



**CTA Bus Slow Zone Study  
Final Project Report  
CTA Route #79  
79<sup>th</sup> Street**

**Prepared for:  
Chicago Transit Authority  
Chicago Department of Transportation**

**By:  
Stanley Consultants Inc.  
EJM Engineering Inc.**

**Final  
June 2018**

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## **APPENDIX A – Crash Tables**

Table 1 - Crash Analysis for Columbus-Kedzie

Type of Collision	2010		2011		2012		2013		2014		Total	
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
Rear End	22	28.9	20	28.2	26	42.6	32	39.5	27	35.5	127	34.8
Turning	20	26.3	28	39.4	14	23.0	9	11.1	12	15.8	83	22.7
Fixed Object	4	5.3	0	0.0	3	4.9	3	3.7	2	2.6	12	3.3
Head On	1	1.3	2	2.8	1	1.6	2	2.5	1	1.3	7	1.9
Pedestrian	0	0.0	0	0.0	0	0.0	2	2.5	1	1.3	3	0.8
Bicycle	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Parked Vehicle	0	0.0	2	2.8	0	0.0	0	0.0	0	0.0	2	0.5
Animal	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Sideswiped-Same Dir.	14	18.4	6	8.5	4	6.6	10	12.3	13	17.1	47	12.9
Sideswiped-Opp. Dir.	0	0.0	0	0.0	1	1.6	3	3.7	0	0.0	4	1.1
Angle	13	17.1	13	18.3	12	19.7	20	24.7	17	22.4	75	20.5
Overtuned	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Other Non Collision	2	2.6	0	0.0	0	0.0	0	0.0	3	3.9	5	1.4
Other Object	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
<b>Total</b>	<b>76</b>	<b>100.0</b>	<b>71</b>	<b>100.0</b>	<b>61</b>	<b>100.0</b>	<b>81</b>	<b>100.0</b>	<b>76</b>	<b>100.0</b>	<b>365</b>	<b>100.0</b>
Fatal Crashes	0	0.0	0	0.0	0	0.0	0	0.0	1	1.3	1	0.3
Type A Injury Crashes	2	2.6	2	2.8	2	3.3	3	3.7	5	6.6	14	3.8
Type B Injury Crashes	1	1.3	8	11.3	8	13.1	14	17.3	7	9.2	38	10.4
Type C Injury Crashes	6	7.9	9	12.7	7	11.5	8	9.9	12	15.8	42	11.5
<b>Total Injury Crashes</b>	<b>9</b>	<b>11.8</b>	<b>19</b>	<b>26.8</b>	<b>17</b>	<b>27.9</b>	<b>25</b>	<b>30.9</b>	<b>25</b>	<b>32.9</b>	<b>95</b>	<b>26.0</b>

Table 2 - Crash Analysis for Ashland

Type of Collision	2010		2011		2012		2013		2014		Total	
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
Rear End	12	29.3	6	19.4	10	47.6	11	36.7	18	56.3	57	36.8
Turning	12	29.3	6	19.4	1	4.8	5	16.7	3	9.4	27	17.4
Fixed Object	0	0.0	5	16.1	0	0.0	2	6.7	2	6.3	9	5.8
Head On	0	0.0	1	3.2	0	0.0	0	0.0	0	0.0	1	0.6
Pedestrian	4	9.8	3	9.7	5	23.8	3	10.0	3	9.4	18	11.6
Bicycle	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Parked Vehicle	3	7.3	1	3.2	0	0.0	1	3.3	1	3.1	6	3.9
Animal	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Sideswiped-Same Dir.	6	14.6	3	9.7	4	19.0	7	23.3	4	12.5	24	15.5
Sideswiped-Opp. Dir.	1	2.4	2	6.5	0	0.0	0	0.0	0	0.0	3	1.9
Angle	3	7.3	4	12.9	1	4.8	1	3.3	1	3.1	10	6.5
Overtuned	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Other Non Collision	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Other Object	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
<b>Total</b>	<b>41</b>	<b>100.0</b>	<b>31</b>	<b>100.0</b>	<b>21</b>	<b>100.0</b>	<b>30</b>	<b>100.0</b>	<b>32</b>	<b>100.0</b>	<b>155</b>	<b>100.0</b>
Fatal Crashes	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Type A Injury Crashes	0	0.0	1	3.2	0	0.0	1	3.3	1	3.1	3	1.9
Type B Injury Crashes	9	22.0	6	19.4	5	23.8	6	20.0	4	12.5	30	19.4
Type C Injury Crashes	2	4.9	1	3.2	5	23.8	1	3.3	4	12.5	13	8.4
<b>Total Injury Crashes</b>	<b>11</b>	<b>26.8</b>	<b>8</b>	<b>25.8</b>	<b>10</b>	<b>47.6</b>	<b>8</b>	<b>26.7</b>	<b>9</b>	<b>28.1</b>	<b>46</b>	<b>29.7</b>

