Multi-Way Stop for the Intersection of
E Bay Blvd and Chippewa Ave
City Engineering Department
June 2014

Criteria for Multi-Way Stop Installation

Based on MUTCD 2009 Edition Standards

Criterion 1: Crash Experience

This criterion is **not satisfied** because there have been no accidents at this intersection in the past 12 months that could have been prevented by the installation of a Multi-Way Stop.

Criterion 2: 8-hour Vehicular Volume

This criterion is **not satisfied** because the vehicles per hour entering the intersection of East Bay Blvd and Chippewa coming from East Bay Blvd is 123, which does not exceed the required minimum 300 vehicles per hour for any 8 hours of an average day, and the vehicles per hour entering the intersection from Chippewa is 14 and the average delay to vehicular traffic is 1.33 seconds, which does not exceed the required minimum 200 vehicles per hour for the same 8 hours and the minimum average delay time of 30 seconds per vehicle during the peak hour.

Criterion 3: Major Road Approach Speed

This criterion is **not satisfied** because the 85th-percentile approach speed of traffic on East Bay Blvd is 29 mph, which does not exceed the required minimum of 40 mph.

Additional Notes

The level of service of the intersection was found to be a level A with and average control delay of 1.33 seconds per vehicle. The number of bicycles traveling through the intersection was about the same as the number of pedestrians, with both groups consisting mostly of people exercising, leading to the conclusion that this is a popular exercise route for people living in the area. Also, most pedestrians and bicycles using the intersection would come from either direction of East Bay Blvd and stay on East Bay Blvd. The number of gaps was high, during the peak hour there were 63 gaps.

Prepared By: [signature] Date: 6-20-14

Reviewed By: [signature] Date: 7.28.14

Encl: 2009 MUTCD Section 2B.07 Multi-Way Stop Applications
Stop Sign Criteria Data for E Bay Blvd and Chippewa
Stop Time Delay Tabulation
Stop Warrant Field Observations

Detailed TraxPro S East Bay Blvd Speed Report
2011 TraxPro Chippewa Volume Report
2013 TraxPro S East Bay Blvd Volume Report

Section 2B.07 Multi-Way Stop Applications

Support:

01 Multi-way stop control can be useful as a safety measure at intersections if certain traffic conditions exist. Safety concerns associated with multi-way stops include pedestrians, bicyclists, and all road users expecting other road users to stop. Multi-way stop control is used where the volume of traffic on the intersecting roads is approximately equal.

02 The restrictions on the use of STOP signs described in Section 2B.04 also apply to multi-way stop applications.

Guidance:

03 *The decision to install multi-way stop control should be based on an engineering study.*

04 *The following criteria should be considered in the engineering study for a multi-way STOP sign installation:*

A. *Where traffic control signals are justified, the multi-way stop is an interim measure that can be installed quickly to control traffic while arrangements are being made for the installation of the traffic control signal.*
B. *Five or more reported crashes in a 12-month period that are susceptible to correction by a multi-way stop installation. Such crashes include right-turn and left-turn collisions as well as right-angle collisions.*
C. *Minimum volumes:*
    1. *The vehicular volume entering the intersection from the major street approaches (total of both approaches) averages at least 300 vehicles per hour for any 8 hours of an average day; and*
    2. *The combined vehicular, pedestrian, and bicycle volume entering the intersection from the minor street approaches (total of both approaches) averages at least 200 units per hour for the same 8 hours, with an average delay to minor-street vehicular traffic of at least 30 seconds per vehicle during the highest hour; but*
    3. *If the 85th-percentile approach speed of the major-street traffic exceeds 40 mph, the minimum vehicular volume warrants are 70 percent of the values provided in Items 1 and 2.*
D. *Where no single criterion is satisfied, but where Criteria B, C.1, and C.2 are all satisfied to 80 percent of the minimum values. Criterion C.3 is excluded from this condition.*

Option:

05 Other criteria that may be considered in an engineering study include:

A. The need to control left-turn conflicts;
B. The need to control vehicle/pedestrian conflicts near locations that generate high pedestrian volumes;
C. Locations where a road user, after stopping, cannot see conflicting traffic and is not able to negotiate the intersection unless conflicting cross traffic is also required to stop; and
D. An intersection of two residential neighborhood collector (through) streets of similar design and operating characteristics where multi-way stop control would improve traffic operational characteristics of the intersection.

