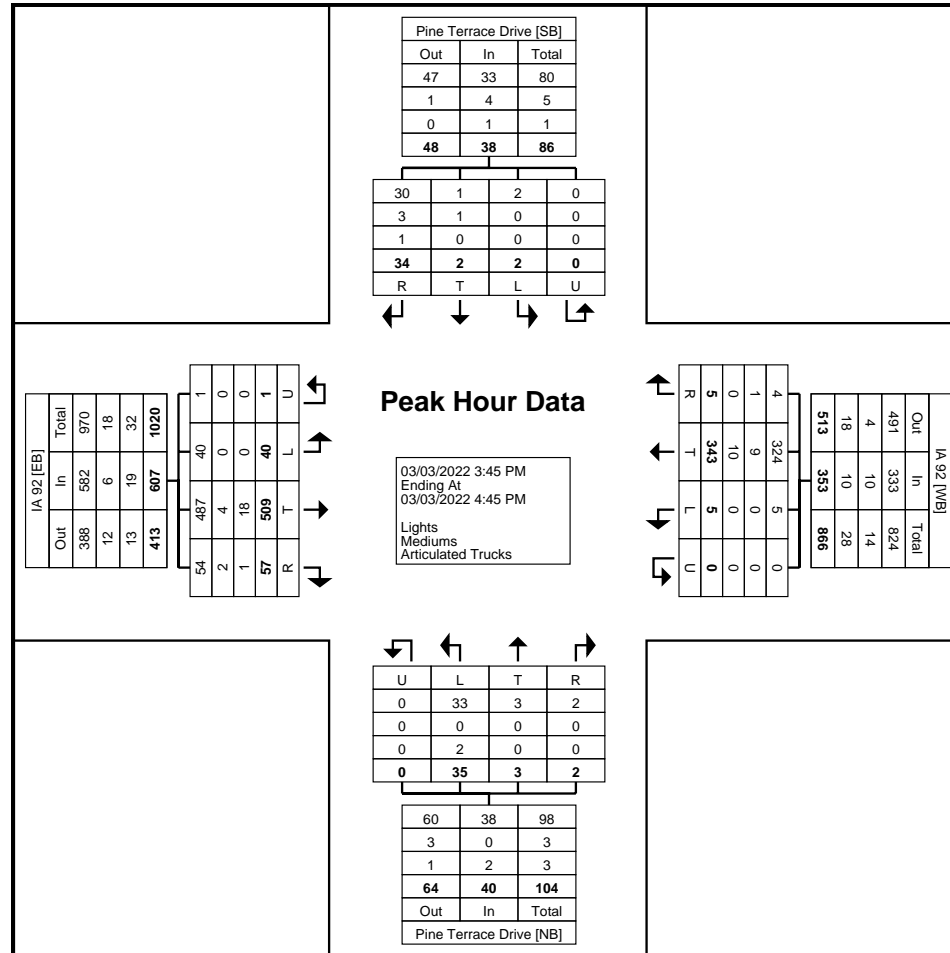
Start Time	IA 92 Eastbound					IA 92 Westbound					Pine Terrace Drive Northbound					Pine Terrace Drive Southbound					Int. Total
	U-Turn	Left	Thru	Right	App. Total	U-Turn	Left	Thru	Right	App. Total	U-Turn	Left	Thru	Right	App. Total	U-Turn	Left	Thru	Right	App. Total	
3:45 PM	0	7	121	16	144	0	1	94	3	98	0	5	1	0	6	0	0	1	13	14	262
4:00 PM	0	11	103	12	126	0	4	78	2	84	0	13	1	1	15	0	2	0	7	9	234
4:15 PM	0	13	149	12	174	0	0	83	0	83	0	9	0	0	9	0	0	1	9	10	276
4:30 PM	1	9	136	17	163	0	0	88	0	88	0	8	1	1	10	0	0	0	5	5	266
Total	1	40	509	57	607	0	5	343	5	353	0	35	3	2	40	0	2	2	34	38	1038
Approach %	0.2	6.6	83.9	9.4	-	0.0	1.4	97.2	1.4	-	0.0	87.5	7.5	5.0	-	0.0	5.3	5.3	89.5	-	-
Total %	0.1	3.9	49.0	5.5	58.5	0.0	0.5	33.0	0.5	34.0	0.0	3.4	0.3	0.2	3.9	0.0	0.2	0.2	3.3	3.7	-
PHF	0.250	0.769	0.854	0.838	0.872	0.000	0.313	0.912	0.417	0.901	0.000	0.673	0.750	0.500	0.667	0.000	0.250	0.500	0.654	0.679	0.940
Lights	1	40	487	54	582	0	5	324	4	333	0	33	3	2	38	0	2	1	30	33	986
% Lights	100.0	100.0	95.7	94.7	95.9	-	100.0	94.5	80.0	94.3	-	94.3	100.0	100.0	95.0	-	100.0	50.0	88.2	86.8	95.0
Mediums	0	0	4	2	6	0	0	9	1	10	0	0	0	0	0	0	0	1	3	4	20
% Mediums	0.0	0.0	0.8	3.5	1.0	-	0.0	2.6	20.0	2.8	-	0.0	0.0	0.0	0.0	-	0.0	50.0	8.8	10.5	1.9
Articulated Trucks	0	0	18	1	19	0	0	10	0	10	0	2	0	0	2	0	0	0	1	1	32
% Articulated Trucks	0.0	0.0	3.5	1.8	3.1	-	0.0	2.9	0.0	2.8	-	5.7	0.0	0.0	5.0	-	0.0	0.0	2.9	2.6	3.1



Felsburg Holt & Ullevig : Omaha (NE)
11422 Miracle Hills Drive Suite 115

Omaha, Nebraska, United States 68154
(402) 445-4405 kornel.gwiazdowski@fhueng.com

Count Name: IA 92 & Pine Terrace Drive
Site Code:
Start Date: 03/03/2022
Page No: 8



Turning Movement Peak Hour Data Plot (3:45 PM)

USLIMIT2

USLIMITS2 Speed Zoning Report

Project Overview

Project Name: IA-92 US Limit 2

Analyst: Felsburg Holt Ullevig

Date: 2022-03-22

Basic Project Information

Project Number: 122100-05 IA 92 and Pine Terrace Warrants
Route Name: IA 92
From: Valley View Drive
To: Eastern Hills DrConcord Loop
State: Iowa
County: Pottawattamie County
City: Rural
Route Type: Road Section in Undeveloped Area
Route Status: Existing

Roadway Information

Section Length: 1.25 mile(s)
Statutory Speed Limit: None
Existing Speed Limit: 50 mph
Adverse Alignment: Yes
Divided/Undivided: Divided
Number of Lanes: 4
Roadside Hazard Rating: 3
Transition Zone: No

Crash Data Information

Crash Data Years: 7.00
Crash AADT: 10392 veh/day
Total Number of Crashes: 22
Total Number of Injury Crashes: 7
Section Crash Rate: 66 per 100 MVM
Section Injury Crash Rate: 21 per 100 MVM
Crash Rate Average for Similar Roads: 151
Injury Rate Average for Similar Roads: 51

Traffic Information

85th Percentile Speed: 57 mph
50th Percentile Speed: 52 mph
AADT: 10392 veh/day

Project Description: Speed Limit Study Along IA-92

Recommended Speed Limit: 55

Note: Sections with adverse alignments may need specific 'advisory speed warnings' which may be different from the general speed limit for the section. See [Procedures for Setting Advisory Speeds on Curves](#), Publication No. FHWA-SA-11-22, June 2011, for more guidance.

Disclaimer: The U.S. Government assumes no liability for the use of the information contained in this report. This report does not constitute a standard, specification, or regulation.

Equations Used in the Crash Data Calculations

Exposure (M)

$M = (\text{Section AADT} * 365 * \text{Section Length} * \text{Duration of Crash Data}) / (100000000)$

$M = (10392 * 365 * 1.25 * 7.00) / (100000000)$

$M = 0.3319$

Crash Rate (Rc)

$$R_c = (\text{Section Crash Average} * 100000000) / (\text{Section AADT} * 365 * \text{Section Length})$$

$$R_c = (3.14 * 100000000) / (10392 * 365 * 1.25)$$

$$R_c = 66.29 \text{ crashes per 100 MVM}$$

Injury Rate (Ri)

$$R_i = (\text{Section Injury Crash Average} * 100000000) / (\text{Section AADT} * 365 * \text{Section Length})$$

$$R_i = (1.00 * 100000000) / (10392 * 365 * 1.25)$$

$$R_i = 21.09 \text{ injuries per 100 MVM}$$

Critical Crash Rate (Cc)

$$C_c = \text{Crash Average of Similar Sections} + 1.645 * (\text{Crash Average of Similar Sections} / \text{Exposure}) ^{(1/2)} + (1 / (2 * \text{Exposure}))$$

$$C_c = 151.00 + 1.645 * (151.00 / 0.3319) ^{(1/2)} + (1 / (2 * 0.3319))$$

$$C_c = 187.59 \text{ crashes per 100 MVM}$$

Critical Injury Rate (Ic)

$$I_c = \text{Injury Crash Average of Similar Sections} + 1.645 * (\text{Injury Crash Average of Similar Sections} / \text{Exposure}) ^{(1/2)} + (1 / (2 * \text{Exposure}))$$

$$I_c = 51.00 + 1.645 * (51.00 / 0.3319) ^{(1/2)} + (1 / (2 * 0.3319))$$

$$I_c = 72.90 \text{ injuries per 100 MVM}$$

MUTCD Warrant Worksheets

MUTCD Volume-based Warrant Evaluation
Pine Terrace Dr & IA-92
Existing (2022)



Major Street: IA-92
 Lanes Moving Traffic: 2 or more
 Approach Speed: 50 MPH
 Option: High speed, rural community

Minor Street: Pine Terrace Dr
 Lanes Moving Traffic: 1
 Right Turn Volume Included: 0% SB, 0% NB

WARRANT 1, Condition A - Minimum Vehicular Volume

70% Satisfied No

	Vehicles per hour 70% (56%)	Peak Hour	2nd Highest	3rd Highest	4th Highest	5th Highest	6th Highest	7th Highest	8th Highest
Both Apprchs. Major Street	420 (336)	959	915	910	842	696	664	667	606
Highest Apprch. Minor Street	105 (84)	40	58	39	40	35	40	34	34

WARRANT 1, Condition B - Interruption of Continuous Traffic

70% Satisfied No

	Vehicles per hour 70% (56%)	Peak Hour	2nd Highest	3rd Highest	4th Highest	5th Highest	6th Highest	7th Highest	8th Highest
Both Apprchs. Major Street	630 (504)	959	915	910	842	696	664	667	606
Highest Apprch. Minor Street	53 (42)	40	58	39	40	35	40	34	34

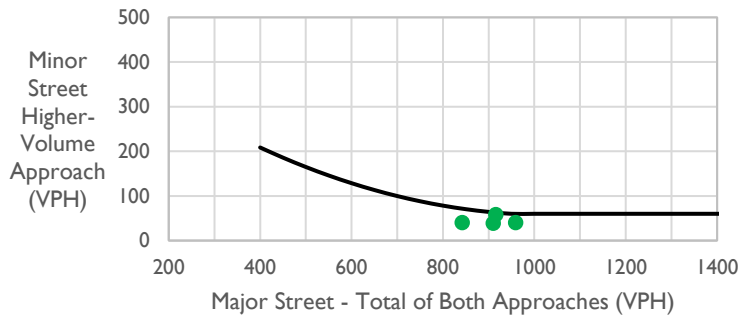
WARRANT 1, Condition A and Condition B

56% Satisfied No

WARRANT 2, Four Hour Volume

70% Satisfied No

	Both Apprchs. Major Street	Higher Vol. Apprch. Minor Street
Peak Hour	959	40
2nd Highest	915	58
3rd Highest	910	39
4th Highest	842	40



Capacity Analysis Worksheets

Intersection												
Int Delay, s/veh	1.9											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↘	↑↑	↗	↘	↑↑			↔			↔	
Traffic Vol, veh/h	13	169	42	6	661	4	52	3	2	1	2	53
Future Vol, veh/h	13	169	42	6	661	4	52	3	2	1	2	53
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	160	-	180	140	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	86	86	86	86	86	86	86	86	86	86	86	86
Heavy Vehicles, %	0	5	5	10	2	0	2	10	0	0	0	2
Mvmt Flow	15	197	49	7	769	5	60	3	2	1	2	62

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	774	0	0	246	0	0	627	1015	99	916	1062	387
Stage 1	-	-	-	-	-	-	227	227	-	786	786	-
Stage 2	-	-	-	-	-	-	400	788	-	130	276	-
Critical Hdwy	4.1	-	-	4.3	-	-	7.54	6.7	6.9	7.5	6.5	6.94
Critical Hdwy Stg 1	-	-	-	-	-	-	6.54	5.7	-	6.5	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.54	5.7	-	6.5	5.5	-
Follow-up Hdwy	2.2	-	-	2.3	-	-	3.52	4.1	3.3	3.5	4	3.32
Pot Cap-1 Maneuver	851	-	-	1261	-	-	368	224	944	230	225	611
Stage 1	-	-	-	-	-	-	755	696	-	356	406	-
Stage 2	-	-	-	-	-	-	597	382	-	866	685	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	851	-	-	1261	-	-	322	219	944	223	220	611
Mov Cap-2 Maneuver	-	-	-	-	-	-	322	219	-	223	220	-
Stage 1	-	-	-	-	-	-	741	683	-	350	404	-
Stage 2	-	-	-	-	-	-	531	380	-	844	673	-

Approach	EB			WB			NB			SB		
HCM Control Delay, s	0.5			0.1			19.1			12.3		
HCM LOS							C			B		

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	321	851	-	-	1261	-	-	558
HCM Lane V/C Ratio	0.206	0.018	-	-	0.006	-	-	0.117
HCM Control Delay (s)	19.1	9.3	-	-	7.9	-	-	12.3
HCM Lane LOS	C	A	-	-	A	-	-	B
HCM 95th %tile Q(veh)	0.8	0.1	-	-	0	-	-	0.4

Intersection												
Int Delay, s/veh	1.6											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	40	509	57	5	343	5	35	3	2	2	2	34
Future Vol, veh/h	40	509	57	5	343	5	35	3	2	2	2	34
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	160	-	180	140	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	94	94	94	94	94	94	94	94	94	94	94	94
Heavy Vehicles, %	0	4	5	0	6	10	6	0	0	0	10	10
Mvmt Flow	43	541	61	5	365	5	37	3	2	2	2	36

