APPENDIX F

Western Avenue & 64th Street Traffic Signal Warrant

MEMORANDUM

DATE: February 27, 2023

TO: David Gleason (CDOT)

FROM: Benjamin Chavez, PE, PTOE (CBBEL)

SUBJECT: Traffic Signal Warrant Analysis Memorandum
Western Avenue at W. 64th Street
City of Chicago, Cook County, Illinois
CDOT Project Name: Traffic Signal Modernization 1B
IDOT Section No.: 21-B1672-00-TL
CDOT Project No.: B-1-672

As part of the Traffic Signal Modernization program, the Chicago Department of Transportation (CDOT) will be upgrading fourteen (14) intersections at various locations within the City of Chicago. The project proposes to upgrade two of the 14 intersections from stop control to signal control, one of which is Western Avenue at 64th Street, and all 14 traffic signals will be maintained by CDOT. The subject project will have Surface Transportation Program (STP) funds and thus will be coordinated with IDOT Bureau of Local Roads and Streets (IDOT BLRS).

The project team has conducted a traffic signal warrant analysis for the two-way stop control intersection of Western Avenue at 64th Street. This section of Western Avenue has been classified as an Other Principal Arterial and identified to be under IDOT jurisdiction, with 64th Street being classified as a local road and under the City of Chicago jurisdiction. Furthermore, Western Avenue, from US Route 14 (Peterson Avenue in the City of Chicago) to US Route 6 (159th Street in the City of Harvey) is classified as a Strategic Regional Arterial (SRA 206) Route.

Methodology

The assessment of applicable traffic signal warrants was based on the Manual on Uniform Traffic Control Devices (MUTCD), 2009 edition with 2012 revisions. Twelve-hour turning movement counts were conducted from 7AM to 7PM on April 22, 2021. Since the traffic counts were conducted in the Spring of 2021, a calibration factor was used to adjust the traffic counts to pre-COVID traffic volumes by using vehicle data from speed cameras in the surrounding areas. The Western Avenue at 64th Street intersection used a calibration factor of 1.11 and the calibrated vehicle volumes were incorporated into the traffic signal warrant analysis. The analysis for vehicle-based MUTCD Warrants 1A, 1B, 1C, 2, 3A, and 3B were analyzed using the software TEAPAC (Version 9.50). The intersection volumes met MUTCD Warrant 2 (4-Hour Vehicular Volume). See attached TEAPAC outputs and MUTCD diagrams for more information.

MUTCD Warrant 5 (School Crossing) was analyzed using video footage from the date of the traffic counts (4/22/2021). Claremont Academy, a STEM Magnet School for Pre-Kindergarten to 8th Grade, is located on 64th Street approximately 345 feet east from Western Avenue. Both the north and south approach crosswalks on Western Avenue are

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signed for school crossings and a crossing guard is assigned to the intersection from 8:30 AM to 9:15 AM and 3:45 PM to 4:15 PM during school days. The required gap for children to cross Western Avenue would be approximately 22 seconds which did not occur during the highest crossing hour (3:40 PM to 4:40 PM). A total of 27 school aged children crossed Western Avenue during the highest crossing hour (3:40 PM to 4:40 PM), which in combination with the lack of adequate gaps in traffic, satisfies MUTCD Warrant 5 (School Crossing). See attached school children count data for more information.

MUTCD Warrant 7 was analyzed using the crash data obtained from the Illinois Department of Transportation. The study period includes five (5) years of crash data from 2014 to 2018. The study period includes a total of 14 crashes for the intersection of Western Avenue at 64th Street. Overall, 5 (35.7%) of the crashes were rear end type; 4 (28.6%) were turning type; 2 (14.3%) were sideswipe same direction type; 2 (14.3%) were angle type; and one (1) (7.1%) were head-on type. In addition, there was one A-injury crash, 1 B-injury crash, 1 C-injury crash, and 11 property damage only (PDO) crashes were reported. The crash data did not include 5 or more crashes in a single year that would be correctable with a traffic signal; therefore, MUTCD Warrant 7 was not satisfied. See attached crash summary table for more information.

Traffic Signal Warrant Analysis Results

At the intersection of Western Avenue at 64th Street, a traffic signal warrant analysis concluded that a traffic signal is warranted based on MUTCD Warrant 2 (4-Hour Vehicular Volume) and Warrant 5 (School Crossing). Since Western Avenue is a SRA Route, IDOT District 1 has implemented restricted MUTCD signal warrant criteria policy for SRA routes, which eliminates Warrant 2 from consideration and requires 1,000 feet spacing between urban signalized intersections.