2014 Multi-Way Stop Sign Criteria -- East Bay Blvd and Chippewa
Intersection Data

KEY
= Area of Concern
**Estimates and Projected Data are found by using a 2% per year growth rate

General Information

Major Road	Minor Road	Total Control Delay (sec)	Average Control Delay (sec/vehicle)	Level of Service	Total Pedestrians	School Children	Gaps	Main Road Speed Limit
East Bay	Chippewa	4	1.33	A	9	0	63	25

Criterion 1: Crash Experience

Main Road	Minor Road	Correctable Crashes in Past 12 Months	Meets Conditions B
East Bay	Chippewa	0	no

Criterion 2: 8-hour Vehicular Volume

Major Road	Minor Road	Vehicles per Hour on Major Road	Vehicles per Hour on Minor Road	Meets Condition C 1	Meets Condition C 2	Meets Condition B, C 1 and C 2 Combination to 80% of minimum	Major Street Volume Estimated** from:	Minor Street Volume Estimated** from:
East Bay	Chippewa	123	14	no	no	no	Past (2013)	Past (2011)

Criterion 3: Major Road Approach Speed

Major Road	85th Percentile Approach Speed (mph)	Meets Condition C 3	Speed Data from:
East Bay	29	no	Past (2013)

Notes

Chippewa and S. E. Bay Blvd.
Thursday, 6-19-14
Sunny, 66 to 72
11 am - 12 noon (peak hour)

Stop Time Delay (s)
0
0
4

TOTAL:	4 sec
	3 vehicles
Average:	1.3 sec/vehicle

Location	Chippewa + S. E. Bay Blvd.
Day, Date	6-19-14, Thursday
Conditions	Sunny, ~~Clear~~ 66°F → 72°F
Time	11:00 AM - 12:00
Gap Length	45
Observer	John Zavatonitis

G= W/4 + 3

About 12' per lane
8' for parking

STOP WARRANT FIELD OBSERVATIONS

PEDESTRIANS	SCHOOL CHILDREN	HANDICAP
𝍸 IIII Bicycles: 𝍸 (II) I	School children on bikes	

GAPS	LINE OF CARS WAITING LONGER THAN 5 CARS
𝍸 𝍸 𝍸 𝍸 𝍸 𝍸 𝍸 𝍸 𝍸 𝍸 𝍸 𝍸 III	

STOP TIME DELAY								
0								
0								
4								

East Bay Blvd

(S of Chippewa St)

Speed

Site Code: 000000000000
Station ID:

Latitude: 0' 0.0000 South

A to B, B to A

Start Time	0 15	16 20	21 25	26 30	31 35	36 40	41 45	46 50	51 55	56 60	61 65	66 70	71 75	76 9999	Total	Pace Speed	Number in Pace
10/28/13	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
01:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
02:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
03:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
04:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
05:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
06:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
07:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
08:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
09:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
10:00	**3**	**4**	**39**	25	1	**1**	0	0	0	0	0	0	0	0	**73**	20-29	54
11:00	2	3	31	**26**	**10**	0	0	0	0	0	0	0	0	0	72	21-30	50
12 PM	2	12	36	37	15	0	0	0	0	0	0	0	0	**1**	103	21-30	63
13:00	2	9	36	27	7	1	0	0	0	0	0	0	0	0	82	20-29	54
14:00	**6**	13	40	22	9	0	0	0	0	0	0	0	0	0	90	20-29	52
15:00	1	6	**47**	**49**	11	2	0	0	0	0	0	0	0	0	**116**	21-30	84
16:00	4	7	41	43	11	**3**	**1**	0	0	0	0	0	0	1	111	21-30	72
17:00	2	**14**	38	29	**17**	2	0	0	0	0	0	0	0	0	102	20-29	58
18:00	1	5	22	22	4	1	0	0	0	0	0	0	0	0	55	21-30	38
19:00	0	4	15	18	4	1	0	0	0	0	0	0	0	0	42	21-30	29
20:00	0	3	7	13	5	0	0	0	0	0	0	0	0	0	28	23-32	18
21:00	0	1	2	3	1	1	1	0	0	0	0	0	0	0	9	24-33	4
22:00	0	0	3	4	4	0	0	0	0	0	0	0	0	0	11	24-33	8
23:00	0	0	2	2	0	0	0	0	0	0	0	0	0	0	4	21-30	4
Total	23	81	359	320	99	12	2	0	0	0	0	0	0	2	898		
Percent	2.6%	9.0%	40.0%	35.6%	11.0%	1.3%	0.2%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.2%			
AM Peak	10:00	10:00	10:00	11:00	11:00	10:00									10:00		
Vol.	3	4	39	26	10	1									73		
PM Peak	14:00	17:00	15:00	15:00	17:00	16:00	16:00							12:00	15:00		
Vol.	6	14	47	49	17	3	1							1	116		