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	370	0	0	602	0	0	821	1007	271	736	1066	185
Stage 1	-	-	-	-	-	-	627	627	-	378	378	-
Stage 2	-	-	-	-	-	-	194	380	-	358	688	-
Critical Hdwy	4.1	-	-	4.1	-	-	7.62	6.5	6.9	7.5	6.7	7.1
Critical Hdwy Stg 1	-	-	-	-	-	-	6.62	5.5	-	6.5	5.7	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.62	5.5	-	6.5	5.7	-
Follow-up Hdwy	2.2	-	-	2.2	-	-	3.56	4	3.3	3.5	4.1	3.4
Pot Cap-1 Maneuver	1200	-	-	985	-	-	260	243	733	311	209	801
Stage 1	-	-	-	-	-	-	428	479	-	621	594	-
Stage 2	-	-	-	-	-	-	778	617	-	638	426	-
Platoon blocked, %		-	-	-	-	-						
Mov Cap-1 Maneuver	1200	-	-	985	-	-	239	233	733	297	200	801
Mov Cap-2 Maneuver	-	-	-	-	-	-	239	233	-	297	200	-
Stage 1	-	-	-	-	-	-	413	462	-	599	591	-
Stage 2	-	-	-	-	-	-	736	614	-	609	411	-

Approach	EB			WB			NB			SB		
HCM Control Delay, s	0.5			0.1			22.6			11		
HCM LOS							C			B		

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	247	1200	-	-	985	-	-	642
HCM Lane V/C Ratio	0.172	0.035	-	-	0.005	-	-	0.063
HCM Control Delay (s)	22.6	8.1	-	-	8.7	-	-	11
HCM Lane LOS	C	A	-	-	A	-	-	B
HCM 95th %tile Q(veh)	0.6	0.1	-	-	0	-	-	0.2

John Rasmussen/Engineer

**Discussion on Wabash/Pioneer Trail Traffic Study for
South bound Left Turn Lane.**



March 29, 2022

MEMORANDUM

TO: Mr. John Rasmussen, PE
Pottawattamie County Engineer
223 S. 6th Street
Council Bluffs, IA 51501

FROM: Adam Denney, PE, PTOE
Kornel Gwiazdowski
Felsburg Holt & Ullevig

SUBJECT: Wabash Avenue and Pioneer Trail Warrant Analysis
FHU Reference No. 122100-04

	<p>I hereby certify that this engineering document was prepared by me or under my direct personal supervision and that I am a duly licensed Professional Engineer under the laws of the State of Iowa.</p>
	<p><i>Adam J. Denney</i> Adam Jon Denney 03/29/2022 Date</p>
	<p>License Number: 25097</p>
	<p>My License Renewal Date is December 31, 2022</p>
	<p>Pages or sheets covered by this Seal: All pages in this document</p>

Felsburg Holt & Ullevig (FHU) has evaluated Manual on Uniform Traffic Control Devices (MUTCD) traffic control warrants and crash patterns for the intersection of Wabash Avenue with Pioneer Trail in Pottawattamie County, Iowa. Additionally, auxiliary turn-lanes warrants were evaluated for the intersection. The intersection of Wabash Avenue with Pioneer Trail is currently two-way stop controlled (TWSC) T-intersection with one-lane approaches in all directions.

Roadway Geometrics

The configuration of both Wabash Avenue and Pioneer Trail within the study area are rural two-lane undivided roadways. Wabash Avenue is classified as a minor arterial, and Pioneer Trail is classified as a collector. The posted speed limit on Wabash Avenue is 55 miles per hour (mph). The posted speed limit on Pioneer Trail is 40 mph. The westbound approach at the intersection is stop-controlled, the northbound and southbound approaches are free movements. All approaches at the intersection have a single, shared lane for all movements. There is a multi-use trail, the Wabash Trace Nature Trail, that runs on the south side of Wabash Avenue and along the east side of Pioneer Trail. An underpass for the trail is provided east of the intersection. Overhead lighting is provided for the east leg, Pioneer Trail.

Data Collection

A field review was conducted to confirm roadway geometrics, and a 24-hour turning movement count was conducted by FHU at the study intersection starting at 12:00 AM on Thursday, March 3, 2022. The AM peak hour was determined to be 7:00 AM to 8:00 AM, and the PM peak hour was 4:30 PM to 5:30 PM.

Crash Analysis

Crash data was collected from the Iowa Department of Transportation Iowa Crash Analysis Tool (ICAT) for the most recently available 5 years, starting on January 1, 2015, and ending on December 31, 2019. Crash data for 2020 and 2021 was compiled but was omitted from the analysis due to COVID-19 pandemic's impact on traffic volumes and the number of crashes. During the five-year analysis period, there were a total of 13 crash events at the intersection. A summary of the crash severity, rates, and crash type are provided in **Table 1** and **Table 2**, respectively.

The estimated entering vehicles per day at Wabash Avenue with Pioneer Road is 6,500 vehicles, translating to 2.37 million entering vehicles (MEV) per year. The Iowa statewide crash rate at rural intersections with a daily volume between 5,000 and 9,999 is 0.70 crashes per MEV. Based on the collected crash data, the crash rate at this intersection is 1.095 crashes per MEV. This is above the statewide average crash rate for rural intersections. However, it is assumed that due to the floods in Pottawattamie County in 2019, there was a significant increase in crashes at the location as detouring traffic increased traffic volumes.

Five of the thirteen crashes listed, occurred during nighttime/dark light conditions. Additional, lighting at the intersection may improve driver visibility.

Based on the Iowa DOT Potential for Crash Reduction (PCR) of Intersections, the intersection of Wabash Avenue with Pioneer Trail falls under Safety Tier 2. Tier 2 intersections are described as locations that have the potential for safety improvements. The PCR values for the intersection are 0.30 for all crashes and 0.17 for injurious crashes.

Table 1. Intersection Crash Severity & Crash Rate Summary

Severity	Year							Total	Daily EV	5-Year (MEV)*	Crash Rate per MEV*
	2015	2016	2017	2018	2019	2020'	2021'				
Fatal	0	0	0	0	0	0	0	0	6,500	11.87	1.095
Injury	1	0	1	2	1	0	0	5			
PDO	0	1	1	0	5	1	1	7			
No Report	0	1	0	0	0	0	0	1			
Total	1	2	2	2	6	1	1	13			

'2020 & 2021 Crash Data omitted in crash analysis due to COVID-19

*MEV = Million Entering Vehicles

Table 2. Intersection Crash Type Summary

Year	Intersection Crash Type						Total Crashes
	Angle	Sideswipe (Same)	Sideswipe (Opposite)	Rear-end	Broadside	Other^	
2015	0	0	1	0	0	0	1
2016	1	0	0	1	0	0	2
2017	0	0	0	1	1	0	2
2018	0	0	0	2	0	0	2
2019	0	0	1	5	0	0	6
Total	1	0	2	9	1	0	13

^Other is made up of other crash types/unknown crash type

MUTCD Traffic Control Device Warrant Evaluation

Traffic Signal Warrants

A review was performed to determine if *Manual on Uniform Traffic Control Devices (MUTCD) for Streets and Highways, 2009 Edition* traffic signal Warrant 1 (Eight-Hour Vehicular Volume), Warrant 2 (Four-Hour Vehicular Volume), and/or Warrant 7 (Crash History) are satisfied for the study intersection under Existing (2022) traffic conditions. The intersection was analyzed with 55 mph speed limit on Wabash Avenue and 40 mph speed limit on Pioneer Trail with one lane on the major and minor approaches.

Signal Warrant 1, Warrant 2, and Warrant 7 were **not satisfied** at the Wabash Avenue with Pioneer Trail intersection. Graphical results of the MUTCD Warrant Analysis are included at the end of this memo.

All-way Stop Control Warrants

A review of the study intersection was performed to determine if MUTCD all-way stop warrants were satisfied. Based upon analysis of the count data and historic crashes at the intersection, an all-way stop is **not warranted** based on minimum volumes. A detailed analysis of the volume warrants, as well as the data collected as part of the study, are attached to the end of this memo.

Auxiliary Left-Turn Lane Analysis

Auxiliary left-turn lane at the intersection were analyzed based on the *NCHRP Report 457* and the *Iowa DOT Office of Design Roadway Design Manual* for auxiliary lane guidance. *NCHRP Report 457* provides guidance for determining if an auxiliary left-turn is warranted on the major road of a two-way stop-controlled intersection. For left-turn lanes, *NCHRP Report 457* guidelines are based upon the following measures:

- Major road 85th percentile speed (posted speed can be used if data is unavailable)
- Percent of left-turns in advancing volume
- Major road peak hour advancing and opposing traffic volumes

The *Iowa DOT Office of Design Roadway Design Manual* auxiliary lane guidance for left-turn lanes is based upon thru traffic volumes and the turning traffic volumes for the design year ADTs. Warrants are determined by plotting the traffic volumes in Figure 1 in Chapter 6, Section 6A-1 of the manual.

The AM and PM peak hour volumes for Existing (2022) traffic conditions were examined at the stop-controlled intersection of Wabash Avenue with Pioneer Trail. Graphical results of the NCHRP Auxiliary Left-turn Analysis are included in the **Appendix**.

Based on the results of the NCHRP Auxiliary Left-Turn Lane Warrants and Iowa DOT Auxiliary Lane guidance, a southbound left-turn lane **is warranted** at the intersection of Wabash Avenue with Pioneer Trail. Based on Chapter 6, Section 6A-1 of the *Iowa DOT Office of Design Roadway Design Manual*, the left-turn lane should provide at least 150 feet of vehicle storage with a 10:1 taper.

Auxiliary Right-Turn Lane Analysis

The NCHRP has developed guidance to determine if an auxiliary right-turn is warranted on the major road of a two-way stop-controlled intersection. These guidelines are published in *NCHRP Report 457*. The methodologies are based on an evaluation of the operating and collision costs associated with the turning maneuver relative to the cost of constructing a turn lane.

For right-turn lanes, *NCHRP Report 457* guidelines are based upon the following measures:

- Major road 85th percentile speed (posted speed can be used if data is unavailable)
- Major road peak hour approaching traffic volumes
- Right-turn traffic volumes

The AM and PM peak hour volumes for Existing (2022) traffic conditions were examined at the stop-controlled intersection of Wabash Avenue with Pioneer Trail. Graphical results of the analysis are included in the **Appendix**.

Based on the results of NCHRP Auxiliary Right-Turn Lane Warrants, a northbound right-turn lane is **not warranted** at the intersection of Wabash Avenue with Pioneer Trail.

Minor Road Approach Analysis

NCHRP Report 457 also provides guidance on when an additional approach lane on the minor leg of a two-way stop-controlled intersection. It is based on the need to provide the side street with an acceptable level of service. To determine the approach geometry, *NCHRP Report 457* guidelines are based upon the following measures:

- Major road peak hour traffic volumes (total of both directions)
- Minor road peak hour approaching traffic volumes
- Minor road right-turn traffic volumes
- Percentage of minor road right-turns

The AM and PM peak hour volumes for Existing (2022) traffic conditions were examined at the stop-controlled intersection of Wabash Avenue with Pioneer Trail. Graphical results of the NCHRP Auxiliary Minor Road Approach Analysis are included in the **Appendix**.

Based on the results of the NCHRP Minor Approach Warrants, a westbound two-lane approach is **not warranted** at the intersection of Wabash Avenue with Pioneer Trail.

Existing (2022) Traffic Operations

Traffic operations were analyzed for the study intersection using procedures documented in the *Highway Capacity Manual (HCM) 6th Edition*, Transportation Research Board, 2016. From the analyses, a key measure or “level of service” rating of the traffic operational conditions was obtained. In general, level of service (LOS) is a qualitative assessment of traffic operational conditions within a traffic stream in terms of the average stopped delay per vehicle at a controlled intersection.

Levels of service are described by a letter designation of either A, B, C, D, E or F, with LOS A representing essentially uninterrupted flow, and LOS F representing a breakdown of traffic flow with noticeable congestion and delay. Unsignalized, or stop sign controlled, intersection capacity analyses produce LOS results for each movement which must yield to conflicting traffic at the intersection. **Table 3** summarizes LOS criteria for signalized and unsignalized (stop sign controlled) intersections.

Table 3. Level of Service (LOS) Criteria

Level of Service	Average Control Delay per Vehicle (sec/veh)	
	Signalized Intersections	Stop Sign Controlled Intersections
A	≤ 10	≤ 10
B	> 10 to 20	> 10 to 15
C	> 20 to 35	> 15 to 25
D	> 35 to 55	> 25 to 35
E	> 55 to 80	> 35 to 50
F	> 80	> 50

HCM 6th Edition, Exhibit 19-8 & Exhibit 20-2

Synchro traffic analysis software was utilized to analyze traffic operations at the study intersection. For Existing (2022) traffic conditions, all movements at the intersection of Wabash Avenue with Pioneer Trail operate at LOS B or better during the AM and PM peak hours.

Summary and Recommendations

Traffic operations were evaluated at the study intersection for Existing (2022) traffic conditions. Based upon Existing (2022) traffic conditions, all intersection movements operate at LOS B or better during the AM and PM peak hour.

The following is recommended:

- Based on MUTCD Signal Warrant Analysis, a traffic signal is **not warranted** at the intersection of Wabash Avenue with Pioneer Trail.
- Based on the NCHRP Left-Turn Lane Warrants and the Iowa DOT Roadway Design Manual, **it is recommended** that a southbound left-turn lane be provided at the intersection.
 - The turn-lane should provide 150 feet of vehicle storage with a 10:1 taper.
 - The intersection crash rate was determined to be above the statewide average, with most crashes being rear-end crashes involving two southbound vehicles on Wabash Avenue. A southbound left-turn would help alleviate the occurrence of rear-end crashes at the intersection.
- As a short-term improvement (before the left-turn lane is provided), **it is recommended** that a Side Road warning sign (W2-2) be provided in advance of the intersection on the southbound approach to inform drivers of the intersection ahead and minimize rear-end crashes. Based on Table 2C-4 of the MUTCD, the sign should be installed 325 feet in advance of the intersection. A supplemental warning plaque indicating the “325 FEET” may be provided below the warning sign.
- An alternative to the short-term improvement would be providing a queue detection system. This would include a Be Prepared To Stop Sign (W3-4) in advance of the intersection on the southbound approach, a flashing beacon, and a supplementary When Flashing (W16-13P) sign. Speed sensors and/or vehicle detector sensors would be used to detect stopped southbound traffic or queues at the intersection to activate the beacons to flash.
- Providing additional lighting at the intersection should be considered as five of the thirteen crashes occurred during nighttime/dark light conditions. The additional lighting should provide drivers with greater visibility.
- Traffic operations and crash performance should continue to be monitored at the intersection. As development continues and volumes increase, traffic control warrants should be re-evaluated.