However, this location has been identified as an area with high needs for increased mobility and ranks high on the City's Mobility and Economic Hardship (MOBEC) Index. In addition, the traffic volumes do satisfy MUTCD Warrant 2 (4-Hour Vehicle Volume) and Warrant 5 (School Crossings) requirements are met due to the close proximity of Claremont Academy. With the understanding that CDOT will maintain the traffic signal and related equipment, the City should request an exception to the District's SRA signal spacing requirement and approval for the installation of a new traffic signal at the intersection of Western Avenue at 64th Street.

CC: James Skvarla, PE (IDOT D1 – BLRS)

Attachments:

- Traffic Signal Warrant Analysis (TEAPAC outputs)
- MUTCD Warrant 2 (4 Hour Vehicular Volume) and Warrant 3 (Peak Hour) Diagrams
- MUTCD Warrant 5 (School Crossing) Count Data
- Crash Summary Table
- IDOT D1 SRA Warrant Criteria
- Calibrated Traffic Volumes with Hourly Summary
- Pedestrian Count Data

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S. Western Ave. at W. 64th St.

Traffic Signal Warrant Analysis Results

TEAPAC[Ver 9.50.02] - MUTCD Warrant Analysis

Conditions Used for Warrant Analysis	2009 MUTCD
Intersection # 1	
Major Street Direction	NorthSouth
Number of Lanes in North-South direction	2
Number of Lanes in East-West direction	1
Approach speed on major street is greater than 40 mph	No
Isolated community has population less than 10,000	No
Signal will not seriously disrupt progressive traffic flow	Yes
Trials of other remedies have failed to improve conditions	Yes
Number of accidents correctable by a signal	0
Peak hour stop sign delay for worst minor approach (veh-hours)	4
Number of accidents correctable by a multi-way stop	0
Peak hour average delay for all minor approaches (sec/veh)	0

TEAPAC[Ver 9.50.02] - Warrant Analysis for Traffic Signal

Warrant 1A Analysis - 8-Hour Minimum Vehicular Volume

Start Time	1500	1715	1315	1615	1130	1000	1415	1230	Req.
Minor Volume	93	85	81	75	74	72	60	48	150
Major Volume	2788	2728	2368	2732	2121	1902	1946	1710	600
Warrant Met?	No	No	No	No	No	No	No	No	8

Number of 1-hour periods meeting the warrant	0
Signal will not seriously disrupt progressive traffic flow	Yes

>> WARRANT 1A IS NOT MET <<

Warrant 1B Analysis - 8-Hour Interruption of Continuous Traffic

Start Time	1515	1715	1315	1415	1615	1130	1000	1230	Req.
Minor Volume	89	85	81	80	75	74	72	48	75
Major Volume	2860	2728	2368	2590	2732	2121	1902	1710	900
Warrant Met?	Yes	Yes	Yes	Yes	Yes	No	No	No	8

Number of 1-hour periods meeting the warrant	5
Signal will not seriously disrupt progressive traffic flow	Yes

>> WARRANT 1B IS NOT MET <<

TEAPAC[Ver 9.50.02] - Warrant Analysis for Traffic Signal

Warrant 1A Analysis (80%) - 8-Hour Minimum Vehicular Volume

Start Time	1500	1715	1315	1615	1130	1000	1415	1230	Req.
Minor Volume	93	85	81	75	74	72	60	48	120
Major Volume	2788	2728	2368	2732	2121	1902	1946	1710	480
Warrant Met?	No	No	No	No	No	No	No	No	8

Number of 1-hour periods meeting the warrant 0

Warrant 1B Analysis (80%) - 8-Hour Interruption of Continuous Traf

Start Time	1445	1545	1345	1745	1245	1645	1145	1045	Req.
Minor Volume	85	83	79	75	73	71	69	68	60
Major Volume	2721	2766	2533	2586	2283	2798	2171	2032	720
Warrant Met?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	8

Number of 1-hour periods meeting the warrant 9

Warrant 1C Analysis - 8-Hour Combination of Warrants

80% of Warrants 1A and 1B are met	No
Signal will not seriously disrupt progressive traffic flow	Yes
Trials of other remedies have failed to reduce delays	Yes

>> WARRANT 1C IS NOT MET <<

Warrant 2 Analysis - 4-Hour Vehicular Volume

Start Time	1515	1315	1415	1700	1130	1000	1800	1615	Req.
Minor Volume	89	81	80	80	74	72	67	56	———
Minor Reqrmt	80	80	80	80	80	80	80	80	<--
Warrant Met?	Yes	Yes	Yes	Yes	No	No	No	No	4

Number of 1-hour periods meeting the warrant	4
Signal will not seriously disrupt progressive traffic flow	Yes

>> WARRANT 2 IS MET <<

TEAPAC[Ver 9.50.02] - Warrant Analysis for Traffic Signal

Warrant 3A Analysis - Peak Hour Delay

Start Time	1500	1715	1315	1615	1130	1000	1415	1230	Req.
Minor Volume	93	85	81	75	74	72	60	48	100
Total Volume	2905	2834	2476	2832	2216	1998	2018	1773	800
Warrant Met?	No	No	No	No	No	No	No	No	1