Table 3 - Crash Analysis for Halsted

Type of Collision	2010		2011		2012		2013		2014		Total	
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
Rear End	21	38.9	11	28.9	6	16.7	8	27.6	10	27.0	56	28.9
Turning	16	29.6	12	31.6	5	13.9	2	6.9	7	18.9	42	21.6
Fixed Object	3	5.6	1	2.6	1	2.8	1	3.4	1	2.7	7	3.6
Head On	0	0.0	1	2.6	0	0.0	0	0.0	0	0.0	1	0.5
Pedestrian	4	7.4	2	5.3	2	5.6	4	13.8	5	13.5	17	8.8
Bicycle	0	0.0	0	0.0	1	2.8	0	0.0	1	2.7	2	1.0
Parked Vehicle	3	5.6	1	2.6	2	5.6	1	3.4	1	2.7	8	4.1
Animal	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Sideswiped-Same Dir.	4	7.4	5	13.2	12	33.3	8	27.6	8	21.6	37	19.1
Sideswiped-Opp. Dir.	1	1.9	0	0.0	0	0.0	2	6.9	1	2.7	4	2.1
Angle	2	3.7	5	13.2	6	16.7	3	10.3	3	8.1	19	9.8
Overturned	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Other Non Collision	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Other Object	0	0.0	0	0.0	1	2.8	0	0.0	0	0.0	1	0.5
<b>Total</b>	<b>54</b>	<b>100.0</b>	<b>38</b>	<b>100.0</b>	<b>36</b>	<b>100.0</b>	<b>29</b>	<b>100.0</b>	<b>37</b>	<b>100.0</b>	<b>194</b>	<b>100.0</b>
Fatal Crashes	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Type A Injury Crashes	2	3.7	0	0.0	2	5.6	0	0.0	3	8.1	7	3.6
Type B Injury Crashes	8	14.8	6	15.8	5	13.9	6	20.7	4	10.8	29	14.9
Type C Injury Crashes	6	11.1	4	10.5	7	19.4	4	13.8	5	13.5	26	13.4
<b>Total Injury Crashes</b>	<b>16</b>	<b>29.6</b>	<b>10</b>	<b>26.3</b>	<b>14</b>	<b>38.9</b>	<b>10</b>	<b>34.5</b>	<b>12</b>	<b>32.4</b>	<b>62</b>	<b>32.0</b>