Appendix

- Traffic Count Data
- Crash Data
- MUTCD Warrant Worksheets
- NCHRP Turn Lane Warrant Worksheets
- Capacity Analysis Worksheets

Traffic Count Data



Felsburg Holt & Ullevig : Omaha (NE)
11422 Miracle Hills Drive Suite 115

Omaha, Nebraska, United States 68154
(402) 445-4405 kornel.gwiazdowski@fhueng.com

Count Name: Wabash Avenue & Pioneer Trail
Site Code:
Start Date: 03/03/2022
Page No: 1

Turning Movement Data

Start Time	Wabash Ave Eastbound				Wabash Ave Westbound				Pioneer Trail Southbound				Int. Total
	U-Turn	Left	Thru	App. Total	U-Turn	Thru	Right	App. Total	U-Turn	Left	Right	App. Total	
12:00 AM	0	1	3	4	0	2	0	2	0	0	0	0	6
12:15 AM	0	3	2	5	0	1	0	1	0	1	1	2	8
12:30 AM	0	3	1	4	0	4	0	4	0	0	0	0	8
12:45 AM	0	0	4	4	0	1	0	1	0	0	1	1	6
Hourly Total	0	7	10	17	0	8	0	8	0	1	2	3	28
1:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
1:15 AM	0	1	1	2	0	0	0	0	0	0	1	1	3
1:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
1:45 AM	0	2	1	3	0	1	0	1	0	0	2	2	6
Hourly Total	0	3	2	5	0	1	0	1	0	0	3	3	9
2:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
2:15 AM	0	1	0	1	0	0	0	0	0	0	0	0	1
2:30 AM	0	1	2	3	0	0	0	0	0	0	0	0	3
2:45 AM	0	0	0	0	0	0	0	0	0	0	1	1	1
Hourly Total	0	2	2	4	0	0	0	0	0	0	1	1	5
3:00 AM	0	0	2	2	0	0	0	0	0	0	0	0	2
3:15 AM	0	0	0	0	0	2	0	2	0	0	2	2	4
3:30 AM	0	0	0	0	0	0	0	0	0	0	1	1	1
3:45 AM	0	2	0	2	0	0	0	0	0	0	1	1	3
Hourly Total	0	2	2	4	0	2	0	2	0	0	4	4	10
4:00 AM	0	0	0	0	0	1	0	1	0	1	0	1	2
4:15 AM	0	1	1	2	0	1	0	1	0	0	2	2	5
4:30 AM	0	1	2	3	0	8	0	8	0	1	6	7	18
4:45 AM	0	2	5	7	0	6	0	6	0	0	5	5	18
Hourly Total	0	4	8	12	0	16	0	16	0	2	13	15	43
5:00 AM	0	1	5	6	0	6	0	6	0	0	9	9	21
5:15 AM	0	1	10	11	0	9	0	9	0	0	9	9	29
5:30 AM	0	1	22	23	0	19	0	19	0	0	11	11	53
5:45 AM	0	2	10	12	0	20	0	20	0	0	8	8	40
Hourly Total	0	5	47	52	0	54	0	54	0	0	37	37	143
6:00 AM	0	2	12	14	0	22	0	22	0	0	17	17	53
6:15 AM	0	3	17	20	0	37	2	39	0	1	13	14	73
6:30 AM	0	5	18	23	0	27	0	27	0	1	32	33	83
6:45 AM	0	4	18	22	0	47	1	48	0	0	24	24	94
Hourly Total	0	14	65	79	0	133	3	136	0	2	86	88	303
7:00 AM	0	7	30	37	0	65	0	65	0	0	46	46	148

7:15 AM	0	13	20	33	0	55	1	56	0	1	45	46	135
7:30 AM	0	12	42	54	0	47	0	47	0	2	47	49	150
7:45 AM	0	9	39	48	0	59	0	59	0	0	31	31	138
Hourly Total	0	41	131	172	0	226	1	227	0	3	169	172	571
8:00 AM	0	7	19	26	0	42	0	42	0	1	24	25	93
8:15 AM	0	13	19	32	0	42	0	42	0	0	12	12	86
8:30 AM	0	7	22	29	0	41	0	41	0	2	27	29	99
8:45 AM	0	9	14	23	0	38	0	38	0	1	14	15	76
Hourly Total	0	36	74	110	0	163	0	163	0	4	77	81	354
9:00 AM	0	10	24	34	0	28	3	31	0	0	18	18	83
9:15 AM	0	8	20	28	0	28	0	28	0	1	16	17	73
9:30 AM	0	13	15	28	0	28	1	29	1	0	13	14	71
9:45 AM	0	14	19	33	0	31	1	32	0	1	10	11	76
Hourly Total	0	45	78	123	0	115	5	120	1	2	57	60	303
10:00 AM	0	10	17	27	0	25	1	26	0	0	22	22	75
10:15 AM	0	14	15	29	0	30	1	31	0	0	11	11	71
10:30 AM	0	16	21	37	0	28	0	28	0	1	14	15	80
10:45 AM	0	16	30	46	0	35	0	35	0	1	15	16	97
Hourly Total	0	56	83	139	0	118	2	120	0	2	62	64	323
11:00 AM	0	8	16	24	0	37	0	37	0	0	15	15	76
11:15 AM	0	19	30	49	0	33	1	34	0	0	16	16	99
11:30 AM	0	12	30	42	0	34	0	34	0	3	20	23	99
11:45 AM	0	18	29	47	0	38	0	38	0	3	21	24	109
Hourly Total	0	57	105	162	0	142	1	143	0	6	72	78	383
12:00 PM	0	19	29	48	0	27	1	28	0	2	21	23	99
12:15 PM	0	13	30	43	0	36	1	37	0	0	9	9	89
12:30 PM	0	9	34	43	0	34	0	34	0	1	12	13	90
12:45 PM	0	18	39	57	0	27	0	27	1	2	10	13	97
Hourly Total	0	59	132	191	0	124	2	126	1	5	52	58	375
1:00 PM	0	21	39	60	0	28	1	29	0	1	19	20	109
1:15 PM	0	10	23	33	0	23	0	23	0	2	12	14	70
1:30 PM	0	20	35	55	0	21	1	22	0	2	18	20	97
1:45 PM	0	17	27	44	0	33	2	35	0	2	10	12	91
Hourly Total	0	68	124	192	0	105	4	109	0	7	59	66	367
2:00 PM	0	17	37	54	0	23	1	24	0	0	18	18	96
2:15 PM	0	29	29	58	0	29	3	32	0	2	14	16	106
2:30 PM	1	15	41	57	0	33	1	34	0	1	16	17	108
2:45 PM	0	23	47	70	0	32	0	32	0	3	14	17	119
Hourly Total	1	84	154	239	0	117	5	122	0	6	62	68	429
3:00 PM	0	21	52	73	0	45	1	46	0	0	16	16	135
3:15 PM	0	27	40	67	0	32	0	32	0	0	22	22	121
3:30 PM	0	37	53	90	0	35	0	35	0	1	20	21	146
3:45 PM	0	37	47	84	0	38	1	39	0	0	13	13	136
Hourly Total	0	122	192	314	0	150	2	152	0	1	71	72	538
4:00 PM	0	34	52	86	0	50	2	52	0	0	26	26	164
4:15 PM	0	40	51	91	0	31	1	32	0	0	19	19	142
4:30 PM	0	29	58	87	0	49	0	49	0	0	25	25	161
4:45 PM	0	33	51	84	0	47	2	49	0	0	22	22	155
Hourly Total	0	136	212	348	0	177	5	182	0	0	92	92	622
5:00 PM	0	36	59	95	0	59	1	60	0	1	16	17	172
5:15 PM	0	49	61	110	0	44	2	46	0	2	23	25	181
5:30 PM	0	37	55	92	0	32	2	34	0	2	32	34	160

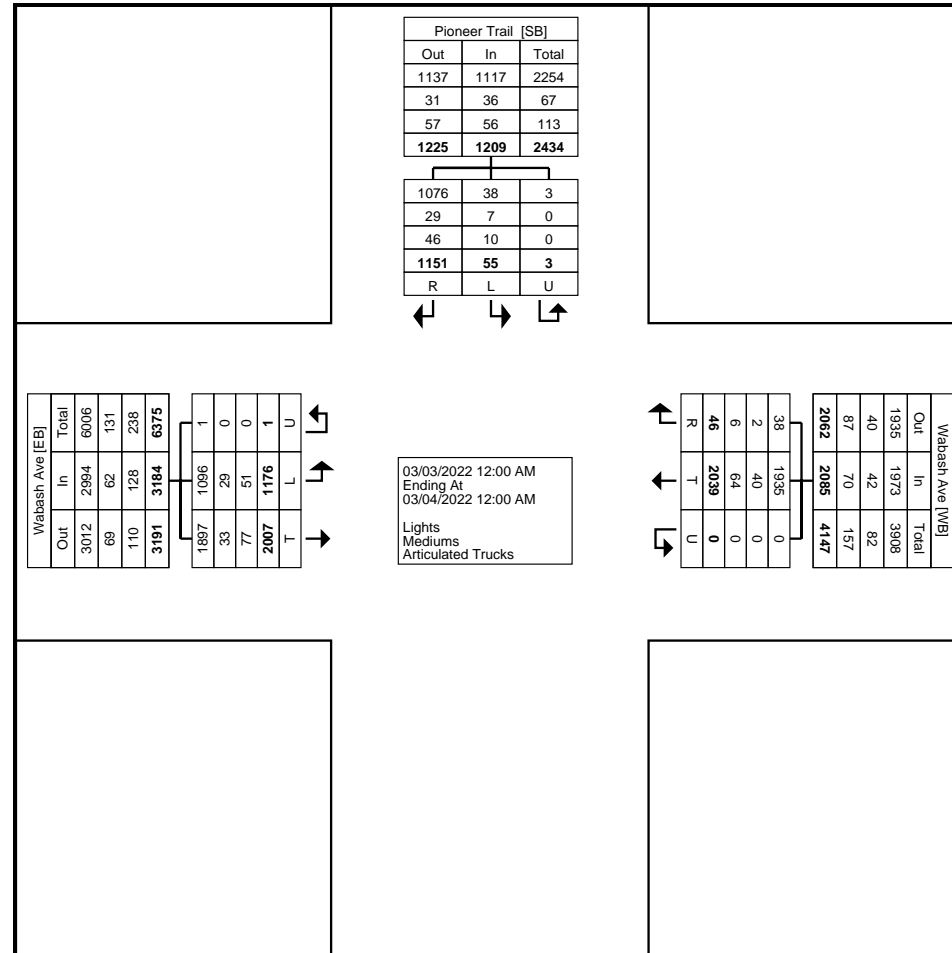
5:45 PM	0	27	39	66	0	29	2	31	0	1	18	19	116
Hourly Total	0	149	214	363	0	164	7	171	0	6	89	95	629
6:00 PM	0	29	44	73	0	34	0	34	1	0	20	21	128
6:15 PM	0	29	31	60	0	25	0	25	0	2	20	22	107
6:30 PM	0	12	22	34	0	23	0	23	0	0	12	12	69
6:45 PM	0	12	29	41	0	20	1	21	0	1	10	11	73
Hourly Total	0	82	126	208	0	102	1	103	1	3	62	66	377
7:00 PM	0	25	24	49	0	18	0	18	0	1	5	6	73
7:15 PM	0	23	29	52	0	16	0	16	0	0	11	11	79
7:30 PM	0	19	27	46	0	10	1	11	0	1	7	8	65
7:45 PM	0	24	20	44	0	14	1	15	0	0	7	7	66
Hourly Total	0	91	100	191	0	58	2	60	0	2	30	32	283
8:00 PM	0	13	22	35	0	7	1	8	0	2	6	8	51
8:15 PM	0	12	17	29	0	8	2	10	0	1	6	7	46
8:30 PM	0	12	14	26	0	10	0	10	0	0	9	9	45
8:45 PM	0	11	14	25	0	3	0	3	0	0	2	2	30
Hourly Total	0	48	67	115	0	28	3	31	0	3	23	26	172
9:00 PM	0	13	13	26	0	8	1	9	0	0	2	2	37
9:15 PM	0	8	9	17	0	7	0	7	0	0	2	2	26
9:30 PM	0	7	5	12	0	6	0	6	0	0	6	6	24
9:45 PM	0	8	7	15	0	2	0	2	0	0	3	3	20
Hourly Total	0	36	34	70	0	23	1	24	0	0	13	13	107
10:00 PM	0	7	4	11	0	1	1	2	0	0	4	4	17
10:15 PM	0	4	6	10	0	2	0	2	0	0	3	3	15
10:30 PM	0	2	8	10	0	5	0	5	0	0	4	4	19
10:45 PM	0	1	9	10	0	2	0	2	0	0	1	1	13
Hourly Total	0	14	27	41	0	10	1	11	0	0	12	12	64
11:00 PM	0	6	5	11	0	2	0	2	0	0	2	2	15
11:15 PM	0	3	6	9	0	0	1	1	0	0	0	0	10
11:30 PM	0	3	4	7	0	0	0	0	0	0	1	1	8
11:45 PM	0	3	3	6	0	1	0	1	0	0	0	0	7
Hourly Total	0	15	18	33	0	3	1	4	0	0	3	3	40
Grand Total	1	1176	2007	3184	0	2039	46	2085	3	55	1151	1209	6478
Approach %	0.0	36.9	63.0	-	0.0	97.8	2.2	-	0.2	4.5	95.2	-	-
Total %	0.0	18.2	31.0	49.2	0.0	31.5	0.7	32.2	0.0	0.8	17.8	18.7	-
Lights	1	1096	1897	2994	0	1935	38	1973	3	38	1076	1117	6084
% Lights	100.0	93.2	94.5	94.0	-	94.9	82.6	94.6	100.0	69.1	93.5	92.4	93.9
Mediums	0	29	33	62	0	40	2	42	0	7	29	36	140
% Mediums	0.0	2.5	1.6	1.9	-	2.0	4.3	2.0	0.0	12.7	2.5	3.0	2.2
Articulated Trucks	0	51	77	128	0	64	6	70	0	10	46	56	254
% Articulated Trucks	0.0	4.3	3.8	4.0	-	3.1	13.0	3.4	0.0	18.2	4.0	4.6	3.9



Felsburg Holt & Ullevig : Omaha (NE)
11422 Miracle Hills Drive Suite 115

Omaha, Nebraska, United States 68154
(402) 445-4405 kornel.gwiazdowski@fhueng.com

Count Name: Wabash Avenue & Pioneer Trail
Site Code:
Start Date: 03/03/2022
Page No: 4



Turning Movement Data Plot



Felsburg Holt & Ullevig : Omaha (NE)
11422 Miracle Hills Drive Suite 115

Omaha, Nebraska, United States 68154
(402) 445-4405 kornel.gwiazdowski@fhueng.com

Count Name: Wabash Avenue & Pioneer Trail
Site Code:
Start Date: 03/03/2022
Page No: 5

Turning Movement Peak Hour Data (7:00 AM)