Number of 1-hour periods meeting the warrant	0
Signal will not seriously disrupt progressive traffic flow	Yes
Delay for worst minor approach (must be at least 4 veh-hours)	4

>> WARRANT 3A IS NOT MET <<

Warrant 3B Analysis - Peak Hour Volume

Start Time	1500	1715	1315	1615	1130	1000	1415	1230	Req.
Minor Volume	93	85	81	75	74	72	60	48	———
Minor Reqrmt	100	100	100	100	100	100	100	105	<--
Warrant Met?	No	No	No	No	No	No	No	No	1

Number of 1-hour periods meeting the warrant	0
Signal will not seriously disrupt progressive traffic flow	Yes

>> WARRANT 3B IS NOT MET <<

Warrant 7 Analysis - Crash Experience

80% of Warrant 1A or 1B is met	Yes
Signal will not seriously disrupt progressive traffic flow	Yes
Trials of other remedies have failed to reduce accidents	Yes
Number of correctable accidents (must be 5 or more per year)	0

>> WARRANT 7 IS NOT MET <<

Summary of MUTCD Traffic Signal Warrant Analysis

Warrant 1A 8-Hour Minimum Vehicular Volume	NOT MET
Warrant 1B 8-Hour Interruption of Continuous Traffic	NOT MET
Warrant 1C 8-Hour Combination of Warrants	NOT MET
Warrant 2 4-Hour Vehicular Volume	MET
Warrant 3A Peak Hour Delay	NOT MET
Warrant 3B Peak Hour Volume	NOT MET
Warrant 7 Crash Experience	NOT MET