Table 4 - Crash Analysis for Lafayette-State

Type of Collision	2010		2011		2012		2013		2014		Total	
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
Rear End	14	22.2	19	38.0	14	31.1	12	34.3	25	34.7	84	31.7
Turning	19	30.2	9	18.0	11	24.4	2	5.7	11	15.3	52	19.6
Fixed Object	2	3.2	1	2.0	1	2.2	2	5.7	5	6.9	11	4.2
Head On	1	1.6	1	2.0	0	0.0	0	0.0	0	0.0	2	0.8
Pedestrian	4	6.3	6	12.0	2	4.4	4	11.4	4	5.6	20	7.5
Bicycle	2	3.2	0	0.0	0	0.0	0	0.0	0	0.0	2	0.8
Parked Vehicle	2	3.2	4	8.0	2	4.4	0	0.0	5	6.9	13	4.9
Animal	0	0.0	0	0.0	0	0.0	0	0.0	1	1.4	1	0.4
Sideswiped-Same Dir.	6	9.5	4	8.0	10	22.2	7	20.0	14	19.4	41	15.5
Sideswiped-Opp. Dir.	1	1.6	0	0.0	2	4.4	2	5.7	0	0.0	5	1.9
Angle	12	19.0	6	12.0	3	6.7	6	17.1	6	8.3	33	12.5
Overturned	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Other Non Collision	0	0.0	0	0.0	0	0.0	0	0.0	1	1.4	1	0.4
Other Object	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
<b>Total</b>	<b>63</b>	<b>100.0</b>	<b>50</b>	<b>100.0</b>	<b>45</b>	<b>100.0</b>	<b>35</b>	<b>100.0</b>	<b>72</b>	<b>100.0</b>	<b>265</b>	<b>100.0</b>
Fatal Crashes	0	0.0	0	0.0	0	0.0	0	0.0	1	1.4	1	0.4
Type A Injury Crashes	1	1.6	0	0.0	0	0.0	0	0.0	1	1.4	2	0.8
Type B Injury Crashes	12	19.0	6	12.0	5	11.1	2	5.7	8	11.1	33	12.5
Type C Injury Crashes	8	12.7	3	6.0	4	8.9	3	8.6	4	5.6	22	8.3
<b>Total Injury Crashes</b>	<b>21</b>	<b>33.3</b>	<b>9</b>	<b>18.0</b>	<b>9</b>	<b>20.0</b>	<b>5</b>	<b>14.3</b>	<b>14</b>	<b>19.4</b>	<b>58</b>	<b>21.9</b>

Table 5 – Crash Analysis for Martin Luther King

Type of Collision	2010		2011		2012		2013		2014		Total	
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
Rear End	5	26.3	3	10.3	2	11.8	9	32.1	6	26.1	25	21.6
Turning	7	36.8	3	10.3	1	5.9	3	10.7	4	17.4	18	15.5
Fixed Object	0	0.0	2	6.9	0	0.0	1	3.6	1	4.3	4	3.4
Head On	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Pedestrian	1	5.3	2	6.9	4	23.5	5	17.9	1	4.3	13	11.2
Bicycle	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Parked Vehicle	3	15.8	5	17.2	1	5.9	2	7.1	3	13.0	14	12.1
Animal	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Sideswiped-Same Dir.	2	10.5	8	27.6	2	11.8	3	10.7	4	17.4	19	16.4
Sideswiped-Opp. Dir.	1	5.3	1	3.4	0	0.0	0	0.0	1	4.3	3	2.6
Angle	0	0.0	5	17.2	7	41.2	5	17.9	2	8.7	19	16.4
Overturned	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Other Non Collision	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Other Object	0	0.0	0	0.0	0	0.0	0	0.0	1	4.3	1	0.9
<b>Total</b>	<b>19</b>	<b>100.0</b>	<b>29</b>	<b>100.0</b>	<b>17</b>	<b>100.0</b>	<b>28</b>	<b>100.0</b>	<b>23</b>	<b>100.0</b>	<b>116</b>	<b>100.0</b>
Fatal Crashes	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Type A Injury Crashes	1	5.3	0	0.0	1	5.9	0	0.0	0	0.0	2	1.7
Type B Injury Crashes	1	5.3	2	6.9	4	23.5	5	17.9	4	17.4	16	13.8
Type C Injury Crashes	2	10.5	4	13.8	2	11.8	3	10.7	2	8.7	13	11.2
<b>Total Injury Crashes</b>	<b>4</b>	<b>21.1</b>	<b>6</b>	<b>20.7</b>	<b>7</b>	<b>41.2</b>	<b>8</b>	<b>28.6</b>	<b>6</b>	<b>26.1</b>	<b>31</b>	<b>26.7</b>