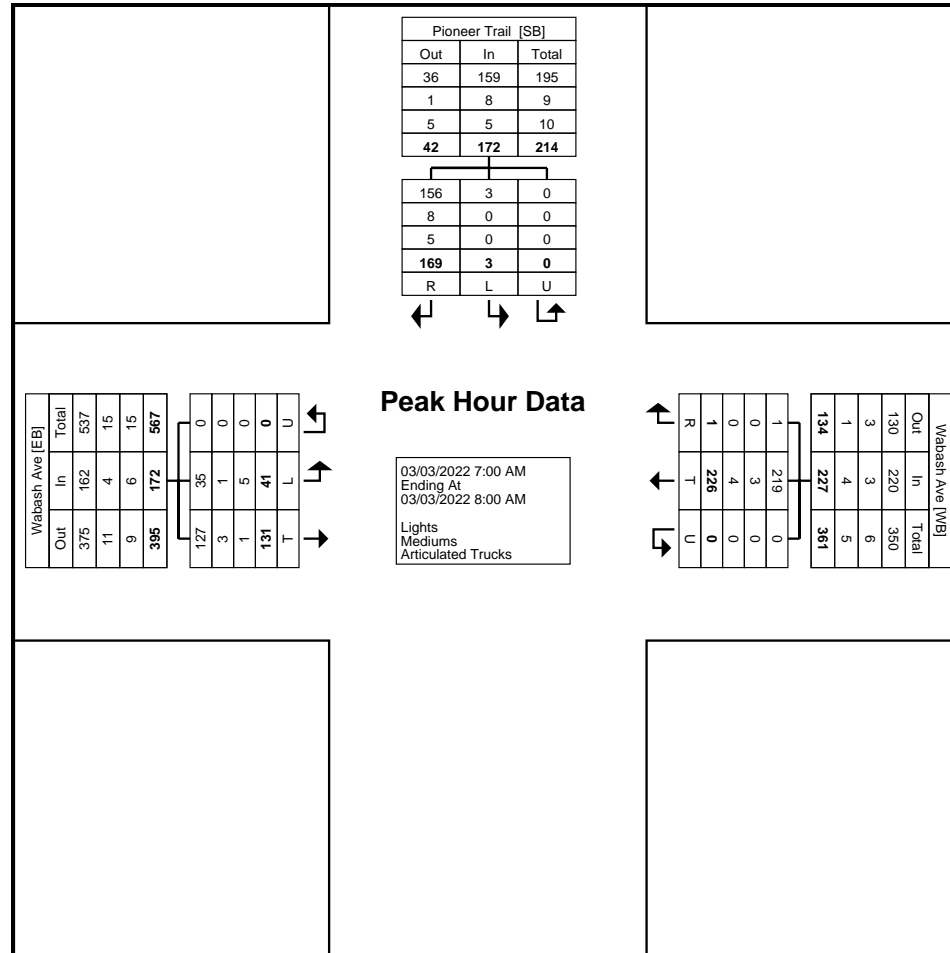
Start Time	Wabash Ave Eastbound				Wabash Ave Westbound				Pioneer Trail Southbound				Int. Total
	U-Turn	Left	Thru	App. Total	U-Turn	Thru	Right	App. Total	U-Turn	Left	Right	App. Total	
7:00 AM	0	7	30	37	0	65	0	65	0	0	46	46	148
7:15 AM	0	13	20	33	0	55	1	56	0	1	45	46	135
7:30 AM	0	12	42	54	0	47	0	47	0	2	47	49	150
7:45 AM	0	9	39	48	0	59	0	59	0	0	31	31	138
Total	0	41	131	172	0	226	1	227	0	3	169	172	571
Approach %	0.0	23.8	76.2	-	0.0	99.6	0.4	-	0.0	1.7	98.3	-	-
Total %	0.0	7.2	22.9	30.1	0.0	39.6	0.2	39.8	0.0	0.5	29.6	30.1	-
PHF	0.000	0.788	0.780	0.796	0.000	0.869	0.250	0.873	0.000	0.375	0.899	0.878	0.952
Lights	0	35	127	162	0	219	1	220	0	3	156	159	541
% Lights	-	85.4	96.9	94.2	-	96.9	100.0	96.9	-	100.0	92.3	92.4	94.7
Mediums	0	1	3	4	0	3	0	3	0	0	8	8	15
% Mediums	-	2.4	2.3	2.3	-	1.3	0.0	1.3	-	0.0	4.7	4.7	2.6
Articulated Trucks	0	5	1	6	0	4	0	4	0	0	5	5	15
% Articulated Trucks	-	12.2	0.8	3.5	-	1.8	0.0	1.8	-	0.0	3.0	2.9	2.6



Felsburg Holt & Ullevig : Omaha (NE)
11422 Miracle Hills Drive Suite 115

Omaha, Nebraska, United States 68154
(402) 445-4405 kornel.gwiazdowski@fhueng.com

Count Name: Wabash Avenue & Pioneer Trail
Site Code:
Start Date: 03/03/2022
Page No: 6



Turning Movement Peak Hour Data Plot (7:00 AM)



Felsburg Holt & Ullevig : Omaha (NE)
11422 Miracle Hills Drive Suite 115

Omaha, Nebraska, United States 68154
(402) 445-4405 kornel.gwiazdowski@fhueng.com

Count Name: Wabash Avenue & Pioneer Trail
Site Code:
Start Date: 03/03/2022
Page No: 7

Turning Movement Peak Hour Data (4:30 PM)

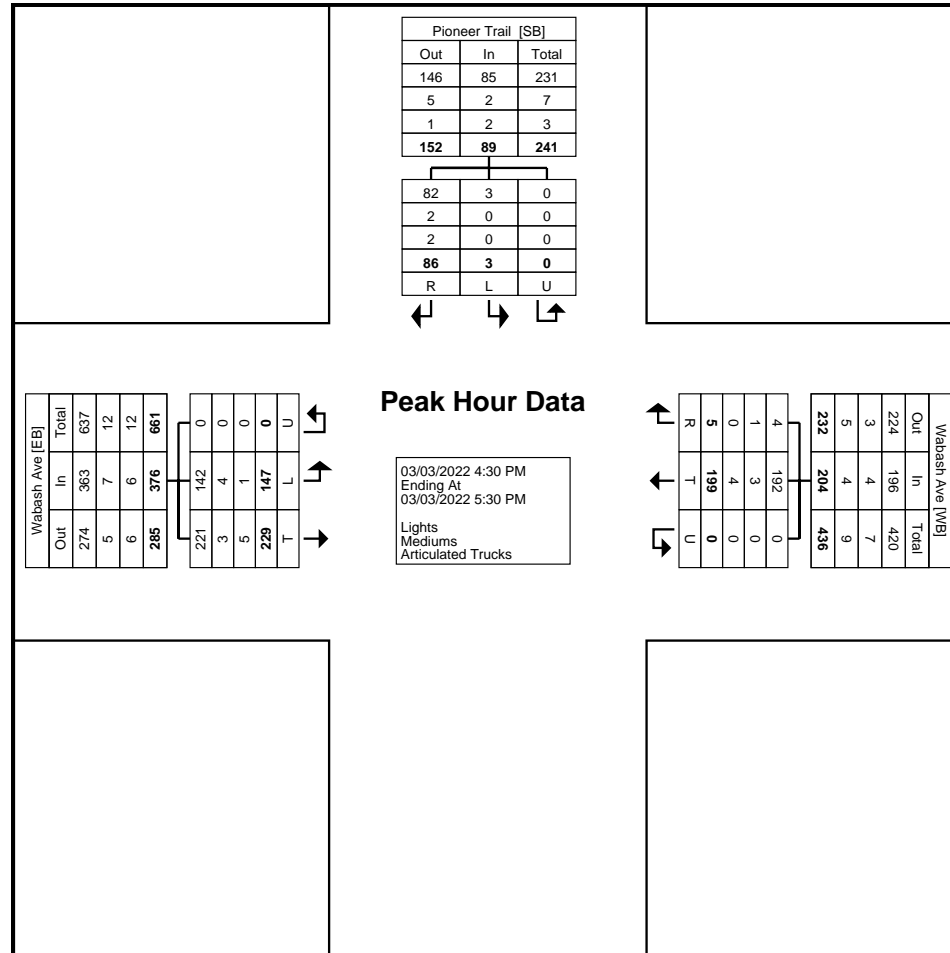
Start Time	Wabash Ave Eastbound				Wabash Ave Westbound				Pioneer Trail Southbound				Int. Total
	U-Turn	Left	Thru	App. Total	U-Turn	Thru	Right	App. Total	U-Turn	Left	Right	App. Total	
4:30 PM	0	29	58	87	0	49	0	49	0	0	25	25	161
4:45 PM	0	33	51	84	0	47	2	49	0	0	22	22	155
5:00 PM	0	36	59	95	0	59	1	60	0	1	16	17	172
5:15 PM	0	49	61	110	0	44	2	46	0	2	23	25	181
Total	0	147	229	376	0	199	5	204	0	3	86	89	669
Approach %	0.0	39.1	60.9	-	0.0	97.5	2.5	-	0.0	3.4	96.6	-	-
Total %	0.0	22.0	34.2	56.2	0.0	29.7	0.7	30.5	0.0	0.4	12.9	13.3	-
PHF	0.000	0.750	0.939	0.855	0.000	0.843	0.625	0.850	0.000	0.375	0.860	0.890	0.924
Lights	0	142	221	363	0	192	4	196	0	3	82	85	644
% Lights	-	96.6	96.5	96.5	-	96.5	80.0	96.1	-	100.0	95.3	95.5	96.3
Mediums	0	4	3	7	0	3	1	4	0	0	2	2	13
% Mediums	-	2.7	1.3	1.9	-	1.5	20.0	2.0	-	0.0	2.3	2.2	1.9
Articulated Trucks	0	1	5	6	0	4	0	4	0	0	2	2	12
% Articulated Trucks	-	0.7	2.2	1.6	-	2.0	0.0	2.0	-	0.0	2.3	2.2	1.8



Felsberg Holt & Ullevig : Omaha (NE)
11422 Miracle Hills Drive Suite 115

Omaha, Nebraska, United States 68154
(402) 445-4405 kornel.gwiazdowski@fhueng.com

Count Name: Wabash Avenue & Pioneer Trail
Site Code:
Start Date: 03/03/2022
Page No: 8



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

Crash Data



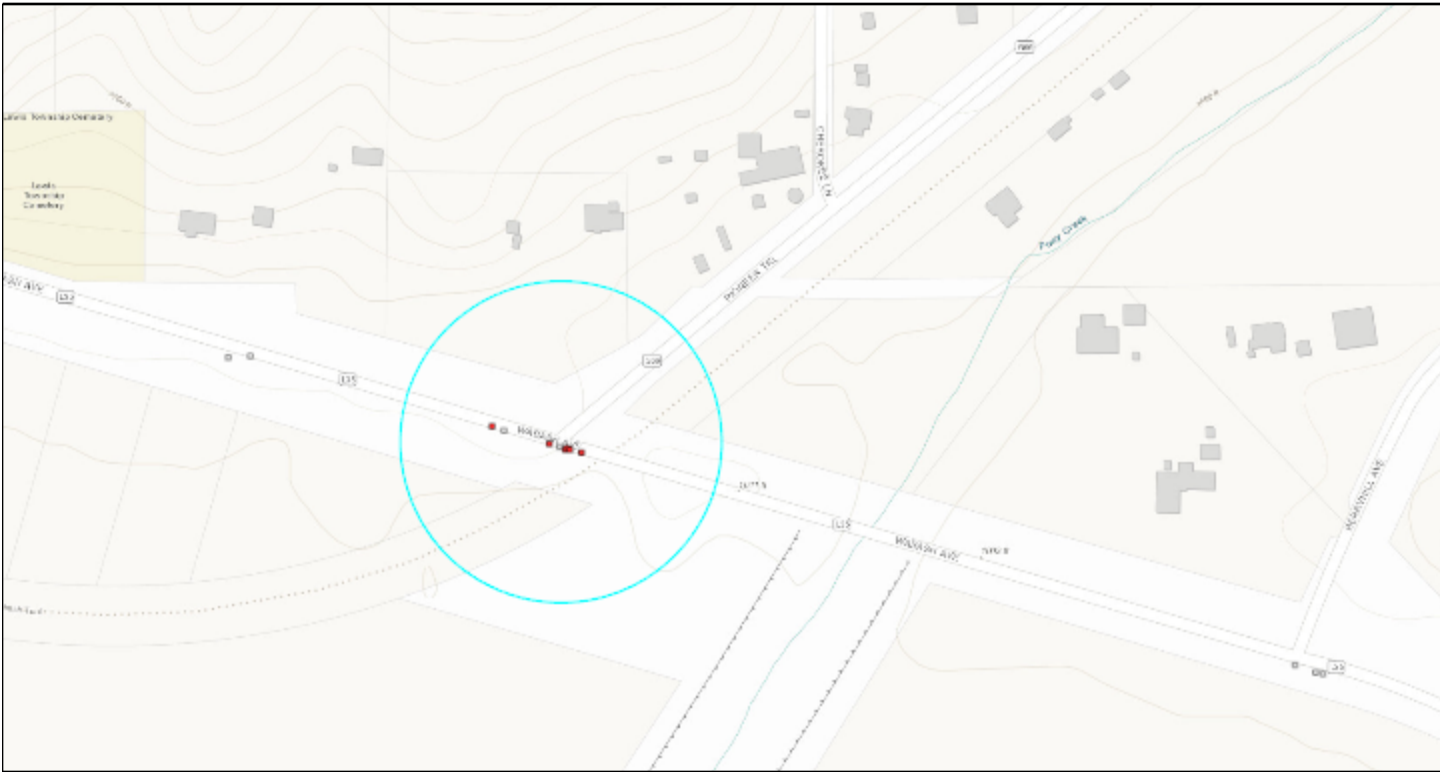
Iowa Crash Analysis Tool
Quick Report
2015-2021

Crash Severity	15
Fatal Crash	0
Suspected Serious Injury Crash	2
Suspected Minor Injury Crash	3
Possible/Unknown Injury Crash	3
Property Damage Only	7

Injury Status Summary	12
Fatalities	0
Suspected serious/incapacitating	3
Suspected minor/non-incapacitating	4
Possible (complaint of pain/injury)	5
Unknown	0

Property/Vehicles/Occupants	
Property Damage Total (dollars):	198,700.00
Average (per crash dollars):	13,246.67
Total Vehicles:	30.00
Average (per crash):	2.00
Total Occupants:	43.00
Average (per crash):	2.87

Average Severity	
Fatalities/Fatal Crash:	0.00
Fatalities/Crash:	0.00
Injuries/Crash:	0.80
Major Injuries/Crash:	0.20
Minor Injuries/Crash:	0.27
Possible/Unknown Injuries/Crash:	0.33