>> Traffic Signal Warrant is MET <<

TEAPAC[Ver 9.50.02] - 15-Minute Counts: All Vehicles - by Mvmt

Int# 1 #48 Western 64th

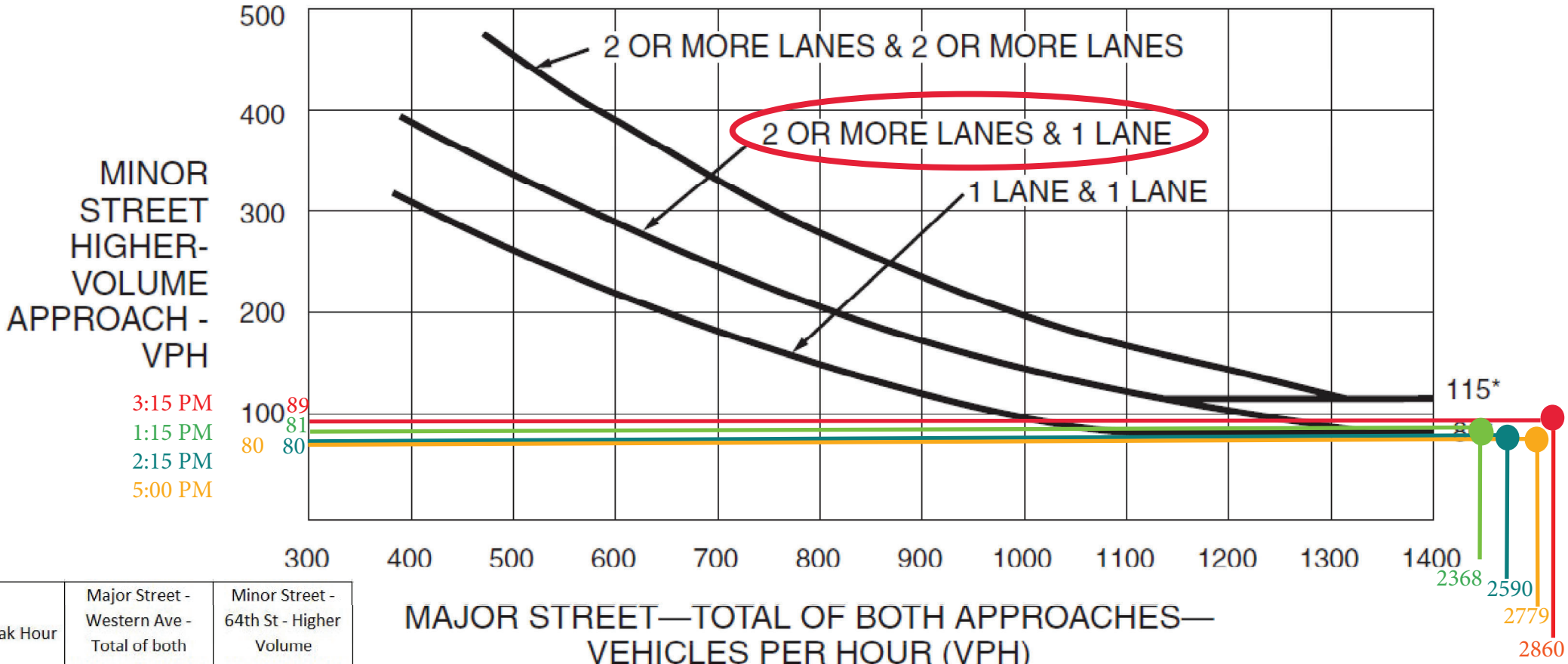
Begin Time	SB-Approach RT	SB-Approach TH	SB-Approach LT	WB-Approach RT	WB-Approach TH	WB-Approach LT	NB-Approach RT	NB-Approach TH	NB-Approach LT	EB-Approach RT	EB-Approach TH	EB-Approach LT	Int Total
700	0	170	0	0	0	0	0	330	0	1	0	4	505
715	3	181	0	3	0	0	0	387	2	3	0	2	581
730	0	201	0	6	0	0	0	390	2	9	0	3	611
745	2	248	1	1	0	1	0	329	4	8	0	2	596
800	4	213	0	1	1	2	1	331	4	2	0	3	562
815	2	222	0	2	0	0	2	300	3	11	0	4	546
830	6	202	0	9	0	2	0	291	3	2	0	3	518
845	3	229	0	8	1	2	1	273	4	12	0	3	536
900	2	211	0	1	0	7	1	248	2	4	0	2	478
915	4	233	0	3	0	4	2	251	6	4	0	3	510
930	3	210	0	2	1	2	0	299	10	12	0	6	545
945	2	223	0	1	0	3	0	264	4	10	0	3	510
1000	3	216	0	4	1	2	3	233	7	13	0	12	494
1015	3	230	0	1	2	2	0	241	7	7	0	6	499
1030	3	210	0	6	0	2	0	263	4	8	0	7	503
1045	10	234	0	3	0	1	0	232	3	17	0	2	502
1100	3	240	1	2	0	0	0	234	1	6	1	1	489
1115	8	269	0	0	0	2	0	284	8	9	0	8	588
1130	7	278	0	7	0	1	0	209	11	16	0	8	537
1145	8	259	0	3	0	0	0	269	7	11	0	4	561
1200	2	252	0	1	0	4	1	272	4	6	0	6	548
1215	6	244	1	4	0	1	1	282	8	16	0	7	570
1230	7	261	0	4	0	4	0	281	6	11	0	8	582
1245	3	275	0	0	0	3	0	302	3	7	0	9	602
1300	8	275	0	2	0	2	2	283	4	10	0	3	589
1315	4	242	0	7	0	1	0	303	11	20	0	4	592
1330	6	258	0	8	0	3	0	295	9	12	0	8	599
1345	2	300	0	0	0	4	0	307	6	9	0	7	635
1400	10	279	0	2	1	1	0	334	2	17	0	4	650
1415	7	321	0	3	0	1	0	291	2	12	0	6	643
1430	3	357	0	3	0	0	0	309	3	11	0	13	699
1445	4	349	1	4	1	0	1	294	4	11	0	7	676
1500	6	366	0	4	0	3	0	263	9	19	0	1	671
1515	6	352	0	0	2	2	0	376	7	23	0	1	769
1530	7	390	0	2	0	1	1	283	2	17	0	6	709
1545	7	387	0	7	0	3	0	316	10	19	0	7	756
1600	0	394	2	8	0	11	0	317	3	12	1	3	751
1615	0	369	1	3	1	3	0	285	3	16	1	6	688
1630	10	369	0	6	0	0	0	289	4	9	0	9	696
1645	4	383	0	4	0	3	0	313	3	13	0	2	725
1700	6	384	0	3	0	2	1	304	4	16	0	3	723
1715	3	389	0	1	0	6	0	271	6	14	0	7	697
1730	6	393	0	1	0	0	0	324	4	10	0	6	744
1745	4	374	0	7	0	3	2	300	4	20	0	4	718
1800	6	359	0	2	0	1	1	279	3	22	0	2	675
1815	6	349	0	3	0	0	0	283	4	10	0	10	665
1830	8	346	0	3	1	0	0	255	3	3	0	4	623
1845	8	311	0	0	1	0	0	266	3	7	0	9	605

TEAPAC[Ver 9.50.02] - 15-Minute Counts: All Vehicles - by Mvmt

Total	225	138	07	7	155	13	95	201	39	35	226	537	3	248	29271
Adjst	1.11	1.11	1.11	1.11	1.11	1.11	1.11	1.11	1.11	1.11	1.11	1.11	1.11	1.11	

MUTCD Warrant 2 (4 Hour Vehicular Volume) and Warrant 3 (Peak Hour Volume) Diagrams