Table 6 - Crash Analysis for Stony Island-South Chicago

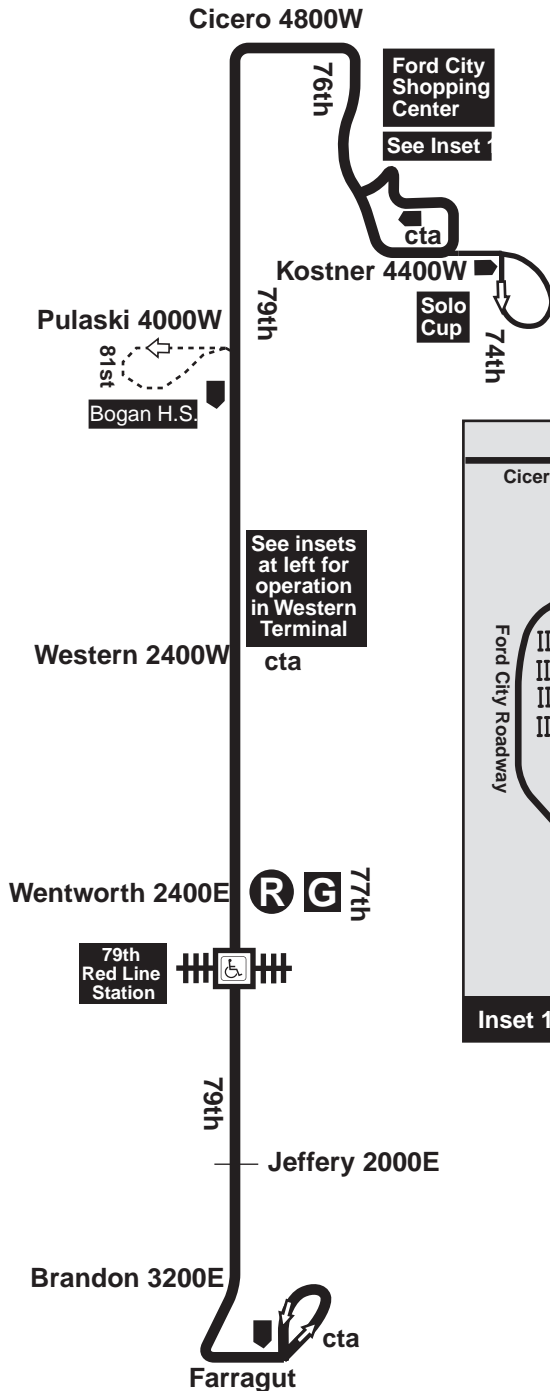
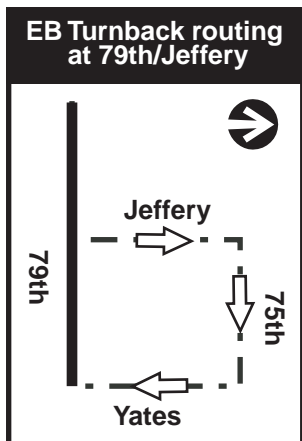
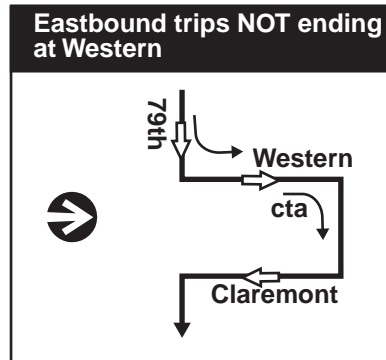
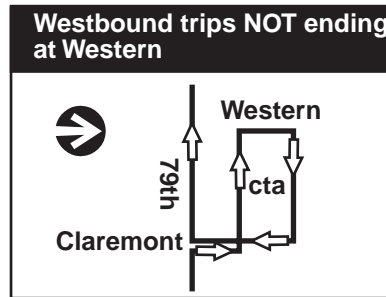
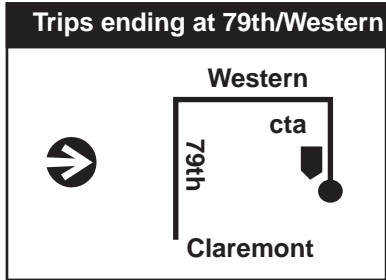
Type of Collision	2010		2011		2012		2013		2014		Total	
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
Rear End	36	35.3	30	30.3	46	37.1	42	43.3	35	34.7	189	36.1
Turning	29	28.4	29	29.3	23	18.5	24	24.7	26	25.7	131	25.0
Fixed Object	3	2.9	0	0.0	8	6.5	3	3.1	3	3.0	17	3.3
Head On	1	1.0	0	0.0	0	0.0	1	1.0	0	0.0	2	0.4
Pedestrian	3	2.9	5	5.1	2	1.6	3	3.1	3	3.0	16	3.1
Bicycle	0	0.0	0	0.0	0	0.0	0	0.0	2	2.0	2	0.4
Parked Vehicle	4	3.9	3	3.0	1	0.8	1	1.0	2	2.0	11	2.1
Animal	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Sideswiped-Same Dir.	15	14.7	19	19.2	23	18.5	9	9.3	13	12.9	79	15.1
Sideswiped-Opp. Dir.	0	0.0	0	0.0	0	0.0	1	1.0	1	1.0	2	0.4
Angle	11	10.8	10	10.1	17	13.7	13	13.4	15	14.9	66	12.6
Overturned	0	0.0	1	1.0	1	0.8	0	0.0	0	0.0	2	0.4
Other Non Collision	0	0.0	2	2.0	2	1.6	0	0.0	1	1.0	5	1.0
Other Object	0	0.0	0	0.0	1	0.8	0	0.0	0	0.0	1	0.2
<b>Total</b>	<b>102</b>	<b>100.0</b>	<b>99</b>	<b>100.0</b>	<b>124</b>	<b>100.0</b>	<b>97</b>	<b>100.0</b>	<b>101</b>	<b>100.0</b>	<b>523</b>	<b>100.0</b>
Fatal Crashes	0	0.0	0	0.0	2	1.6	0	0.0	0	0.0	2	0.4
Type A Injury Crashes	1	1.0	2	2.0	5	4.0	3	3.1	3	3.0	14	2.7
Type B Injury Crashes	10	9.8	13	13.1	10	8.1	9	9.3	6	5.9	48	9.2
Type C Injury Crashes	15	14.7	10	10.1	10	8.1	10	10.3	16	15.8	61	11.7
<b>Total Injury Crashes</b>	<b>26</b>	<b>25.5</b>	<b>25</b>	<b>25.3</b>	<b>27</b>	<b>21.8</b>	<b>22</b>	<b>22.7</b>	<b>25</b>	<b>24.8</b>	<b>125</b>	<b>23.9</b>