East Bay Blvd

(S of Chippewa St)

Speed

Site Code: 000000000000
Station ID:

Latitude: 0' 0.0000 South

A to B, B to A

Start Time	0 15	16 20	21 25	26 30	31 35	36 40	41 45	46 50	51 55	56 60	61 65	66 70	71 75	76 9999	Total	Pace Speed	Number in Pace
10/29/13	0	0	1	2	1	0	0	0	0	0	0	0	0	0	4	24-33	3
01:00	0	0	0	0	2	0	0	0	0	0	0	0	0	0	2	25-34	2
02:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	*	*
03:00	0	0	1	0	0	0	0	0	0	0	0	0	0	0	1	14-23	1
04:00	0	0	0	2	0	0	0	0	0	0	0	0	0	0	2	20-29	2
05:00	0	1	1	3	1	0	0	0	0	0	0	0	0	0	6	22-31	4
06:00	0	2	6	6	0	0	0	0	0	0	0	0	0	0	14	21-30	10
07:00	2	10	**50**	27	5	0	0	0	0	0	0	0	0	0	**94**	20-29	66
08:00	1	6	28	23	4	1	0	0	0	0	0	0	0	0	63	21-30	43
09:00	1	1	24	**28**	4	1	0	0	0	0	0	0	0	0	59	22-31	45
10:00	**6**	4	26	18	**8**	0	0	0	0	0	0	0	0	0	62	21-30	36
11:00	3	**13**	27	22	6	**2**	0	0	0	0	0	0	0	0	73	20-29	41
12 PM	**5**	9	38	22	2	0	0	0	0	**1**	0	0	0	0	77	20-29	50
13:00	0	**13**	35	31	6	0	**1**	0	0	0	0	0	0	0	86	21-30	56
14:00	2	9	32	31	2	1	0	0	0	0	0	0	0	0	77	21-30	53
15:00	3	12	**57**	37	7	1	0	0	0	0	0	0	0	**1**	**118**	20-29	80
16:00	1	12	51	**39**	9	**2**	0	0	0	0	**1**	**1**	0	0	116	21-30	77
17:00	1	6	41	38	**12**	1	0	0	0	0	0	0	0	0	99	21-30	69
18:00	0	5	37	16	4	0	0	0	0	0	0	0	0	1	63	20-29	47
19:00	1	1	11	18	5	2	0	0	0	0	0	0	0	0	38	22-31	26
20:00	0	1	5	7	4	0	0	0	0	0	0	0	0	0	17	24-33	11
21:00	0	3	9	8	3	1	0	0	0	0	0	0	0	0	24	20-29	15
22:00	1	1	2	5	0	0	0	0	0	0	0	0	0	0	9	22-31	6
23:00	0	0	0	3	0	0	0	0	0	0	0	0	0	0	3	24-33	3
Total	27	109	482	386	85	12	1	0	0	1	1	1	0	2	1107		
Percent	2.4%	9.8%	43.5%	34.9%	7.7%	1.1%	0.1%	0.0%	0.0%	0.1%	0.1%	0.1%	0.0%	0.2%			
AM Peak	10:00	11:00	07:00	09:00	10:00	11:00									07:00		
Vol.	6	13	50	28	8	2									94		
PM Peak	12:00	13:00	15:00	16:00	17:00	16:00	13:00			12:00	16:00	16:00		15:00	15:00		
Vol.	5	13	57	39	12	2	1			1	1	1		1	118		

East Bay Blvd

(S of Chippewa St)

Speed

Site Code: 000000000000
Station ID:

Latitude: 0' 0.0000 South

A to B, B to A

Start Time	0 15	16 20	21 25	26 30	31 35	36 40	41 45	46 50	51 55	56 60	61 65	66 70	71 75	76 9999	Total	Pace Speed	Number in Pace
10/30/13	0	0	1	2	0	0	0	0	0	0	0	0	0	0	3	21-30	3
01:00	0	0	0	1	0	0	0	0	0	0	0	0	0	0	1	19-28	1
02:00	0	0	1	0	0	0	0	0	0	0	0	0	0	0	1	14-23	1
03:00	0	0	0	1	0	0	0	0	0	0	0	0	0	0	1	19-28	1
04:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	*	*
05:00	0	0	1	2	0	0	0	0	0	0	0	0	0	0	3	21-30	3
06:00	0	1	6	10	1	0	0	0	0	0	0	0	0	0	18	22-31	14
07:00	**2**	7	**43**	**30**	4	**1**	0	0	0	0	0	0	0	0	**87**	20-29	62
08:00	1	**13**	38	25	7	0	0	0	0	0	0	0	0	0	84	20-29	54
09:00	1	8	31	17	4	1	0	0	0	0	0	0	0	0	62	20-29	42
10:00	0	9	23	26	7	0	0	0	0	0	0	0	0	0	65	21-30	42
11:00	1	8	21	26	**8**	0	0	0	0	0	0	0	0	0	64	22-31	40
12 PM	3	9	31	34	**13**	**2**	0	**1**	0	0	0	0	0	**1**	94	21-30	56
13:00	2	11	27	33	8	1	0	0	0	0	0	0	0	0	82	21-30	51
14:00	2	11	39	31	8	0	0	0	0	0	0	0	0	0	91	21-30	59
15:00	3	**12**	**63**	41	9	2	0	0	0	0	0	0	0	0	**130**	20-29	89
16:00	**4**	11	47	**44**	7	2	0	0	0	0	0	0	0	0	115	21-30	76
17:00	4	8	38	30	6	0	**1**	0	0	0	0	0	0	0	87	20-29	57
18:00	0	6	29	28	8	1	0	0	0	0	0	0	0	0	72	21-30	50
19:00	0	5	20	16	3	0	1	0	0	0	0	0	0	0	45	20-29	31
20:00	0	4	15	16	5	0	0	0	0	0	0	0	0	0	40	21-30	27
21:00	0	1	3	9	3	0	0	0	0	0	0	0	0	0	16	23-32	12
22:00	0	0	7	8	0	0	0	0	0	0	0	0	0	0	15	22-31	13
23:00	0	0	2	3	2	0	0	0	0	0	0	0	0	0	7	24-33	5
Total	23	124	486	433	103	10	2	1	0	0	0	0	0	1	1183		
Percent	1.9%	10.5%	41.1%	36.6%	8.7%	0.8%	0.2%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%	0.1%			
AM Peak	07:00	08:00	07:00	07:00	11:00	07:00									07:00		
Vol.	2	13	43	30	8	1									87		
PM Peak	16:00	15:00	15:00	16:00	12:00	12:00	17:00	12:00						12:00	15:00		
Vol.	4	12	63	44	13	2	1	1						1	130		

East Bay Blvd

(S of Chippewa St)

Speed

Site Code: 000000000000
Station ID:

Latitude: 0' 0.0000 South

A to B, B to A

Start Time	0 15	16 20	21 25	26 30	31 35	36 40	41 45	46 50	51 55	56 60	61 65	66 70	71 75	76 9999	Total	Pace Speed	Number in Pace
10/31/13	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	*	*
01:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	*	*
02:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	*	*
03:00	0	0	0	1	0	0	0	0	0	0	0	0	0	0	1	19-28	1
04:00	0	1	0	2	0	0	0	0	0	0	0	0	0	0	3	20-29	2
05:00	0	0	1	2	0	0	0	0	0	0	0	0	0	0	3	21-30	3
06:00	0	1	7	5	1	0	0	0	0	0	0	0	0	0	14	22-31	10
07:00	0	**10**	30	25	2	0	0	0	0	0	0	0	0	0	67	20-29	47
08:00	**2**	5	33	17	5	**1**	0	0	0	0	0	0	0	0	63	20-29	43
09:00	0	9	28	24	0	0	**1**	0	0	0	0	0	0	0	62	20-29	44
10:00	1	3	21	26	5	0	0	0	0	0	0	0	0	0	56	21-30	41
11:00	1	3	**36**	**28**	**6**	1	0	0	0	0	0	0	0	0	**75**	21-30	56
12 PM	2	6	28	30	**12**	0	0	0	0	0	0	0	0	0	78	22-31	50
13:00	**3**	**18**	45	19	5	0	0	0	0	0	0	0	0	0	90	19-28	56
14:00	2	10	41	26	5	0	0	0	0	0	0	0	0	0	84	20-29	57
15:00	2	10	**56**	**36**	7	0	**1**	0	0	0	0	0	0	0	**112**	20-29	79
16:00	0	9	43	28	7	**1**	0	0	0	0	0	0	0	0	88	20-29	62
17:00	3	8	39	28	10	1	0	0	0	0	0	0	0	0	89	21-30	57
18:00	2	12	30	7	5	0	0	0	0	0	0	0	0	0	56	18-27	35
19:00	1	10	13	4	1	0	0	0	0	0	0	0	0	0	29	16-25	18
20:00	0	3	19	10	3	0	0	0	0	0	0	0	0	0	35	20-29	26
21:00	0	0	5	7	2	0	0	0	0	0	0	0	0	0	14	21-30	11
22:00	0	3	6	0	0	0	0	0	0	0	0	0	0	0	9	15-24	7
23:00	0	1	1	4	0	0	0	0	0	0	0	0	0	0	6	24-33	4
Total	19	122	482	329	76	4	2	0	0	0	0	0	0	0	1034		
Percent	1.8%	11.8%	46.6%	31.8%	7.4%	0.4%	0.2%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%			
AM Peak	08:00	07:00	11:00	11:00	11:00	08:00	09:00								11:00		
Vol.	2	10	36	28	6	1	1								75		
PM Peak	13:00	13:00	15:00	15:00	12:00	16:00	15:00								15:00		
Vol.	3	18	56	36	12	1	1								112		