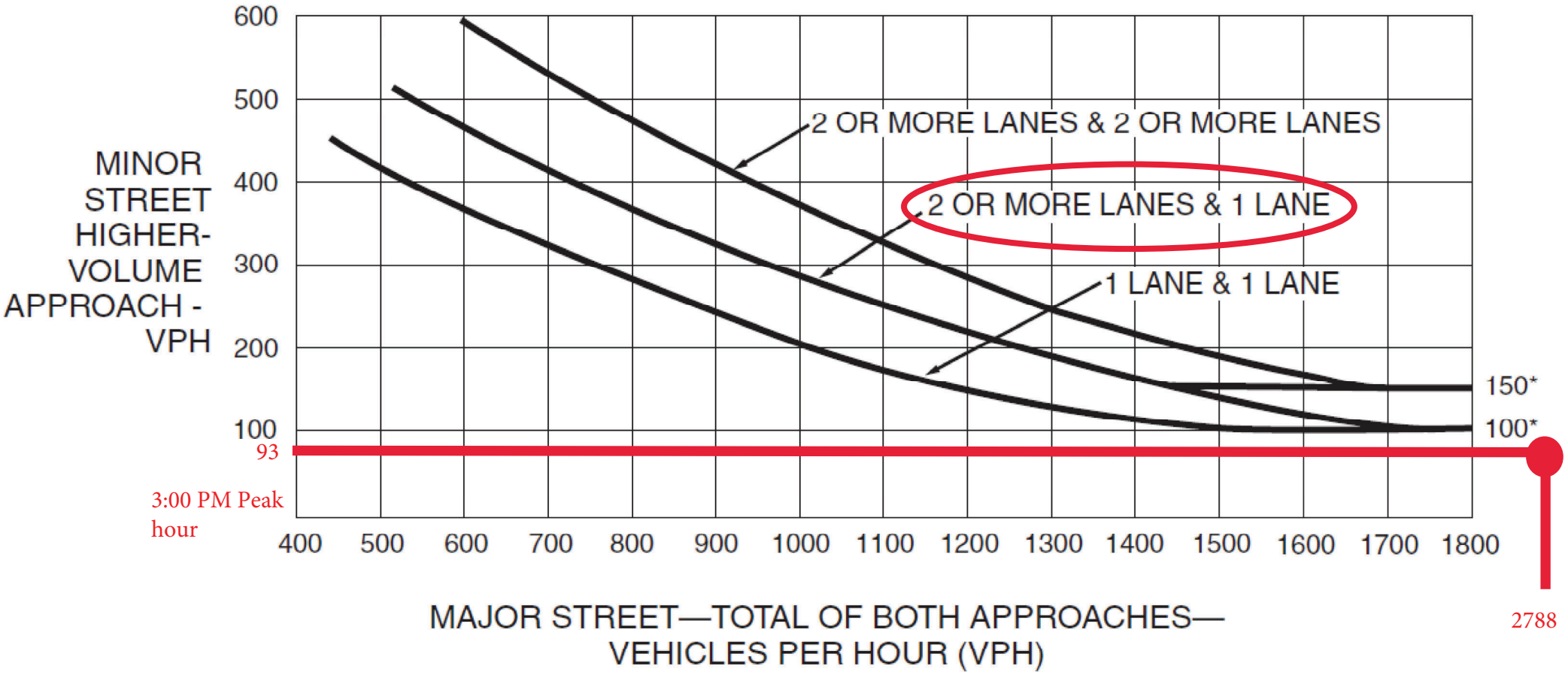
Figure 4C-1. Warrant 2, Four-Hour Vehicular Volume



Peak Hour	Major Street - Western Ave - Total of both approaches (VPH)	Minor Street - 64th St - Higher Volume approach (VPH)
1:15 PM	2368	81
2:15 PM	2590	80
3:15 PM	2860	89
5:00 PM	2779	80

Note: 115 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 80 vph applies as the lower threshold volume for a minor-street approach with one lane.

Figure 4C-3. Warrant 3, Peak Hour



*Note: 150 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 100 vph applies as the lower threshold volume for a minor-street approach with one lane.