Iowa Crash Analysis Tool
Quick Report
2015-2021

Major Cause			15
Animal	0	Ran traffic signal	0
Ran stop sign	0	Failed to yield to emergency vehicle	0
FTYROW: At uncontrolled intersection	0	FTYROW: Making right turn on red signal	0
FTYROW: From stop sign	0	FTYROW: From yield sign	0
FTYROW: Making left turn	2	FTYROW: From driveway	0
FTYROW: From parked position	0	FTYROW: To pedestrian	0
FTYROW: Other	0	Drove around RR grade crossing gates	0
Disregarded RR Signal	0	Crossed centerline (undivided)	0
Crossed median (divided)	0	Traveling wrong way or on wrong side of road	0
Aggressive driving/road rage	0	Driving too fast for conditions	0
Exceeded authorized speed	0	Improper or erratic lane changing	0
Operating vehicle in an reckless, erratic, ca...	0	Followed too close	8
Passing: On wrong side	0	Passing: Where prohibited by signs/markings	0
Passing: With insufficient distance/inadequa...	0	Passing: Through/around barrier	0
Passing: Other passing	0	Made improper turn	0
Driver Distraction: Manual operation of an e...	0	Driver Distraction: Talking on a hand-held d...	0
Driver Distraction: Talking on a hands free ...	0	Driver Distraction: Adjusting devices (radio...	0
Driver Distraction: Other electronic device ...	0	Driver Distraction: Passenger	0
Driver Distraction: Unrestrained animal	0	Driver Distraction: Reaching for object(s)/f...	0
Driver Distraction: Inattentive/lost in thou...	1	Driver Distraction: Other interior distracti...	0
Driver Distraction: Exterior distraction	0	Ran off road - right	1
Ran off road - straight	0	Ran off road - left	0
Lost control	1	Swerving/Evasive Action	0
Over correcting/over steering	0	Failed to keep in proper lane	0
Failure to signal intentions	0	Traveling on prohibited traffic way	0
Vehicle stopped on railroad tracks	0	Other: Vision obstructed	0
Other: Improper operation	0	Other: Disregarded warning sign	0
Other: Disregarded signs/road markings	0	Other: Illegal off-road driving	0
Downhill runaway	0	Separation of units	0
Towing improperly	0	Cargo/equipment loss or shift	0
Equipment failure	0	Oversized load/vehicle	0
Other: Getting off/out of vehicle	0	Failure to dim lights/have lights on	0
Improper backing	0	Improper starting	0
Illegally parked/unattended	0	Driving less than the posted speed limit	0
Operator inexperience	0	Other	1
Unknown	1	Not reported	0
Other: No improper action	0		



**Iowa Crash Analysis Tool
Quick Report
2015-2021**

Time of Day/Day of Week														
Day of Week	12 AM to 2 AM	2 AM to 4 AM	4 AM to 6 AM	6 AM to 8 AM	8 AM to 10 AM	10 AM to Noon	Noon to 2 PM	2 PM to 4 PM	4 PM to 6 PM	6 PM to 8 PM	8 PM to 10 PM	10 PM to 12 AM	Not reported	Total
Sunday	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Monday	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Tuesday	0	0	0	1	0	1	0	0	0	1	0	0	0	3
Wednesday	0	0	0	0	0	0	1	1	1	2	0	0	0	5
Thursday	0	0	0	1	0	0	0	0	0	1	1	0	0	3
Friday	0	0	0	1	0	0	0	0	0	1	1	0	0	3
Saturday	0	0	0	0	0	1	0	0	0	0	0	0	0	1
Total	0	0	0	3	0	2	1	1	1	5	2	0	0	15

Manner of Crash Collision	15
Non-collision (single vehicle)	0
Head-on (front to front)	0
Rear-end (front to rear)	11
Angle, oncoming left turn	1
Broadside (front to side)	1
Sideswipe, same direction	0
Sideswipe, opposite direction	2
Rear to rear	0
Rear to side	0
Not reported	0
Other	0
Unknown	0

Surface Conditions	15
Dry	13
Wet	2
Ice/frost	0
Snow	0
Slush	0
Mud, dirt	0
Water (standing or moving)	0
Sand	0
Oil	0
Gravel	0
Not reported	0
Other	0
Unknown	0

Fixed Object Struck	30
Bridge overhead structure	0
Bridge/bridge rail parapet	0
Ditch	0
Ground	0
Guardrail - face	0
Concrete traffic barrier (median or right sid...	0
Cable barrier	0
Utility pole/light support	2
Traffic signal support	0
Fire hydrant	0
Tree	0
Snow bank	0
Wall	0
Other fixed object	2
Bridge pier or support	0
Curb/island/raised median	0
Embankment	0
Culvert/pipe opening	0
Guardrail - end	0
Other traffic barrier	0
Impact attenuator/crash cushion	0
Traffic sign support	0
Other post/pole/support	0
Mailbox	0
Landscape/shrubbery	0
Fence	0
Building	0
None (no fixed object struck)	26



Iowa Crash Analysis Tool
Quick Report
2015-2021

Driver Age/Driver Gender					
Driver Age - 5 year Bins	Female	Male	Not reported	Unknown	Total
< 14	0	0	0	0	0
= 14	0	0	0	0	0
= 15	1	0	0	0	1
= 16	1	0	0	0	1
= 17	2	1	0	0	3
= 18	1	0	0	0	1
= 19	0	1	0	0	1
= 20	0	0	0	0	0
>= 21 and <= 24	1	1	0	0	2
>= 25 and <= 29	0	2	0	0	2
>= 30 and <= 34	1	1	0	0	2
>= 35 and <= 39	1	1	0	0	2
>= 40 and <= 44	2	0	0	0	2
>= 45 and <= 49	0	2	0	0	2
>= 50 and <= 54	2	1	0	0	3
>= 55 and <= 59	2	2	0	0	4
>= 60 and <= 64	1	1	0	0	2
>= 65 and <= 69	0	0	0	0	0
>= 70 and <= 74	1	0	0	0	1
>= 75 and <= 79	0	0	0	0	0
>= 80 and <= 84	0	1	0	0	1
>= 85 and <= 89	0	0	0	0	0
>= 90 and <= 94	0	0	0	0	0
>= 95	0	0	0	0	0
Not reported	0	0	0	0	0
Unknown	0	0	0	0	0
Total	16	14	0	0	30

Alcohol Test Given	30
None	28
Blood	0
Urine	0
Breath	0
Vitreous	0
Refused	0
Not reported	2

Drug Test Given	30
None	28
Blood	0
Urine	0
Breath	0
Vitreous	0
Refused	0
Not reported	2

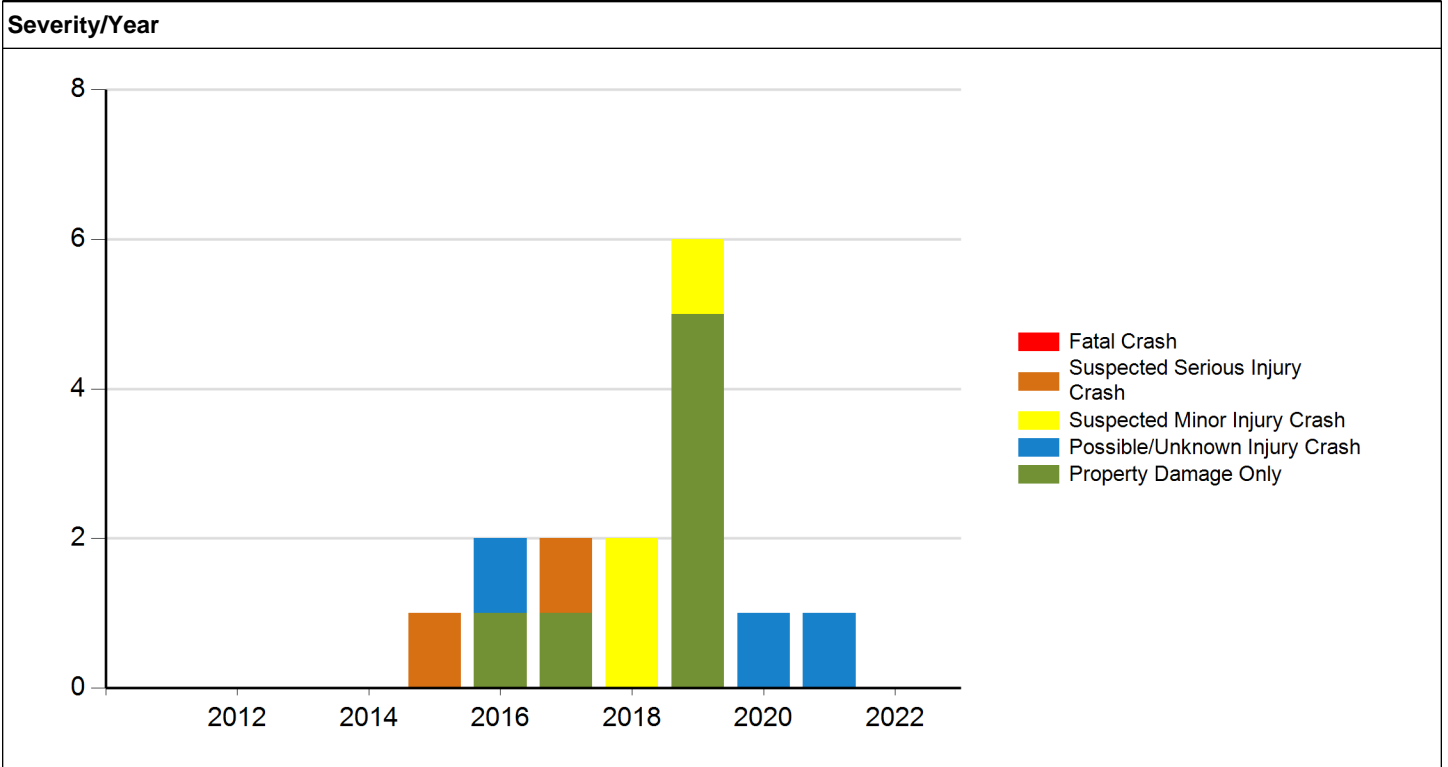
Drug Test Result	4
Negative	0
Cannabis	0
Central Nervous System depressants	0
Central Nervous System stimulants	0
Hallucinogens	0
Inhalants	0
Narcotic Analgesics	0
Dissociative Anesthetic (PCP)	0
Prescription Drug	0
Not reported	4
Other	0

Drug/Alcohol Related	15
Drug	0
Alcohol (< Statutory)	0
Alcohol (Statutory)	0
Drug and Alcohol (< Statutory)	0
Drug and Alcohol (Statutory)	0
Refused	0
Under Influence of Alcohol/Drugs/Medications	0
None Indicated	15



Iowa Crash Analysis Tool
Quick Report
2015-2021

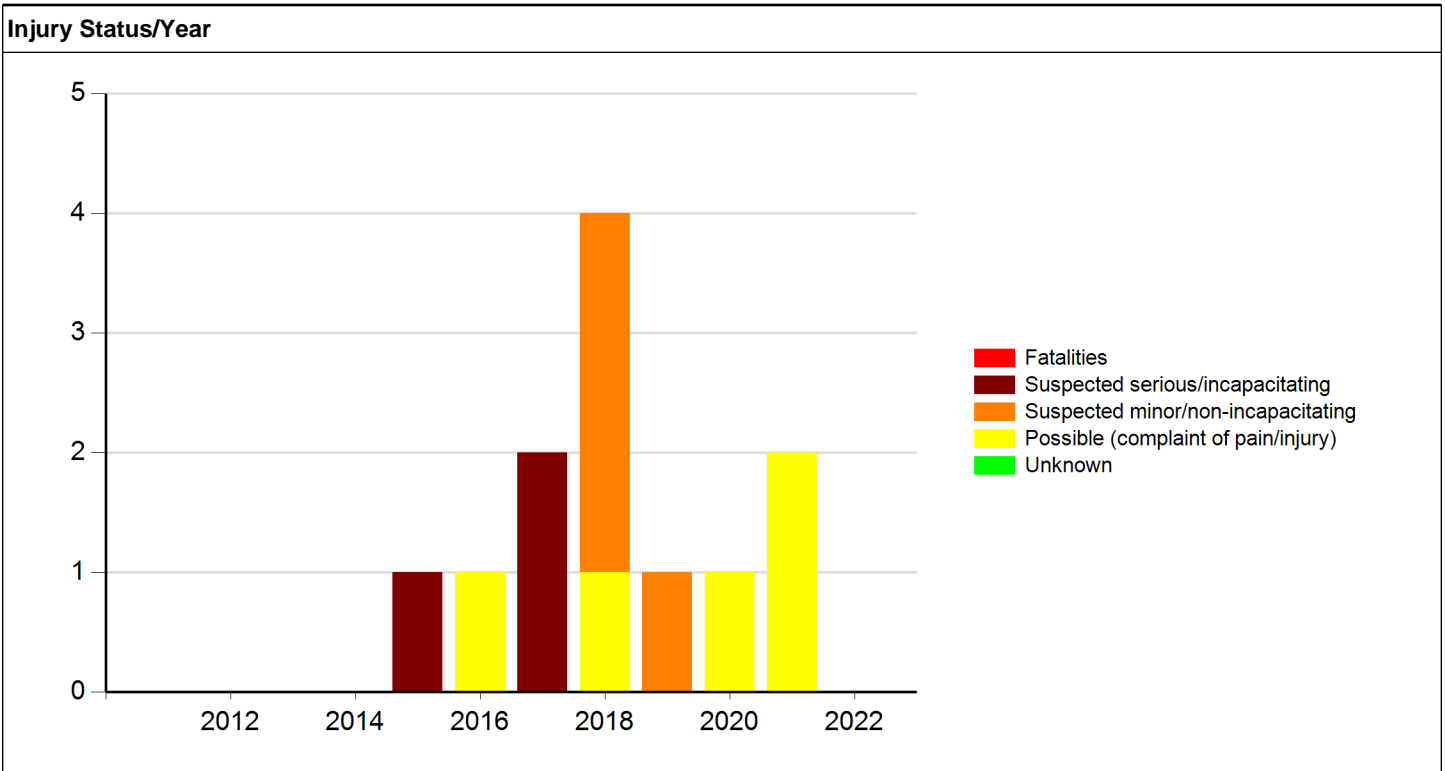
Crash Severity - Annual							
Crash Year	Fatal Crash	Suspected Serious Injury Crash	Suspected Minor Injury Crash	Possible/Unknown Injury Crash	Property Damage Only	Total	
2011	0	0	0	0	0	0	0
2012	0	0	0	0	0	0	0
2013	0	0	0	0	0	0	0
2014	0	0	0	0	0	0	0
2015	0	1	0	0	0	0	1
2016	0	0	0	1	1	1	2
2017	0	1	0	0	1	1	2
2018	0	0	2	0	0	0	2
2019	0	0	1	0	5	5	6
2020	0	0	0	1	0	0	1
2021	0	0	0	1	0	0	1
2022	0	0	0	0	0	0	0
Total	0	2	3	3	7		15