## **APPENDIX B – CTA Training Map**

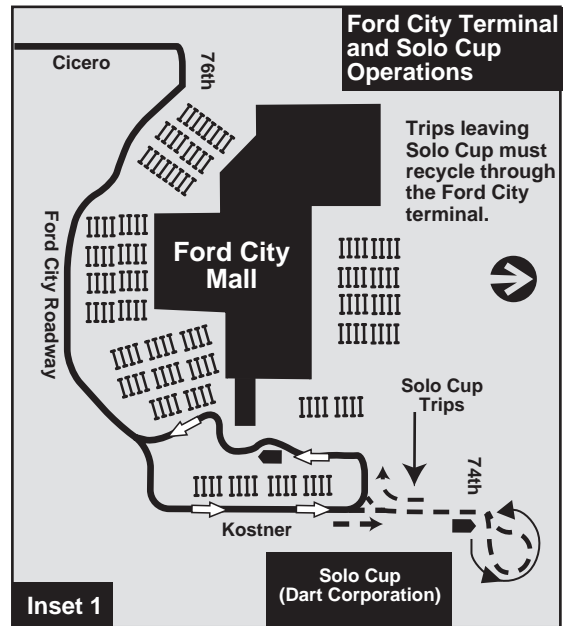
# 79 N79 79th 77th Garage Farebox Code 79