MUTCD Warrant 5 (School Crossing)
Count Data

Western Avenue at 64th Street

MUTCD Warrant 5, School Crossing

Count Date: 4/22/2021

Crossing Location	Time Stamp	Number of school-aged children	
South Approach	3:43 PM	1	
North Approach	3:43 PM	1	
South Approach	3:48 PM	1	
South Approach	3:48 PM	1	*
North Approach	3:51 PM	1	
North Approach	4:00 PM	1	
South Approach	4:01 PM	2	
North Approach	4:01 PM	2	
North Approach	4:04 PM	3	
South Approach	4:05 PM	1	
North Approach	4:06 PM	3	
South Approach	4:09 PM	3	
North Approach	4:10 PM	2	
North Approach	4:11 PM	1	
South Approach	4:32 PM	3	
South Approach	4:33 PM	1	

Total Children

27

* Child crosses approximately 40 ft south of south approach X-walk

Crash Summary Table

TSM Project No. 1, CDOT Project No. B-9-404
2014-2018 CDOT Crash Data
Crash Data Summary

Project: Western & 64th

Town: Chicago

County: Cook

YEAR	Rear End			Angle			SSSD			SSOD			Turning			Fixed Object			Over-turned			Head On			Pedestrian			Other Object			Animal			Bicyclist			Other Non-Collision			Parked Motor Vehicle			TOTAL	
	Crash Count	Injury Type	Injury Count	Crash Count	Injury Type	Injury Count	Crash Count	Injury Type	Injury Count	Crash Count	Injury Type	Injury Count	Crash Count	Injury Type	Injury Count	Crash Count	Injury Type	Injury Count	Crash Count	Injury Type	Injury Count	Crash Count	Injury Type	Injury Count	Crash Count	Injury Type	Injury Count	Crash Count	Injury Type	Injury Count	Crash Count	Injury Type	Injury Count	Crash Count	Injury Type	Injury Count	Crash Count	Injury Type	Injury Count	Crash Count	Injury Type	Injury Count	**Crash Count**	**Injury Count**
2014	2						1						1									1																				5	
2015	1						1						1																													3	
2016	1	1 - C	1 - C	1	1 - B	2 - B																																		2	2 - B 1 - C
2017																																									
2018	1			1									2	1 - A	1 - A																									4	1 - A
TOTAL	**5**	**1 - C**	**1 - C**	**2**	**1 - B**	**2 - B**	**2**						**4**	**1 - A**	**1 - A**							**1**																		**14**	**1 - A** **2 - B** **1 - C**
%	**35.7%**			**14.3%**			**14.3%**						**28.6%**									**7.1%**																			

YEAR	INJURY TYPE					CRASH CONDITIONS						TOTAL
	K	A	B	C	PDO	Wet	Wet %	Snow/Ice	Snow/Ice %	Night	Night %	
2014					5	1	20%			1	20%	5
2015					3							3
2016			1	1		2	100%					2
2017							-		-		-	
2018		1			3							4
TOTAL		**1**	**1**	**1**	**11**	**3**	**21.4%**			**1**	**7.1%**	**14**

IDOT D1 SRA Warrant Criteria

RESTRICTIONS for STRATEGIC REGIONAL ARTERIAL ROUTES

- MUTCD 2009 Traffic Signal Warrants #1 (Condition A/B only - Combination of Warrants), #2, and #3 will be deleted for Strategic Regional Arterial (SRA) routes.

    - Warrant 1 (Condition A/B-Combination of Warrants) allows a traffic signal where Warrant 1 (Condition A) and Warrant 1 (Condition B) have at least 80 percent of the stated major and minor street values for the same eight hours of a typical day.

    - Warrant 2 allows a traffic signal where the four-hour vehicular volume requirements are met.

    - Warrant 3 allows a traffic signal where the peak hour volume requirement is met.

- The 70 percent factor (70% columns in Table 4C-1 of 2009 MUTCD) shall not be applied for locations where vehicle speed limits or 85th-percentile speeds exceed 40 mph or for intersections that lie within an isolated community along an SRA route.

- The minimum minor street volumes for Warrant #1 (Condition B only) shall be increased from 75 vehicles per hour to 100 for a single-lane minor approach and from 100 vehicles per hour to 150 for a two or more lane minor approach along an SRA route. The corresponding 80% volumes for Warrant #7 are also increased accordingly, from 60 to 80 vehicles per hour for a single-lane minor approach and from 80 to 120 vehicles per hour for a two or more lane minor approach along an SRA route.

- New signal installations along SRA routes shall be spaced no less than approximately one-half mile apart on rural SRA routes, no less than approximately one-quarter mile apart (1,320 feet) on suburban SRA routes, and no less than approximately 1,000 feet apart on urban SRA routes. These spacing may be reduced to no less than 1000 feet on urban and suburban SRA routes and no less than one-quarter mile on rural SRA routes where it can be shown that it will not adversely affect signal progression. However, at no time should the spacing be less than 1,000 feet on urban and suburban SRA routes or one-quarter mile on rural SRA routes.