Iowa Crash Analysis Tool
Quick Report
2015-2021

Injury Status - Annual						
Crash Year	Fatalities	Suspected serious/incapacitating	Suspected minor/non-incapacitating	Possible (complaint of pain/injury)	Unknown	Total
2011	0	0	0	0	0	0
2012	0	0	0	0	0	0
2013	0	0	0	0	0	0
2014	0	0	0	0	0	0
2015	0	1	0	0	0	1
2016	0	0	0	1	0	1
2017	0	2	0	0	0	2
2018	0	0	3	1	0	4
2019	0	0	1	0	0	1
2020	0	0	0	1	0	1
2021	0	0	0	2	0	2
2022	0	0	0	0	0	0
Total	0	3	4	5	0	12





Meeting the following criteria

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

Analyst Information

Wabash Avenue & Pioneer Trail - 2015 to 2021



Crash Detail Report

2015858285	05/07/2015 21:01	WABASH AVE AND PIONEER TRAIL
County: Pottawattamie	City:	

Major Cause: Ran off road - right			
Roadway Type: Feature: Non-junction/no special feature			
Severity:: Suspected Serious Injury		Manner of Crash: Sideswipe, opposite direction	
Fatalities: 0		Surface Conditions: Dry	
Major Injuries: 1		Light Conditions: Dusk	
Minor Injuries: 0		Weather Conditions: Clear	
Possible Injuries: 0		Drug/Alc Involved: None Indicated	
Severity:: Suspected Serious Injury		Property Damage: \$13,000	Number of Vehicles: 2
	Unit 1	Unit 2	Unit
Init Trav Dir:	West	East	
Veh Action:	Movement essentially straight	Movement essentially straight	
Configuration:	Passenger car	Four-tire light truck (pick-up)	
Driver Age:	23	38	
Driver Gender:	F	M	
Driver Cond:	Apparently normal	Apparently normal	
Driver Contr 1:	Swerved to avoid: vehicle, object,	Unknown	
Driver Contr 2:	Not reported	Not reported	
Fixed Object:	Utility pole/light support	Utility pole/light support	

20160904700	01/27/2016 18:17	WABASH AVENUE/PIONEER TRAIL
County: Pottawattamie	City:	

Major Cause: Followed too close			
Roadway Type: Feature: Non-junction/no special feature			
Severity:: Possible/Unknown Injury		Manner of Crash: Rear-end (front to rear)	
Fatalities: 0		Surface Conditions: Dry	
Major Injuries: 0		Light Conditions: Dark - roadway not lighted	
Minor Injuries: 0		Weather Conditions: Clear	
Possible Injuries: 1		Drug/Alc Involved: None Indicated	
Severity:: Possible/Unknown Injury		Property Damage: \$8,000	Number of Vehicles: 2
	Unit 1	Unit 2	Unit
Init Trav Dir:	South	South	
Veh Action:	Movement essentially straight	Turning left	
Configuration:	Passenger van (seats < 9)	Passenger car	
Driver Age:	62	19	
Driver Gender:	F	M	
Driver Cond:	Apparently normal	Apparently normal	
Driver Contr 1:	Followed too close	No improper action	
Driver Contr 2:	Not reported	Not reported	
Fixed Object:	None (no fixed object struck)	None (no fixed object struck)	



Crash Detail Report

20160955034	11/29/2016 18:23	WABASH AVE AND PIONEER TRAIL
County: Pottawattamie	City:	

Major Cause: FTYROW: Making left turn

Roadway Type: Intersection: T-intersection

Severity:: Property Damage Only **Manner of Crash:** Angle, oncoming left turn

Fatalities: 0 **Surface Conditions:** Dry

Major Injuries: 0 **Light Conditions:** Dark - roadway not lighted

Minor Injuries: 0 **Weather Conditions:** Clear

Possible Injuries: 0 **Drug/Alc Involved:** None Indicated

Severity:: Property Damage Only **Property Damage:** \$10,000 **Number of Vehicles:** 2

	Unit 1	Unit 2	Unit
Init Trav Dir:	South	North	
Veh Action:	Turning left	Movement essentially straight	
Configuration:	Sport utility vehicle	Passenger car	
Driver Age:	72	29	
Driver Gender:	F	M	
Driver Cond:	Apparently normal	Apparently normal	
Driver Contr 1:	FTYROW: Making left turn	No improper action	
Driver Contr 2:	Not reported	Not reported	
Fixed Object:	None (no fixed object struck)	None (no fixed object struck)	

20170969618	02/17/2017 18:57	WABASH // PIONEER TRL
County: Pottawattamie	City:	

Major Cause: Followed too close

Roadway Type: Feature: Non-junction/no special feature

Severity:: Property Damage Only **Manner of Crash:** Rear-end (front to rear)

Fatalities: 0 **Surface Conditions:** Dry

Major Injuries: 0 **Light Conditions:** Dark - roadway not lighted

Minor Injuries: 0 **Weather Conditions:** Clear

Possible Injuries: 0 **Drug/Alc Involved:** None Indicated

Severity:: Property Damage Only **Property Damage:** \$3,000 **Number of Vehicles:** 2

	Unit 1	Unit 2	Unit
Init Trav Dir:	South	South	
Veh Action:	Movement essentially straight	Movement essentially straight	
Configuration:	Passenger car	Sport utility vehicle	
Driver Age:	21	51	
Driver Gender:	M	F	
Driver Cond:	Asleep/fatigued	Apparently normal	
Driver Contr 1:	Followed too close	No improper action	
Driver Contr 2:	Not reported	Not reported	
Fixed Object:	None (no fixed object struck)	None (no fixed object struck)	



Crash Detail Report

20171015692	11/15/2017 13:50	L035/WABASH AVE AND G066/PIONEER TRL
County: Pottawattamie	City:	

Major Cause: FTYROW: Making left turn			
Roadway Type: Intersection: T-intersection			
Severity:: Suspected Serious Injury		Manner of Crash: Broadside (front to side)	
Fatalities: 0		Surface Conditions: Dry	
Major Injuries: 2		Light Conditions: Daylight	
Minor Injuries: 0		Weather Conditions: Clear	
Possible Injuries: 0		Drug/Alc Involved: None Indicated	
Severity:: Suspected Serious Injury		Property Damage: \$22,000	Number of Vehicles: 2
	Unit 1	Unit 2	Unit
Init Trav Dir:	East	North	
Veh Action:	Turning left	Movement essentially straight	
Configuration:	Four-tire light truck (pick-up)	Passenger van (seats < 9)	
Driver Age:	53	56	
Driver Gender:	F	F	
Driver Cond:	Apparently normal	Apparently normal	
Driver Contr 1:	FTYROW: Making left turn	No improper action	
Driver Contr 2:	Not reported	Not reported	
Fixed Object:	None (no fixed object struck)	None (no fixed object struck)	

20181043193	04/04/2018 19:10	L035 / WABASH AVE and G066 / PIONEER TRL and Wabash Railroad
County: Pottawattamie	City:	

Major Cause: Unknown			
Roadway Type: Intersection: T-intersection			
Severity:: Suspected Minor Injury		Manner of Crash: Rear-end (front to rear)	
Fatalities: 0		Surface Conditions: Dry	
Major Injuries: 0		Light Conditions: Daylight	
Minor Injuries: 2		Weather Conditions: Clear	
Possible Injuries: 1		Drug/Alc Involved: None Indicated	
Severity:: Suspected Minor Injury		Property Damage: \$3,000	Number of Vehicles: 2
	Unit 1	Unit 2	Unit
Init Trav Dir:	North	North	
Veh Action:	Turning right	Unknown	
Configuration:	Passenger car	Sport utility vehicle	
Driver Age:	15	29	
Driver Gender:	F	M	
Driver Cond:	Apparently normal	Not reported	
Driver Contr 1:	Unknown	Unknown	
Driver Contr 2:	Not reported	Not reported	
Fixed Object:	Other fixed object	Other fixed object	



Crash Detail Report

20181062349	08/14/2018 11:50	L035/WABASH AVE PIONEER TRL
County: Pottawattamie	City:	

Major Cause: Followed too close			
Roadway Type: Intersection: T-intersection			
Severity:: Suspected Minor Injury		Manner of Crash: Rear-end (front to rear)	
Fatalities: 0		Surface Conditions: Wet	
Major Injuries: 0		Light Conditions: Daylight	
Minor Injuries: 1		Weather Conditions: Rain	
Possible Injuries: 0		Drug/Alc Involved: None Indicated	
Severity:: Suspected Minor Injury		Property Damage: \$9,000	Number of Vehicles: 2
	Unit 1	Unit 2	Unit
Init Trav Dir:	South	South	
Veh Action:	Slowing/stopping (deceleration)	Movement essentially straight	
Configuration:	Sport utility vehicle	Passenger car	
Driver Age:	61	16	
Driver Gender:	M	F	
Driver Cond:	Apparently normal	Apparently normal	
Driver Contr 1:	No improper action	Followed too close	
Driver Contr 2:	Not reported	Not reported	
Fixed Object:	None (no fixed object struck)	None (no fixed object struck)	

20191112359	05/08/2019 17:00	L035/WABASH AVE
County: Pottawattamie	City:	

Major Cause: Lost control			
Roadway Type: Intersection: T-intersection			
Severity:: Property Damage Only		Manner of Crash: Rear-end (front to rear)	
Fatalities: 0		Surface Conditions: Dry	
Major Injuries: 0		Light Conditions: Daylight	
Minor Injuries: 0		Weather Conditions: Cloudy	
Possible Injuries: 0		Drug/Alc Involved: None Indicated	
Severity:: Property Damage Only		Property Damage: \$14,000	Number of Vehicles: 2
	Unit 1	Unit 2	Unit
Init Trav Dir:	South	South	
Veh Action:	Movement essentially straight	Stopped in traffic	
Configuration:	Sport utility vehicle	Sport utility vehicle	
Driver Age:	18	57	
Driver Gender:	F	M	
Driver Cond:	Apparently normal	Apparently normal	
Driver Contr 1:	Lost control	No improper action	
Driver Contr 2:	Not reported	Not reported	
Fixed Object:	None (no fixed object struck)	None (no fixed object struck)	



Crash Detail Report

20191115205	05/25/2019 11:25	L035/WABASH AVE AND G066/PIONEER TRL
County: Pottawattamie	City:	

Major Cause: Other			
Roadway Type: Intersection: T-intersection			
Severity:: Property Damage Only		Manner of Crash: Rear-end (front to rear)	
Fatalities: 0		Surface Conditions: Dry	
Major Injuries: 0		Light Conditions: Daylight	
Minor Injuries: 0		Weather Conditions: Cloudy	
Possible Injuries: 0		Drug/Alc Involved: None Indicated	
Severity:: Property Damage Only		Property Damage: \$3,200	Number of Vehicles: 2
	Unit 1	Unit 2	Unit
Init Trav Dir:	South	South	
Veh Action:	Slowing/stopping (deceleration)	Slowing/stopping (deceleration)	
Configuration:	Sport utility vehicle	Sport utility vehicle	
Driver Age:	80	41	
Driver Gender:	M	F	
Driver Cond:	Apparently normal	Apparently normal	
Driver Contr 1:	No improper action	Other	
Driver Contr 2:	Not reported	Not reported	
Fixed Object:	None (no fixed object struck)	None (no fixed object struck)	

20191115746	05/30/2019 06:27	L035/WABASH AVE AND G066/PIONEER TRL
County: Pottawattamie	City:	

Major Cause: Followed too close			
Roadway Type: Feature: Non-junction/no special feature			
Severity:: Property Damage Only		Manner of Crash: Rear-end (front to rear)	
Fatalities: 0		Surface Conditions: Wet	
Major Injuries: 0		Light Conditions: Dawn	
Minor Injuries: 0		Weather Conditions: Clear	
Possible Injuries: 0		Drug/Alc Involved: None Indicated	
Severity:: Property Damage Only		Property Damage: \$3,500	Number of Vehicles: 2
	Unit 1	Unit 2	Unit
Init Trav Dir:	South	South	
Veh Action:	Movement essentially straight	Movement essentially straight	
Configuration:	Passenger car	Sport utility vehicle	
Driver Age:	33	30	
Driver Gender:	F	M	
Driver Cond:	Apparently normal	Apparently normal	
Driver Contr 1:	No improper action	Followed too close	
Driver Contr 2:	Not reported	Passing: Through/around barrier	
Fixed Object:	None (no fixed object struck)	None (no fixed object struck)	



Crash Detail Report

20191116324	05/31/2019 21:34	L035/WABASH AVE AND G066/PIONEER TRL
County: Pottawattamie	City:	

Major Cause: Followed too close			
Roadway Type: Feature: Non-junction/no special feature			
Severity:: Suspected Minor Injury		Manner of Crash: Rear-end (front to rear)	
Fatalities: 0		Surface Conditions: Dry	
Major Injuries: 0		Light Conditions: Dark - roadway not lighted	
Minor Injuries: 1		Weather Conditions: Clear	
Possible Injuries: 0		Drug/Alc Involved: None Indicated	
Severity:: Suspected Minor Injury		Property Damage: \$10,000	Number of Vehicles: 2
	Unit 1	Unit 2	Unit
Init Trav Dir:	South	South	
Veh Action:	Turning left	Movement essentially straight	
Configuration:	Four-tire light truck (pick-up)	Passenger van (seats < 9)	
Driver Age:	56	35	
Driver Gender:	M	F	
Driver Cond:	Apparently normal	Apparently normal	
Driver Contr 1:	No improper action	Followed too close	
Driver Contr 2:	Not reported	Not reported	
Fixed Object:	None (no fixed object struck)	None (no fixed object struck)	

20191123489	07/12/2019 07:45	L035/WABASH AVE AND G066/PIONEER TRL
County: Pottawattamie	City:	

Major Cause: Followed too close			
Roadway Type: Feature: Non-junction/no special feature			
Severity:: Property Damage Only		Manner of Crash: Rear-end (front to rear)	
Fatalities: 0		Surface Conditions: Dry	
Major Injuries: 0		Light Conditions: Daylight	
Minor Injuries: 0		Weather Conditions: Clear	
Possible Injuries: 0		Drug/Alc Involved: None Indicated	
Severity:: Property Damage Only		Property Damage: \$16,000	Number of Vehicles: 2
	Unit 1	Unit 2	Unit
Init Trav Dir:	West	West	
Veh Action:	Turning right	Turning right	
Configuration:	Sport utility vehicle	Four-tire light truck (pick-up)	
Driver Age:	40	53	
Driver Gender:	F	M	
Driver Cond:	Apparently normal	Apparently normal	
Driver Contr 1:	No improper action	Followed too close	
Driver Contr 2:	Not reported	Not reported	
Fixed Object:	None (no fixed object struck)	None (no fixed object struck)	



Crash Detail Report

20191147301	11/21/2019 18:01	WABASH / PIONEER TRL
County: Pottawattamie	City: Carson	