This is a Night Owl network route. Be alert to possible changes in scheduled operations after midnight



NOT DRAWN TO SCALE



<b>G</b> GARAGE	---	PULL IN	<b>R</b> RELIEF POINT
<b>L</b> LAYOVER	---	PULL OUT	cta TERMINAL
EFFECTIVE DATE	11/16/16	DATE REVISED	09/25/15
			Service Planning



## **APPENDIX C – Photo Logs**

# **CTA Bus Slow Zone Project 79<sup>th</sup>–Kedzie-Columbus Photo Log**

**Prepared for:  
Chicago Transit Authority**



**June 2017**



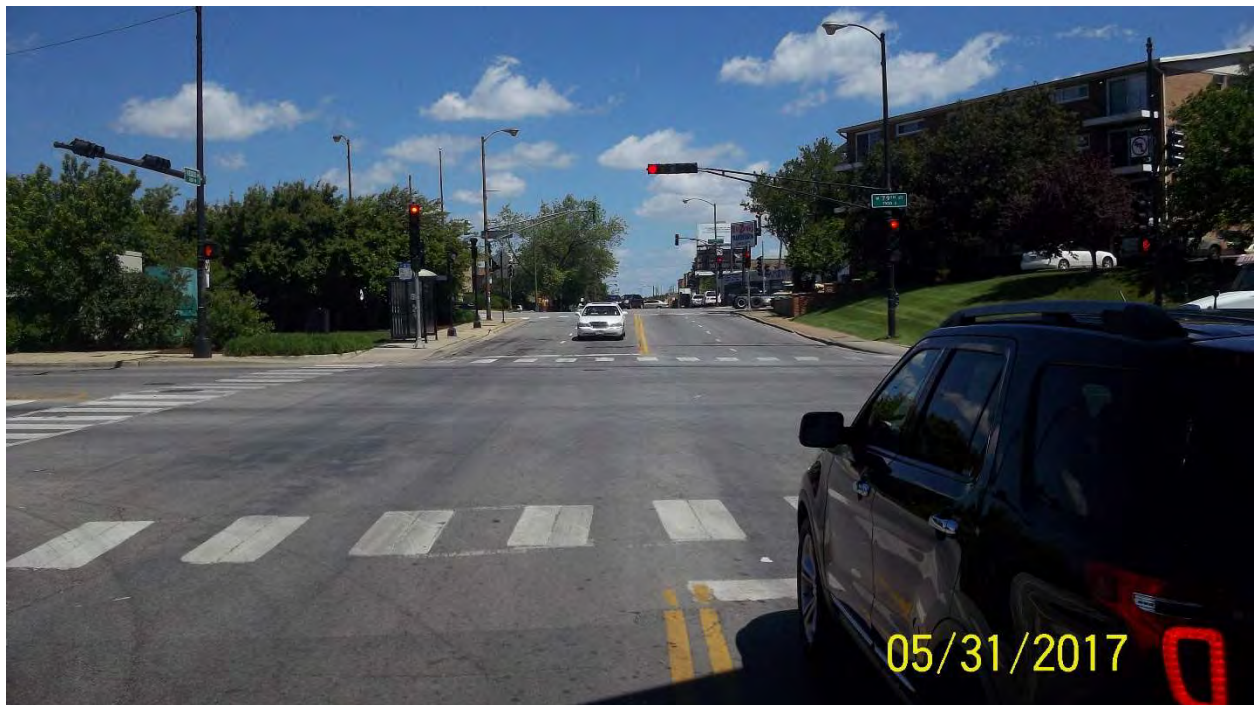
**Photo 1:** 79<sup>th</sup> St. – Looking West