Calibrated Traffic Volumes with Hourly Summary

Study Name Western Avenue & 64th Street
Start Date 05/12/2021
Start Time 7:00 AM
Calibrated Traffic Volumes, Adjustment Factor = 1.11

	Oketo Avenue Southbound			Foster Avenue Westbound			Oketo Avenue Northbound			Foster Avenue Eastbound			Intersection
Start Time	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	Total
7:00 AM	0	170	0	0	0	0	0	330	0	1	0	4	505
7:15 AM	3	181	0	3	0	0	0	387	2	3	0	2	581
7:30 AM	0	201	0	6	0	0	0	390	2	9	0	3	611
7:45 AM	2	248	1	1	0	1	0	329	4	8	0	2	596
7-8 AM	**5**	**800**	**1**	**10**	**0**	**1**	**0**	**1436**	**8**	**21**	**0**	**11**	**2293**
8:00 AM	4	213	0	1	1	2	1	331	4	2	0	3	562
8:15 AM	2	222	0	2	0	0	2	300	3	11	0	4	546
8:30 AM	6	202	0	9	0	2	0	291	3	2	0	3	518
8:45 AM	3	229	0	8	1	2	1	273	4	12	0	3	536
8-9 AM	**15**	**866**	**0**	**20**	**2**	**6**	**4**	**1195**	**14**	**27**	**0**	**13**	**2162**
9:00 AM	2	211	0	1	0	7	1	248	2	4	0	2	478
9:15 AM	4	233	0	3	0	4	2	251	6	4	0	3	510
9:30 AM	3	210	0	2	1	2	0	299	10	12	0	6	545
9:45 AM	2	223	0	1	0	3	0	264	4	10	0	3	510
9-10 AM	**11**	**877**	**0**	**7**	**1**	**16**	**3**	**1062**	**22**	**30**	**0**	**14**	**2043**
10:00 AM	3	216	0	4	1	2	3	233	7	13	0	12	494
10:15 AM	3	230	0	1	2	2	0	241	7	7	0	6	499
10:30 AM	3	210	0	6	0	2	0	263	4	8	0	7	503
10:45 AM	10	234	0	3	0	1	0	232	3	17	0	2	502
10-11 AM	**19**	**890**	**0**	**14**	**3**	**7**	**3**	**969**	**21**	**45**	**0**	**27**	**1998**

	Oketo Avenue Southbound			Foster Avenue Westbound			Oketo Avenue Northbound			Foster Avenue Eastbound			Intersection
Start Time	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	Total
11:00 AM	3	240	1	2	0	0	0	234	1	6	1	1	489
11:15 AM	8	269	0	0	0	2	0	284	8	9	0	8	588
11:30 AM	7	278	0	7	0	1	0	209	11	16	0	8	537
11:45 AM	8	259	0	3	0	0	0	269	7	11	0	4	561
11-12 PM	**26**	**1046**	**1**	**12**	**0**	**3**	**0**	**996**	**27**	**42**	**1**	**21**	**2175**
12:00 PM	2	252	0	1	0	4	1	272	4	6	0	6	548
12:15 PM	6	244	1	4	0	1	1	282	8	16	0	7	570
12:30 PM	7	261	0	4	0	4	0	281	6	11	0	8	582
12:45 PM	3	275	0	0	0	3	0	302	3	7	0	9	602
12-1 PM	**18**	**1032**	**1**	**9**	**0**	**12**	**2**	**1137**	**21**	**40**	**0**	**30**	**2302**
1:00 PM	8	275	0	2	0	2	2	283	4	10	0	3	589
1:15 PM	4	242	0	7	0	1	0	303	11	20	0	4	592
1:30 PM	6	258	0	8	0	3	0	295	9	12	0	8	599
1:45 PM	2	300	0	0	0	4	0	307	6	9	0	7	635
1-2 PM	**20**	**1075**	**0**	**17**	**0**	**10**	**2**	**1188**	**30**	**51**	**0**	**22**	**2415**
2:00 PM	10	279	0	2	1	1	0	334	2	17	0	4	650
2:15 PM	7	321	0	3	0	1	0	291	2	12	0	6	643
2:30 PM	3	357	0	3	0	0	0	309	3	11	0	13	699
2:45 PM	4	349	1	4	1	0	1	294	4	11	0	7	676
2-3 PM	**24**	**1306**	**1**	**12**	**2**	**2**	**1**	**1228**	**11**	**51**	**0**	**30**	**2668**
3:00 PM	6	366	0	4	0	3	0	263	9	19	0	1	671
3:15 PM	6	352	0	0	2	2	0	376	7	23	0	1	769
3:30 PM	7	390	0	2	0	1	1	283	2	17	0	6	709
3:45 PM	7	387	0	7	0	3	0	316	10	19	0	7	756
3-4 PM	**26**	**1495**	**0**	**13**	**2**	**9**	**1**	**1238**	**28**	**78**	**0**	**15**	**2905**