Major Cause: Driver Distraction: Inattentive/lost in thought

Roadway Type: Feature: Non-junction/no special feature

Severity:: Property Damage Only

Manner of Crash: Sideswipe, opposite direction

Fatalities: 0

Surface Conditions: Dry

Major Injuries: 0

Light Conditions: Dark - roadway not lighted

Minor Injuries: 0

Weather Conditions: Clear

Possible Injuries: 0

Drug/Alc Involved: None Indicated

Severity:: Property Damage Only

Property Damage: \$25,000

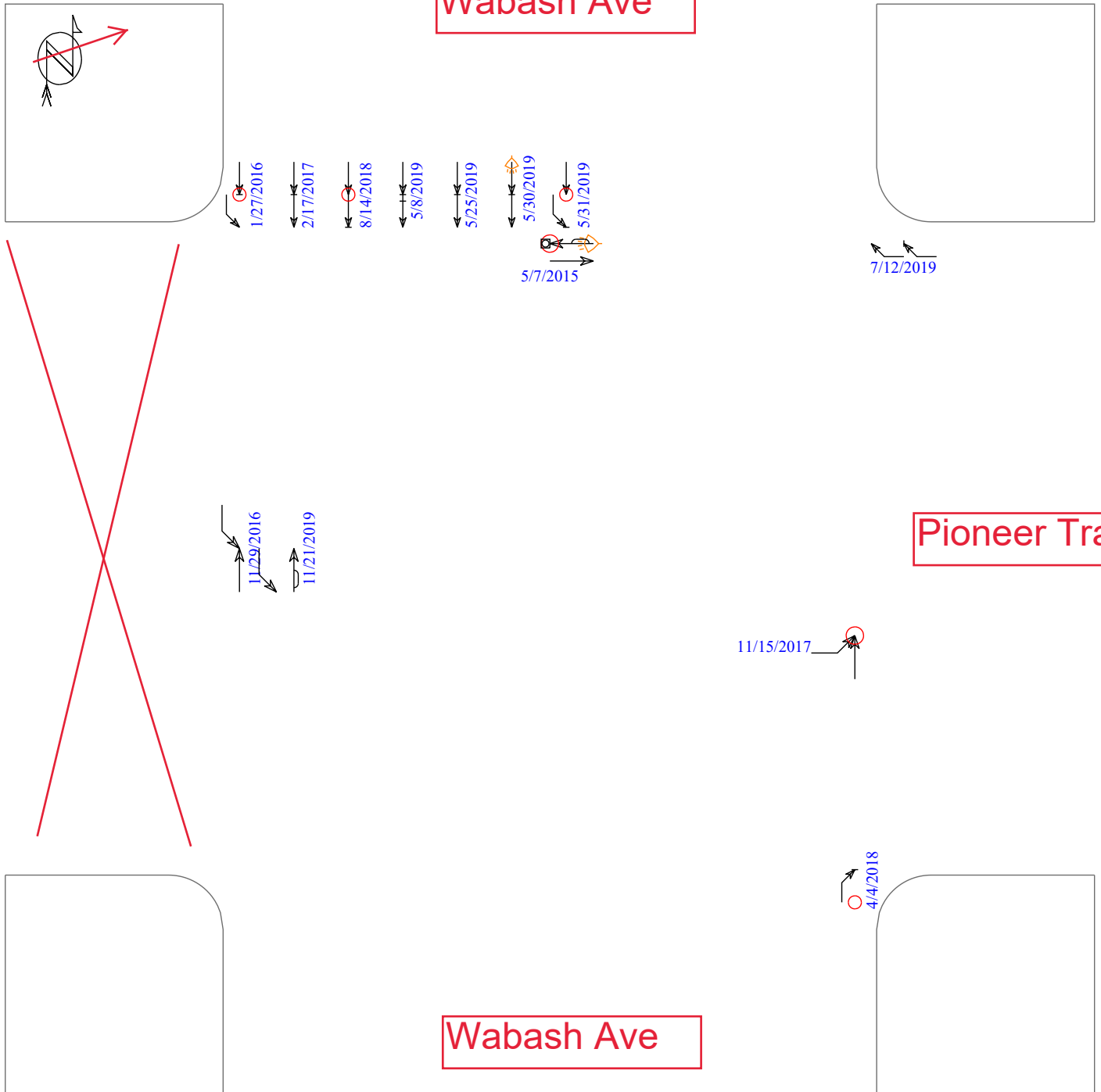
Number of Vehicles: 2

	Unit 1	Unit 2	Unit
Init Trav Dir:	North	South	
Veh Action:	Movement essentially straight	Turning left	
Configuration:	Passenger car	Passenger car	
Driver Age:	17	17	
Driver Gender:	M	F	
Driver Cond:	Apparently normal	Apparently normal	
Driver Contr 1:	No improper action	Other	
Driver Contr 2:	Not reported	Not reported	
Fixed Object:	None (no fixed object struck)	None (no fixed object struck)	

Wabash Ave

Pioneer Trail

Wabash Ave



- ← 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

ACCIDENT AND RELATED DATA FOR RURAL AND MUNICIPAL INTERSECTIONS IN IOWA

Based on 1983 thru 1987 Data

BY INTERSECTION CLASS

Field Description	RURAL				MUNICIPAL			
	Primary with Primary	Primary with Secondary	Secondary with Secondary	Total Rural	Primary with Primary	Primary with City Street	City Street with City Street	Total Municipal
Number of Intersections	93	345	134	572	162	1,129	1,553	2,844
Average Number of Accidents / Year	1.6	1.1	0.8	1.1	4.8	4.1	3.0	3.6
Average Dollar Loss / Year *	\$52,200	\$44,200	\$37,300	\$43,900	\$53,800	\$43,100	\$26,800	\$34,800
Average Daily Entering Vehicles	4,500	4,000	2,200	3,600	12,800	12,800	10,500	11,500
Average Accident Rate / MEV	1.0	0.8	1.0	0.9	1.0	0.9	0.8	0.8
Lower Limits of Statistical Rates								
90 % Confidence Level (K=1.282)	1.9	1.8	2.8	2.1	1.7	1.6	1.6	1.6
95 % Confidence Level (K=1.645)	2.1	2.0	3.2	2.4	1.9	1.8	1.8	1.8
99.5 % Confidence Level (K=2.576)	2.8	2.7	4.1	3.2	2.4	2.3	2.4	2.4

BY TRAFFIC VOLUME CLASS

Field Description	RURAL						MUNICIPAL					
	1 -999	1,000 -2,499	2,500 -4,999	5,000 -9,999	10,000 & Over	Total Rural	1 -2,499	2,500 -4,999	5,000 -9,999	10,000 -24,999	25,000 & Over	Total Municip.
Number of Intersections	68	191	191	97	25	572	85	363	988	1,238	170	2,844
Average Number of Accidents / Year	0.5	0.8	1.1	1.7	3.8	1.1	0.9	1.5	2.0	4.6	10.6	3.6
Average Dollar Loss / Year *	\$46,400	\$38,200	\$43,700	\$47,600	\$67,100	\$43,900	\$20,600	\$20,500	\$20,100	\$43,500	\$94,700	\$34,800
Average Daily Entering Vehicles	650	1,750	3,600	6,750	14,500	3,650	1,900	3,900	7,450	15,050	30,450	11,500
Average Accident Rate / MEV	2.1	1.2	0.9	0.7	0.7	0.9	1.3	1.0	0.7	0.8	1.0	0.8
Lower Limits of Statistical Rates												
90% Confidence Level (K=1.282)	3.7	2.1	1.4	1.3	1.3	2.1	2.9	1.9	1.4	1.5	1.6	1.6
95% Confidence Level (K=1.645)	4.1	2.4	1.6	1.5	1.5	2.4	3.3	2.2	1.6	1.7	1.8	1.8
99.5% Confidence Level (K=2.576)	5.2	3.0	2.0	1.9	1.9	3.2	4.3	2.8	2.1	2.2	2.2	2.4

* Dollar Loss Value Based on: Fatality - \$435,000
 Injury - \$ 15,000
 Plus Actual Property Damage

Bureau of Transportation Safety
 Iowa Department of Transportation
 Prepared January, 1989

MUTCD Warrant Worksheets

MUTCD Volume-based Warrant Evaluation
Wabash Avenue & Pioneer Trail
Existing (2022)



Major Street: Wabash Avenue
 Approach Speed: 40 MPH
 Lanes Moving Traffic: 1
 Option: Rural Community

Minor Street: Pioneer Trail
 Right Turn Volume Included: 100% EB, 100% WB
 Lanes Moving Traffic: 1
 Date of Count: 3/3/2022

WARRANT 1, Condition A - Minimum Vehicular Volume

70% Satisfied No

	Vehicles per hour 70% (56%)	7:00 AM to 8:00 AM	5:30 PM to 6:30 PM	4:30 PM to 5:30 PM	11:15 AM to 12:15 PM	3:30 PM to 4:30 PM	2:30 PM to 3:30 PM	1:30 PM to 2:30 PM	12:15 PM to 1:15 PM
Both Apprchs. Major Street	350 (280)	399	415	580	320	509	411	324	330
Higher Vol. Apprch. Minor Street	105 (84)	172	96	89	86	79	72	66	55

WARRANT 1, Condition B - Interruption of Continuous Traffic

70% Satisfied No

	Vehicles per hour 70% (56%)	7:00 AM to 8:00 AM	5:30 PM to 6:30 PM	4:30 PM to 5:30 PM	11:15 AM to 12:15 PM	3:30 PM to 4:30 PM	2:30 PM to 3:30 PM	1:30 PM to 2:30 PM	12:15 PM to 1:15 PM
Both Apprchs. Major Street	525 (420)	399	415	580	320	509	411	324	330
Higher Vol. Apprch. Minor Street	53 (42)	172	96	89	86	79	72	66	55

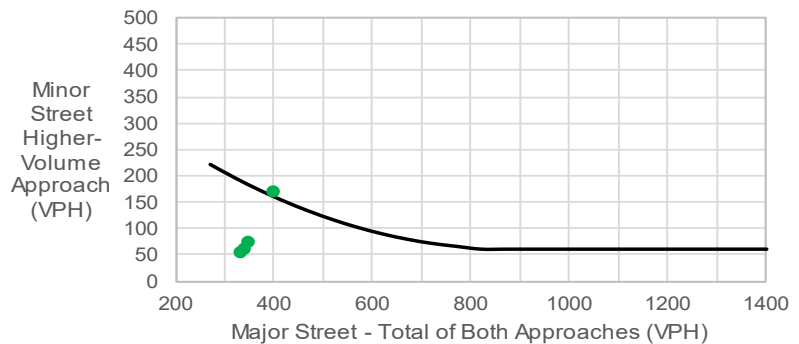
WARRANT 1, Combination of Conditions A and B

56% Satisfied No

WARRANT 2, Four Hour Vehicular Volume

	Both Apprchs. Major Street	Higher Vol. Apprch. Minor Street
7:00 AM - 8:00 AM	399	172
5:45 PM - 6:45 PM	346	74
1:45 PM - 2:45 PM	338	63
12:15 PM - 1:15 PM	330	55

70% Satisfied No



WARRANT 7, Crash Experience

Yes Adequate trial of alternatives with satisfactory observance and enforcement has failed to reduce the crash frequency.

No Five or more reported crashes, of type correctible by a traffic control signal, have occurred within a 12-month period.

No Condition A or B of Warrant 1 is 56% satisfied for each of any 8 hours of an average day.

Warrant 7 Satisfied No

**MUTCD Multi-Way Stop Evaluation
Wabash Avenue & Pioneer Trail
Existing (2022)**



Major Street: Wabash Avenue
 Approach Speed: 40 MPH
 Option: Low speed
 Minor Street: Pioneer Trail
 Date of Count: 3/3/2022

No	Interim measure to control traffic during preparations for traffic signal installation.
No	Five or more crashes in a 12-month period that are susceptible to correction by a multi-way stop installation.
No	Four or more crashes in a 12-month period that are susceptible to correction by a multi-way stop installation.
Yes	Average delay* to minor street vehicular traffic of at least 30 seconds per vehicle during the highest hour.

*Delay estimated by Synchro model.

	Minimum per hour 100% (80%)	4:30 PM to 5:30 PM	3:30 PM to 4:30 PM	5:30 PM to 6:30 PM	2:30 PM to 3:30 PM	7:00 AM to 8:00 AM	12:15 PM to 1:15 PM	1:30 PM to 2:30 PM	11:15 AM to 12:15 PM	Average
Both Apprchs. Major Street	300 (240)	580	509	415	411	399	330	324	320	411
Both Apprchs. Minor Street*	200 (160)	89	79	96	72	172	55	66	86	89

*Combined vehicular, pedestrian, and bicycle volume for both approaches on the minor street.

Interim Control	No
Crashes Satisfied	No
100% Satisfied	No
80% Satisfied	No

One or more criteria satisfied to consider multi-way stop sign installation	No
---	----

NCHRP Turn-Lane Warrant Worksheets

Minor Approach Lane Warrant - NCHRP 457

Pioneer Trail & Wabash Ave

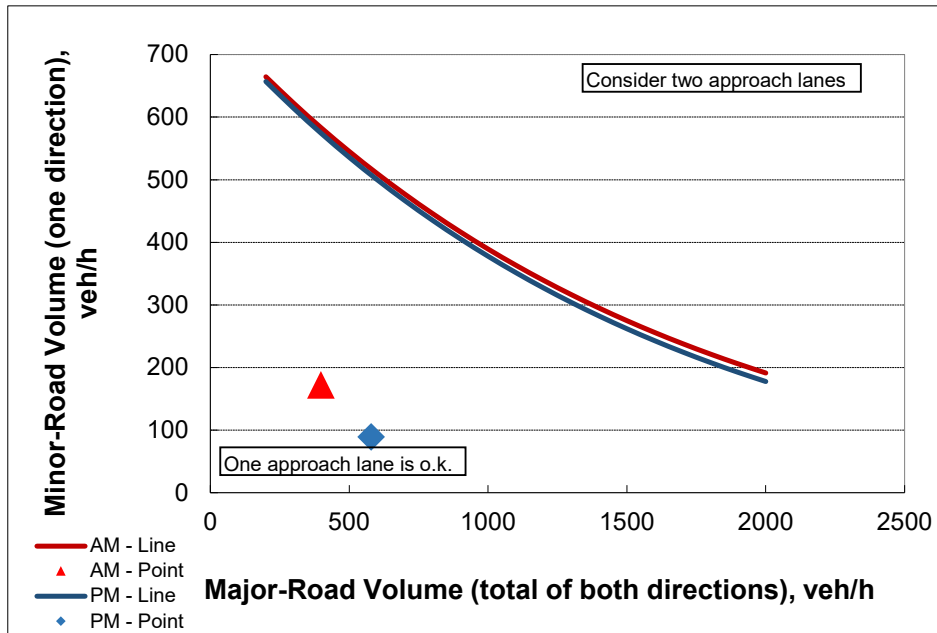
Existing (2022)



Major Street: Pioneer Trail

Minor Street: Wabash Ave

Direction: **Westbound**



INPUT

Variable	AM	PM	-
Major-road volume (total of both directions), veh/h:	399	580	-
Percentage of right-turns on minor road, %:	98%	97%	-
Minor-road volume (one direction), veh/h:	172	89	-

OUTPUT

Variable	AM	PM	-
Limiting minor-road volume (one direction), veh/h:	583	507	-
Guidance for determining minor-road approach geometry:			
ONE approach lane is O.K.			