**Photo 2:** Kedzie Ave. North of 79<sup>th</sup> St.– Looking South



**Photo 3:** 79<sup>th</sup> St. – Looking East



**Photo 4:** Kedzie Ave. South of 79<sup>th</sup> St. – Looking North



**Photo 5:** Kedzie Ave. North of 79<sup>th</sup> St. – Looking North



**Photo 6:** Columbus Ave. East of Kedzie Ave. – Looking Southwest



**Photo 7:** Kedzie Ave. North of Columbus Ave. – Looking South



**Photo 8:** Columbus Ave. West of Kedzie Ave. – Looking Northeast



**Photo 9:** Columbus Ave. South of 79<sup>th</sup> St. – Looking Northeast



**Photo 10:** 79<sup>th</sup> St. East of Columbus Ave. – Looking West



**Photo 11:** Columbus Ave. North of 79<sup>th</sup> St. – Looking Southwest



**Photo 12:** 79<sup>th</sup> St. West of Columbus Ave. – Looking East





**Photo 13:** Northeast corner of 79<sup>th</sup> St. / Kedzie Ave. – Looking East



**Photo 14:** Northeast corner of 79<sup>th</sup> St. / Kedzie Ave. – Looking West



**Photo 15:** Northeast corner of 79<sup>th</sup> St. / Kedzie Ave. – Looking Southwest



**Photo 16:** Northeast corner of 79<sup>th</sup> St. / Kedzie Ave. – Looking South



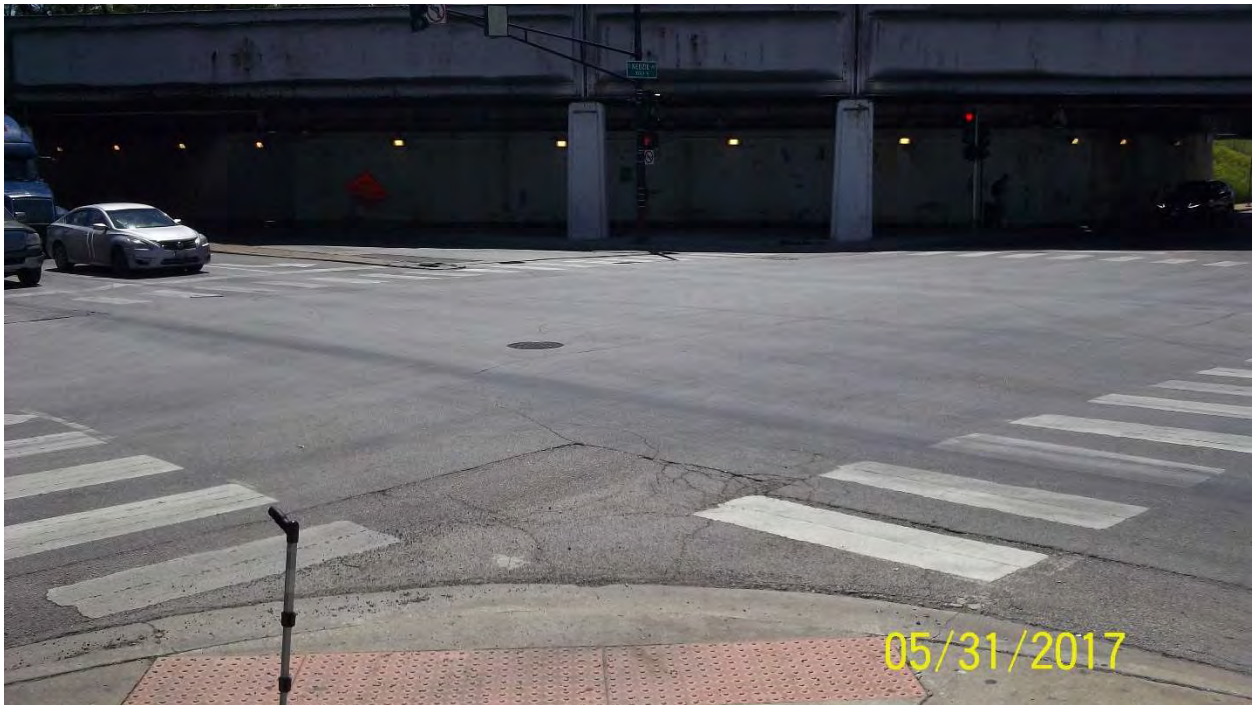
**Photo 17:** Northeast corner of 79<sup>th</sup> St. / Kedzie Ave. – Looking North