	Oketo Avenue Southbound			Foster Avenue Westbound			Oketo Avenue Northbound			Foster Avenue Eastbound			Intersection
Start Time	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	Total
4:00 PM	0	394	2	8	0	11	0	317	3	12	1	3	751
4:15 PM	0	369	1	3	1	3	0	285	3	16	1	6	688
4:30 PM	10	369	0	6	0	0	0	289	4	9	0	9	696
4:45 PM	4	383	0	4	0	3	0	313	3	13	0	2	725
4-5 PM	**14**	**1515**	**3**	**21**	**1**	**17**	**0**	**1204**	**13**	**50**	**2**	**20**	**2860**
5:00 PM	6	384	0	3	0	2	1	304	4	16	0	3	723
5:15 PM	3	389	0	1	0	6	0	271	6	14	0	7	697
5:30 PM	6	393	0	1	0	0	0	324	4	10	0	6	744
5:45 PM	4	374	0	7	0	3	2	300	4	20	0	4	718
5-6 PM	**19**	**1540**	**0**	**12**	**0**	**11**	**3**	**1199**	**18**	**60**	**0**	**20**	**2882**
6:00 PM	6	359	0	2	0	1	1	279	3	22	0	2	675
6:15 PM	6	349	0	3	0	0	0	283	4	10	0	10	665
6:30 PM	8	346	0	3	1	0	0	255	3	3	0	4	623
6:45 PM	8	311	0	0	1	0	0	266	3	7	0	9	605
6-7 PM	**28**	**1365**	**0**	**8**	**2**	**1**	**1**	**1083**	**13**	**42**	**0**	**25**	**2568**
TOTAL	**372**	**22816**	**13**	**251**	**18**	**159**	**29**	**22125**	**374**	**909**	**6**	**406**	**47478**

Pedestrian Count Data

Study Name 48 Western Avenue & 64th Street
Start Date 04/22/2021
Start Time 7:00 AM
Site Code

	Western Avenue Southbound		64th Street Westbound		Western Avenue Northbound		64th Street Eastbound	
Start Time	Peds CCW	Peds CW	Peds CCW	Peds CW	Peds CCW	Peds CW	Peds CCW	Peds CW
7:00 AM	0	0	0	0	0	0	0	0
7:15 AM	0	0	0	0	0	0	0	1
7:30 AM	0	0	0	0	0	0	1	0
7:45 AM	0	2	0	7	0	0	0	1
8:00 AM	0	1	1	0	0	0	1	1
8:15 AM	0	0	5	1	1	0	2	2
8:30 AM	0	3	1	0	1	0	0	1
8:45 AM	1	1	1	1	0	0	2	0
9:00 AM	2	4	1	0	0	2	4	2
9:15 AM	0	2	2	0	2	0	1	0
9:30 AM	1	0	2	1	0	0	2	0
9:45 AM	1	2	0	0	1	0	1	2
10:00 AM	0	3	0	1	0	0	1	1
10:15 AM	0	0	0	1	0	0	0	0
10:30 AM	0	0	2	2	0	0	0	3
10:45 AM	0	0	0	4	0	0	0	1
11:00 AM	0	0	3	1	1	0	2	1
11:15 AM	0	0	0	0	0	0	3	2
11:30 AM	0	0	2	1	0	0	1	4
11:45 AM	0	0	1	0	0	0	2	0
12:00 PM	3	0	2	2	0	0	4	2
12:15 PM	0	0	2	0	1	0	1	0
12:30 PM	1	0	3	6	0	3	1	0
12:45 PM	0	1	2	0	0	0	4	2
1:00 PM	0	2	2	0	0	0	1	2
1:15 PM	1	0	0	1	0	0	1	1
1:30 PM	0	0	2	0	3	0	4	1
1:45 PM	0	1	1	0	0	0	1	2
2:00 PM	1	1	0	2	0	1	2	2
2:15 PM	0	1	1	0	0	0	5	2
2:30 PM	0	0	0	0	0	0	1	3
2:45 PM	0	2	2	3	0	0	1	4
3:00 PM	0	1	2	1	0	1	1	1
3:15 PM	0	0	0	0	1	0	4	3
3:30 PM	1	1	0	1	0	2	2	2
3:45 PM	0	4	2	0	0	1	4	0
4:00 PM	19	3	1	2	3	6	4	4
4:15 PM	0	0	1	0	0	0	4	3
4:30 PM	0	0	4	0	5	0	6	0
4:45 PM	0	0	2	2	0	0	3	0
5:00 PM	0	0	0	2	0	0	1	7
5:15 PM	2	0	3	5	3	2	1	0
5:30 PM	0	0	1	1	0	0	3	1
5:45 PM	0	0	0	2	0	2	0	0
6:00 PM	0	1	0	1	0	0	0	3
6:15 PM	0	0	1	2	0	5	0	0
6:30 PM	0	0	1	0	5	0	1	0
6:45 PM	0	0	2	0	1	0	0	0