CALIBRATION CONSTANTS

Minor Road, Gap Acceptance (s)	Critical	Follow
Right-turn capacity, veh/h:	6.2	3.3
Left-turn and through capacity, veh/h:	6.5	4.0

* according to Table 17 - 5 of the HCM

Left-turn Lane Warrant (2 Lane) - NCHRP 457

Pioneer Trail & Wabash Ave

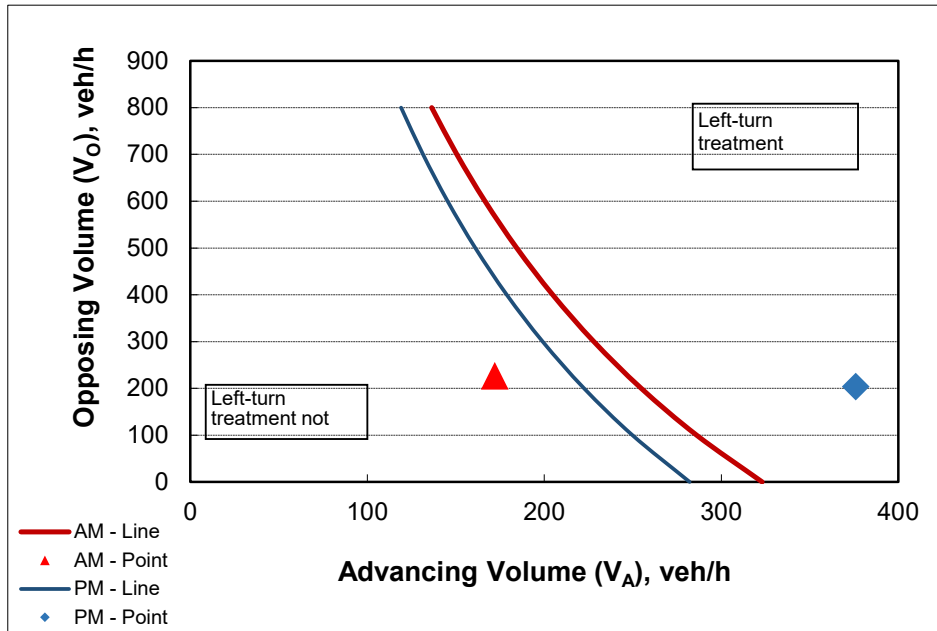
Existing (2022)



Major Street: Pioneer Trail

Minor Street: Wabash Ave

Direction: **Southbound**



INPUT

Variable	AM	PM	-
85 th percentile speed, mph:	55		
Percent of left-turns in advancing volume (V_A), %:	24%	39%	-
Advancing volume (V_A), veh/h:	172	376	-
Opposing volume (V_O), veh/h:	227	204	-

OUTPUT

Variable	AM	PM	-
Limiting advancing volume (V_A), veh/h:	247	221	-
Guidance for determining the need for a major-road left-turn bay:			
Left-turn treatment warranted.			

CALIBRATION CONSTANTS

Variable	Value
Average time for making left-turn, s:	3.0
Critical headway, s:	5.0
Average time for left-turn veh. to clear advancing lane, s:	1.9

Right-turn Lane Warrant (2 Lane) - NCHRP 457

Pioneer Trail & Wabash Ave

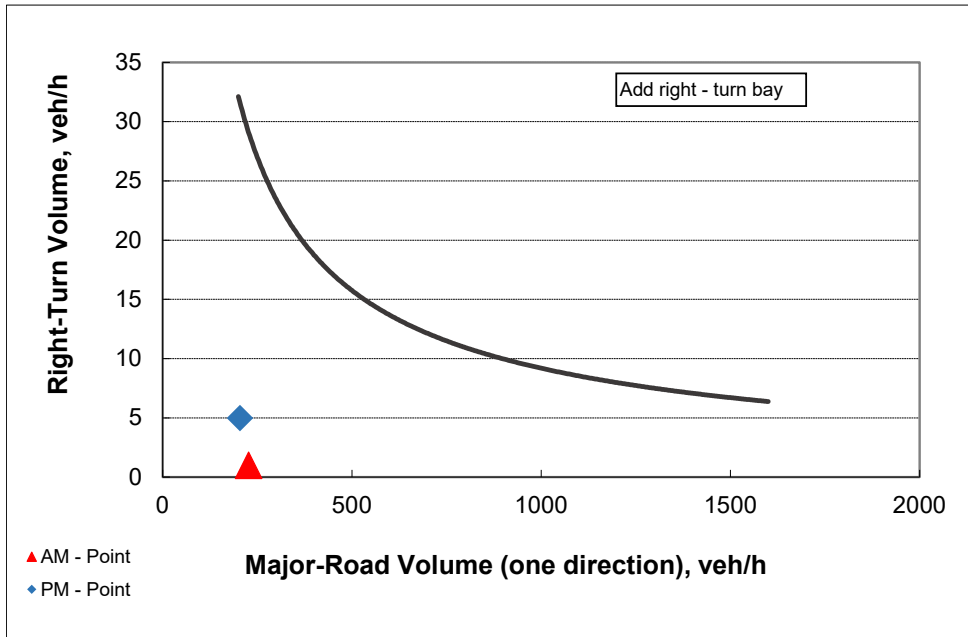
Existing (2022)



Major Street: Pioneer Trail

Minor Street: Wabash Ave

Direction: **Northbound**



INPUT

Variable	AM	PM	-
Major-road speed, mph:	55		
Major-road volume (one direction), veh/h:	227	204	-
Right-turn volume, veh/h:	1	5	-

OUTPUT

Variable	AM	PM	-
Limiting right-turn volume, veh/h:	29	32	-
Guidance for determining the need for a major-road right-turn bay for a 2-lane roadway:			
Do NOT add right-turn bay.			

Capacity Analysis Worksheets

Intersection						
Int Delay, s/veh	3.9					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	W		T			T
Traffic Vol, veh/h	3	169	226	1	41	131
Future Vol, veh/h	3	169	226	1	41	131
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	0	8	3	0	15	3
Mvmt Flow	3	178	238	1	43	138

Major/Minor	Minor1	Major1	Major2		
Conflicting Flow All	463	239	0	0	239
Stage 1	239	-	-	-	-
Stage 2	224	-	-	-	-
Critical Hdwy	6.4	6.28	-	-	4.25
Critical Hdwy Stg 1	5.4	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-
Follow-up Hdwy	3.5	3.372	-	-	2.335
Pot Cap-1 Maneuver	561	785	-	-	1255
Stage 1	805	-	-	-	-
Stage 2	818	-	-	-	-
Platoon blocked, %			-	-	-
Mov Cap-1 Maneuver	540	785	-	-	1255
Mov Cap-2 Maneuver	540	-	-	-	-
Stage 1	805	-	-	-	-
Stage 2	788	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	11	0	1.9
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT
Capacity (veh/h)	-	-	779	1255
HCM Lane V/C Ratio	-	-	0.232	0.034
HCM Control Delay (s)	-	-	11	8
HCM Lane LOS	-	-	B	A
HCM 95th %tile Q(veh)	-	-	0.9	0.1

Intersection						
Int Delay, s/veh	3.1					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	3	86	199	5	147	229
Future Vol, veh/h	3	86	199	5	147	229
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	0	5	4	20	3	3
Mvmt Flow	3	93	216	5	160	249

Major/Minor	Minor1	Major1	Major2		
Conflicting Flow All	788	219	0	0	221
Stage 1	219	-	-	-	-
Stage 2	569	-	-	-	-
Critical Hdwy	6.4	6.25	-	-	4.13
Critical Hdwy Stg 1	5.4	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-
Follow-up Hdwy	3.5	3.345	-	-	2.227
Pot Cap-1 Maneuver	363	813	-	-	1342
Stage 1	822	-	-	-	-
Stage 2	570	-	-	-	-
Platoon blocked, %			-	-	-
Mov Cap-1 Maneuver	313	813	-	-	1342
Mov Cap-2 Maneuver	313	-	-	-	-
Stage 1	822	-	-	-	-
Stage 2	491	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	10.3	0	3.1
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT
Capacity (veh/h)	-	-	771	1342
HCM Lane V/C Ratio	-	-	0.125	0.119
HCM Control Delay (s)	-	-	10.3	8
HCM Lane LOS	-	-	B	A
HCM 95th %tile Q(veh)	-	-	0.4	0.4

Intersection						
Int Delay, s/veh	3.9					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	41	131	226	1	3	169
Future Vol, veh/h	41	131	226	1	3	169
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	150	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	15	3	3	0	0	8
Mvmt Flow	43	138	238	1	3	178

Major/Minor	Major1	Major2	Minor2		
Conflicting Flow All	239	0	-	0	463 239
Stage 1	-	-	-	-	239 -
Stage 2	-	-	-	-	224 -
Critical Hdwy	4.25	-	-	-	6.4 6.28
Critical Hdwy Stg 1	-	-	-	-	5.4 -
Critical Hdwy Stg 2	-	-	-	-	5.4 -
Follow-up Hdwy	2.335	-	-	-	3.5 3.372
Pot Cap-1 Maneuver	1255	-	-	-	561 785
Stage 1	-	-	-	-	805 -
Stage 2	-	-	-	-	818 -
Platoon blocked, %		-	-	-	
Mov Cap-1 Maneuver	1255	-	-	-	542 785
Mov Cap-2 Maneuver	-	-	-	-	542 -
Stage 1	-	-	-	-	778 -
Stage 2	-	-	-	-	818 -

Approach	EB	WB	SB
HCM Control Delay, s	1.9	0	11
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1255	-	-	-	779
HCM Lane V/C Ratio	0.034	-	-	-	0.232
HCM Control Delay (s)	8	-	-	-	11
HCM Lane LOS	A	-	-	-	B
HCM 95th %tile Q(veh)	0.1	-	-	-	0.9

Intersection						
Int Delay, s/veh	3.1					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	147	229	199	5	3	86
Future Vol, veh/h	147	229	199	5	3	86
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	150	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	3	3	4	20	0	5
Mvmt Flow	160	249	216	5	3	93

Major/Minor	Major1	Major2	Minor2		
Conflicting Flow All	221	0	-	0	788 219
Stage 1	-	-	-	-	219 -
Stage 2	-	-	-	-	569 -
Critical Hdwy	4.13	-	-	-	6.4 6.25
Critical Hdwy Stg 1	-	-	-	-	5.4 -
Critical Hdwy Stg 2	-	-	-	-	5.4 -
Follow-up Hdwy	2.227	-	-	-	3.5 3.345
Pot Cap-1 Maneuver	1342	-	-	-	363 813
Stage 1	-	-	-	-	822 -
Stage 2	-	-	-	-	570 -
Platoon blocked, %		-	-	-	
Mov Cap-1 Maneuver	1342	-	-	-	320 813
Mov Cap-2 Maneuver	-	-	-	-	320 -
Stage 1	-	-	-	-	724 -
Stage 2	-	-	-	-	570 -

Approach	EB	WB	SB
HCM Control Delay, s	3.1	0	10.3
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1342	-	-	-	773
HCM Lane V/C Ratio	0.119	-	-	-	0.125
HCM Control Delay (s)	8	-	-	-	10.3
HCM Lane LOS	A	-	-	-	B
HCM 95th %tile Q(veh)	0.4	-	-	-	0.4

John Rasmussen/Engineer

Discussion and/or decision to have Chairman sign a quick claim deed to Fino Farms LLC of 10-foot parcel from the Caladonia Shop Parcel.



33

33

175

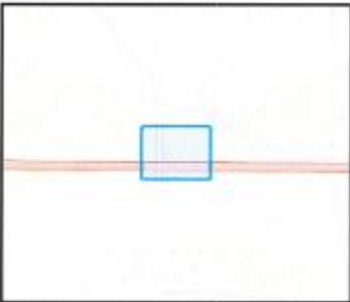
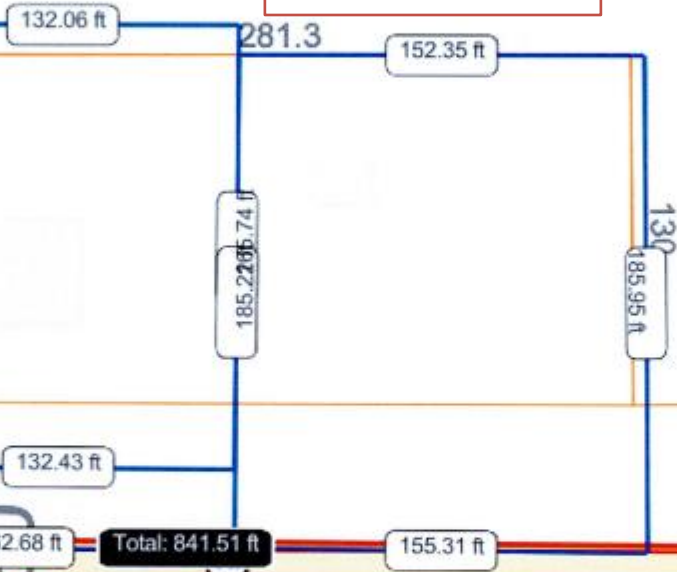
490th St
1067

33

334.05

69

The fence was built without the "jog" on the West Parcel and aligns with the North line on the East Parcel.



Legend

Pottawattamie County GIS Dept.
223 S 6th St.
Council Bluffs, IA 51501
(712) 328-4885
gis@pottcounty-ia.gov
<https://gis.pottcounty-ia.gov>
2/8/2022



SCALE: 1102



Users of Pottawattamie County (The County) GIS data agree that he/she will at all times indemnify and hold The County and its officers, employees, and agents harmless from any damages, claims, lawsuits, costs, or liability arising from any act, omission, or commission with respect to the release and use of information in this Agreement and any of the terms thereof. The County makes no claim as to the accuracy of the spatial data and its associated data tables and assumes no responsibility for their positional or content accuracy. The County makes no claim as to the ability of the spatial data to fulfill the Contracting Organization's application requirements. In providing data (or access to data), The County assumes no obligation to assist in the use of the data, or in the development, use, or maintenance of any applications applied to the data. In no event shall The County be liable for any direct, indirect, incidental, consequential or special damages that may result from the use of the GIS data.

Received/Filed

Public Comments

Closed Session