East Bay Blvd

(S of Chippewa St)

Speed

Site Code: 000000000000
Station ID:

Latitude: 0' 0.0000 South

A to B, B to A

Start Time	0 15	16 20	21 25	26 30	31 35	36 40	41 45	46 50	51 55	56 60	61 65	66 70	71 75	76 9999	Total	Pace Speed	Number in Pace
11/01/13	0	0	1	2	0	0	0	0	0	0	0	0	0	0	3	21-30	3
01:00	0	0	2	0	0	0	0	0	0	0	0	0	0	0	2	15-24	2
02:00	1	1	1	0	0	0	0	0	0	0	0	0	0	0	3	18-27	1
03:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	*	*
04:00	0	0	0	1	0	0	0	0	0	0	0	0	0	0	1	19-28	1
05:00	0	0	0	2	0	0	0	0	0	0	0	0	0	0	2	20-29	2
06:00	0	1	5	5	0	0	0	0	0	0	0	0	0	0	11	21-30	9
07:00	0	17	44	11	**2**	0	0	0	0	0	0	0	0	0	74	18-27	53
08:00	1	9	**47**	17	2	0	0	0	0	0	0	0	0	0	**76**	19-28	57
09:00	**2**	19	30	9	1	0	0	0	0	0	0	0	0	0	61	17-26	39
10:00	2	13	35	15	1	0	0	0	0	0	0	0	0	0	66	19-28	44
11:00	1	**20**	34	**18**	1	**1**	0	0	0	0	0	0	0	0	75	18-27	47
12 PM	1	**13**	**41**	26	2	**2**	0	0	0	0	0	0	0	0	85	20-29	57
13:00	**6**	13	40	22	4	2	0	0	0	0	0	0	0	0	87	19-28	52
14:00	2	5	33	16	6	0	0	0	0	0	0	0	0	0	62	20-29	42
15:00	1	8	38	40	9	2	0	0	0	0	0	0	0	0	**98**	21-30	67
16:00	2	10	26	**42**	**13**	2	0	0	0	0	0	0	0	**1**	96	22-31	59
17:00	2	7	39	29	7	2	0	0	0	0	0	0	0	0	86	21-30	58
18:00	1	4	26	25	7	0	0	0	0	0	0	0	0	1	64	21-30	44
19:00	0	6	15	4	2	1	0	0	0	0	0	0	0	0	28	18-27	18
20:00	0	2	10	11	3	0	0	0	0	0	0	0	0	0	26	22-31	18
21:00	0	2	9	6	1	0	0	0	0	0	0	0	0	0	18	19-28	13
22:00	0	3	6	5	2	0	0	0	0	0	0	0	0	0	16	22-31	9
23:00	0	0	5	2	1	0	0	0	0	0	0	0	0	0	8	21-30	6
Total	22	153	487	308	64	12	0	0	0	0	0	0	0	2	1048		
Percent	2.1%	14.6%	46.5%	29.4%	6.1%	1.1%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.2%			
AM Peak	09:00	11:00	08:00	11:00	07:00	11:00									08:00		
Vol.	2	20	47	18	2	1									76		
PM Peak	13:00	12:00	12:00	16:00	16:00	12:00								16:00	15:00		
Vol.	6	13	41	42	13	2								1	98		

East Bay Blvd

(S of Chippewa St)

Speed

Site Code: 000000000000
Station ID:

Latitude: 0' 0.0000 South

A to B, B to A

Start Time	0 15	16 20	21 25	26 30	31 35	36 40	41 45	46 50	51 55	56 60	61 65	66 70	71 75	76 9999	Total	Pace Speed	Number in Pace
11/02/13	1	0	1	2	0	0	0	0	0	0	0	0	0	0	4	24-33	2
01:00	0	1	1	0	1	0	0	0	0	0	0	0	0	0	3	14-23	2
02:00	0	0	0	0	2	0	0	0	0	0	0	0	0	0	2	25-34	2
03:00	0	0	1	0	0	0	0	0	0	0	0	0	0	0	1	14-23	1
04:00	0	0	1	1	0	**1**	0	0	0	0	0	0	0	0	3	19-28	2
05:00	0	1	1	6	0	0	0	0	0	0	0	0	0	0	8	24-33	6
06:00	0	0	3	6	0	0	0	0	0	0	0	0	0	0	9	22-31	8
07:00	0	4	11	5	0	0	0	0	0	0	0	0	0	0	20	19-28	14
08:00	1	5	16	17	1	0	0	0	0	0	0	0	0	0	40	21-30	27
09:00	2	4	23	**23**	3	0	0	0	0	0	0	0	0	**1**	56	21-30	39
10:00	1	**8**	**46**	16	6	0	0	0	0	0	0	0	0	0	**77**	20-29	55
11:00	**3**	5	27	20	**8**	0	0	0	0	0	0	0	0	0	63	20-29	40
12 PM	**2**	7	27	23	12	0	0	0	0	0	0	0	0	0	71	21-30	43
13:00	0	**9**	23	30	7	0	0	0	0	0	0	0	0	0	69	21-30	46
14:00	2	9	**32**	**36**	6	**2**	0	0	0	0	0	0	0	0	**87**	21-30	58
15:00	1	5	26	24	**14**	2	0	0	0	0	0	0	0	0	72	22-31	44
16:00	1	4	17	22	14	0	0	0	0	0	0	0	0	0	58	23-32	36
17:00	0	8	26	31	7	0	0	0	0	0	0	0	0	0	72	21-30	49
18:00	2	8	23	16	4	0	0	0	0	0	0	0	0	0	53	20-29	33
19:00	1	2	18	17	9	0	0	0	0	0	0	0	0	0	47	22-31	31
20:00	0	0	9	12	6	1	0	0	0	0	0	0	0	0	28	22-31	20
21:00	0	2	6	7	2	0	0	0	0	0	0	0	0	0	17	22-31	11
22:00	0	0	7	7	1	0	0	0	0	0	0	0	0	0	15	22-31	12
23:00	0	0	3	4	0	0	0	0	0	0	0	0	0	0	7	22-31	6
Total	17	82	348	325	103	6	0	0	0	0	0	0	0	1	882		
Percent	1.9%	9.3%	39.5%	36.8%	11.7%	0.7%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.1%			
AM Peak	11:00	10:00	10:00	09:00	11:00	04:00								09:00	10:00		
Vol.	3	8	46	23	8	1								1	77		
PM Peak	12:00	13:00	14:00	14:00	15:00	14:00									14:00		
Vol.	2	9	32	36	14	2									87		

East Bay Blvd

(S of Chippewa St)

Speed

Site Code: 000000000000
Station ID:

Latitude: 0' 0.0000 South

A to B, B to A

Start Time	0 15	16 20	21 25	26 30	31 35	36 40	41 45	46 50	51 55	56 60	61 65	66 70	71 75	76 9999	Total	Pace Speed	Number in Pace
11/03/13	0	0	0	7	1	0	0	0	0	0	0	0	0	0	8	24-33	8
01:00	0	0	0	1	0	0	0	0	0	0	0	0	0	0	1	19-28	1
02:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	*	*
03:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	*	*
04:00	0	0	1	0	1	0	0	0	0	0	0	0	0	0	2	27-36	1
05:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	*	*
06:00	0	0	0	1	1	0	0	0	0	0	0	0	0	0	2	24-33	2
07:00	0	0	2	4	1	0	0	0	0	0	0	0	0	0	7	22-31	6
08:00	0	0	8	5	1	0	0	0	0	0	0	0	0	0	14	20-29	12
09:00	0	2	22	8	1	0	0	0	0	0	0	0	0	0	33	19-28	27
10:00	0	**9**	21	21	5	0	0	0	0	0	0	0	0	0	56	20-29	36
11:00	**1**	8	**30**	**27**	**6**	0	0	0	0	0	0	0	0	0	**72**	21-30	49
12 PM	2	11	35	24	5	0	0	0	0	0	0	0	0	0	77	20-29	50
13:00	**7**	**19**	**49**	17	4	**2**	0	0	0	0	0	0	0	**1**	**99**	18-27	58
14:00	2	15	28	18	6	1	0	**1**	0	0	**1**	0	0	0	72	19-28	40
15:00	2	17	27	28	5	2	0	0	0	0	0	0	0	0	81	20-29	46
16:00	5	13	32	23	6	0	0	0	0	0	1	0	0	0	80	20-29	46
17:00	1	7	37	**30**	6	0	0	0	0	0	0	0	0	0	81	21-30	57
18:00	1	6	21	24	5	0	0	0	0	0	0	0	0	1	58	21-30	38
19:00	0	2	11	18	**7**	0	0	0	0	0	0	0	0	0	38	22-31	27
20:00	0	3	11	15	3	0	0	0	0	0	0	0	0	0	32	21-30	23
21:00	1	0	8	11	1	0	0	0	0	0	0	0	0	0	21	22-31	16
22:00	0	0	3	5	2	0	0	0	0	0	0	0	0	0	10	22-31	8
23:00	0	1	2	3	0	1	0	0	0	0	0	0	0	0	7	22-31	4
Total	22	113	348	290	67	6	0	1	0	0	2	0	0	2	851		
Percent	2.6%	13.3%	40.9%	34.1%	7.9%	0.7%	0.0%	0.1%	0.0%	0.0%	0.2%	0.0%	0.0%	0.2%			
AM Peak	11:00	10:00	11:00	11:00	11:00										11:00		
Vol.	1	9	30	27	6										72		
PM Peak	13:00	13:00	13:00	17:00	19:00	13:00		14:00			14:00			13:00	13:00		
Vol.	7	19	49	30	7	2		1			1			1	99		

East Bay Blvd

(S of Chippewa St)

Speed

Site Code: 000000000000
Station ID:

Latitude: 0' 0.0000 South

A to B, B to A

Start Time	0 15	16 20	21 25	26 30	31 35	36 40	41 45	46 50	51 55	56 60	61 65	66 70	71 75	76 9999	Total	Pace Speed	Number in Pace
11/04/13	0	0	2	1	2	0	0	0	0	0	0	0	0	0	5	19-28	3
01:00	0	0	1	1	1	0	0	0	0	0	0	0	0	0	3	24-33	2
02:00	0	0	2	1	0	0	0	0	0	0	0	0	0	0	3	19-28	3
03:00	0	0	0	1	0	0	0	0	0	0	0	0	0	0	1	19-28	1
04:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	*	*
05:00	0	0	0	1	1	0	0	0	0	0	0	0	0	0	2	24-33	2
06:00	0	0	0	1	1	**1**	0	0	0	0	0	0	0	0	3	29-38	2
07:00	0	3	7	8	0	0	0	0	0	0	0	0	0	0	18	21-30	13
08:00	0	5	**36**	**30**	**4**	0	0	0	0	0	0	0	0	0	**75**	21-30	57
09:00	**1**	**7**	32	20	4	0	0	0	0	0	0	0	0	0	64	20-29	45
10:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
11:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
12 PM	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
13:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
14:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
15:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
16:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
17:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
18:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
19:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
20:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
21:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
22:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
23:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
Total	1	15	80	64	13	1	0	0	0	0	0	0	0	0	174		
Percent	0.6%	8.6%	46.0%	36.8%	7.5%	0.6%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%			
AM Peak	09:00	09:00	08:00	08:00	08:00	06:00									08:00		
Vol.	1	7	36	30	4	1									75		
PM Peak Vol.																	
Total	154	799	3072	2455	610	63	7	2	0	1	3	1	0	10	7177		
Percent	2.1%	11.1%	42.8%	34.2%	8.5%	0.9%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.1%			

15th Percentile :	17 MPH
50th Percentile :	23 MPH
85th Percentile :	29 MPH
95th Percentile :	32 MPH

Stats

10 MPH Pace Speed :	21-30 MPH
Number in Pace :	4691
Percent in Pace :	65.5%
Number of Vehicles > 25 MPH :	3152
Percent of Vehicles > 25 MPH :	44.0%
Mean Speed(Average) :	24 MPH

Chippewa
1900 Block
Count #85

Site Code: 000000000000
Station ID:

Latitude: 0' 0.0000 South

Start Time	Mon 30-May-11	Tue 31-May-11	Wed 01-Jun-11	Thu 02-Jun-11	Fri 03-Jun-11	Average Day	Sat 04-Jun-11	Sun 05-Jun-11	Week Average
12:00 AM	*	*	0	*	*	0	*	*	0
01:00	*	*	0	*	*	0	*	*	0
02:00	*	*	0	*	*	0	*	*	0
03:00	*	*	0	*	*	0	*	*	0
04:00	*	*	2	*	*	2	*	*	2
05:00	*	*	1	*	*	1	*	*	1
06:00	*	*	3	*	*	3	*	*	3
07:00	*	*	11	*	*	11	*	*	11
08:00	*	*	**13**	*	*	13	*	*	13
09:00	*	*	7	*	*	7	*	*	7
10:00	*	11	*	*	*	11	*	*	11
11:00	*	**14**	*	*	*	**14**	*	*	**14**
12:00 PM	*	5	*	*	*	5	*	*	5
01:00	*	**17**	*	*	*	**17**	*	*	**17**
02:00	*	17	*	*	*	17	*	*	17
03:00	*	14	*	*	*	14	*	*	14
04:00	*	17	*	*	*	17	*	*	17
05:00	*	7	*	*	*	7	*	*	7
06:00	*	12	*	*	*	12	*	*	12
07:00	*	3	*	*	*	3	*	*	3
08:00	*	1	*	*	*	1	*	*	1
09:00	*	1	*	*	*	1	*	*	1
10:00	*	1	*	*	*	1	*	*	1
11:00	*	0	*	*	*	0	*	*	0
Day Total	0	120	37	0	0	157	0	0	157
% Avg. WkDay	0.0%	76.4%	23.6%	0.0%	0.0%				
% Avg. Week	0.0%	76.4%	23.6%	0.0%	0.0%	100.0%	0.0%	0.0%	
AM Peak	-	11:00	08:00	-	-	11:00	-	-	11:00
Vol.	-	14	13	-	-	14	-	-	14
PM Peak	-	13:00	-	-	-	13:00	-	-	13:00
Vol.	-	17	-	-	-	17	-	-	17

Grand Total	0	120	37	0	0	157	0	0	157
ADT		ADT 152		AADT 152					

S E Bay Blvd

400 block

Count #105

Site Code: 000000000000
Station ID:

Latitude: 0' 0.0000 South

Start Time	Mon 29-Jul-13	Tue 30-Jul-13	Wed 31-Jul-13	Thu 01-Aug-13	Fri 02-Aug-13	Average Day	Sat 03-Aug-13	Sun 04-Aug-13	Week Average
12:00 AM	*	*	14	*	*	14	*	*	14
01:00	*	*	0	*	*	0	*	*	0
02:00	*	*	2	*	*	2	*	*	2
03:00	*	*	2	*	*	2	*	*	2
04:00	*	*	6	*	*	6	*	*	6
05:00	*	*	5	*	*	5	*	*	5
06:00	*	*	19	*	*	19	*	*	19
07:00	*	*	56	*	*	56	*	*	56
08:00	*	*	85	*	*	85	*	*	85
09:00	*	*	90	*	*	90	*	*	90
10:00	*	*	**109**	*	*	**109**	*	*	**109**
11:00	*	**105**	*	*	*	105	*	*	105
12:00 PM	*	117	*	*	*	117	*	*	117
01:00	*	123	*	*	*	123	*	*	123
02:00	*	121	*	*	*	121	*	*	121
03:00	*	128	*	*	*	128	*	*	128
04:00	*	**139**	*	*	*	**139**	*	*	**139**
05:00	*	128	*	*	*	128	*	*	128
06:00	*	94	*	*	*	94	*	*	94
07:00	*	76	*	*	*	76	*	*	76
08:00	*	89	*	*	*	89	*	*	89
09:00	*	43	*	*	*	43	*	*	43
10:00	*	23	*	*	*	23	*	*	23
11:00	*	5	*	*	*	5	*	*	5
Day Total	0	1191	388	0	0	1579	0	0	1579
% Avg. WkDay	0.0%	75.4%	24.6%	0.0%	0.0%				
% Avg. Week	0.0%	75.4%	24.6%	0.0%	0.0%	100.0%	0.0%	0.0%	
AM Peak	-	11:00	10:00	-	-	10:00	-	-	10:00
Vol.	-	105	109	-	-	109	-	-	109
PM Peak	-	16:00	-	-	-	16:00	-	-	16:00
Vol.	-	139	-	-	-	139	-	-	139

Grand Total	0	1191	388	0	0	1579	0	0	1579
ADT		ADT 1,579		AADT 1,579					