**Photo 18:** Northwest corner of 79<sup>th</sup> St. / Kedzie Ave. – Looking North



**Photo 19:** Northwest corner of 79<sup>th</sup> St. / Kedzie Ave. – Looking South



**Photo 20:** Northwest corner of 79<sup>th</sup> St. / Kedzie Ave. – Looking Southeast



**Photo 21:** Northwest corner of 79<sup>th</sup> St. / Kedzie Ave. – Looking East



**Photo 22:** Northwest corner of 79<sup>th</sup> St. / Kedzie Ave. – Looking West



**Photo 23:** Southwest corner of 79<sup>th</sup> St. / Kedzie Ave. – Looking West



**Photo 24:** Southwest corner of 79<sup>th</sup> St. / Kedzie Ave. – Looking East



**Photo 25:** Southwest corner of 79<sup>th</sup> St. / Kedzie Ave. – Looking Northeast



**Photo 26:** Southwest corner of 79<sup>th</sup> St. / Kedzie Ave. – Looking North



**Photo 27:** Southwest corner of 79<sup>th</sup> St. / Kedzie Ave. – Looking South



**Photo 28:** Southeast corner of 79<sup>th</sup> St. / Kedzie Ave. – Looking South





**Photo 29:** Southeast corner of 79<sup>th</sup> St. / Kedzie Ave. – Looking North



**Photo 30:** Southeast corner of 79<sup>th</sup> St. / Kedzie Ave. – Looking Northwest



**Photo 31:** Southeast corner of 79<sup>th</sup> St. / Kedzie Ave. – Looking West



**Photo 32:** Southeast corner of 79<sup>th</sup> St. / Kedzie Ave. – Looking East



**Photo 33:** Southwest corner of Kedzie Ave. / Columbus Ave. – Looking South



**Photo 34:** Southwest corner of Kedzie Ave. / Columbus Ave. – Looking North



**Photo 35:** Southwest corner of Kedzie Ave. / Columbus Ave. – Looking Northeast



**Photo 36:** Southwest corner of Kedzie Ave. / Columbus Ave. – Looking East



**Photo 37:** Southwest corner of Kedzie Ave. / Columbus Ave. – Looking West



**Photo 38:** Southeast corner of Kedzie Ave. / Columbus Ave. – Looking South



**Photo 39:** Southeast corner of Kedzie Ave. / Columbus Ave. – Looking North



**Photo 40:** Southeast corner of Kedzie Ave. / Columbus Ave. – Looking Northwest



**Photo 41:** Southeast corner of Kedzie Ave. / Columbus Ave. – Looking West



**Photo 42:** Southeast corner of Kedzie Ave. / Columbus Ave. – Looking East



Photo 43: Northeast corner of Kedzie Ave. / Columbus Ave. – Looking East



Photo 44: Northeast corner of Kedzie Ave. / Columbus Ave. – Looking West





**Photo 45:** Northeast corner of Kedzie Ave. / Columbus Ave. – Looking Southwest



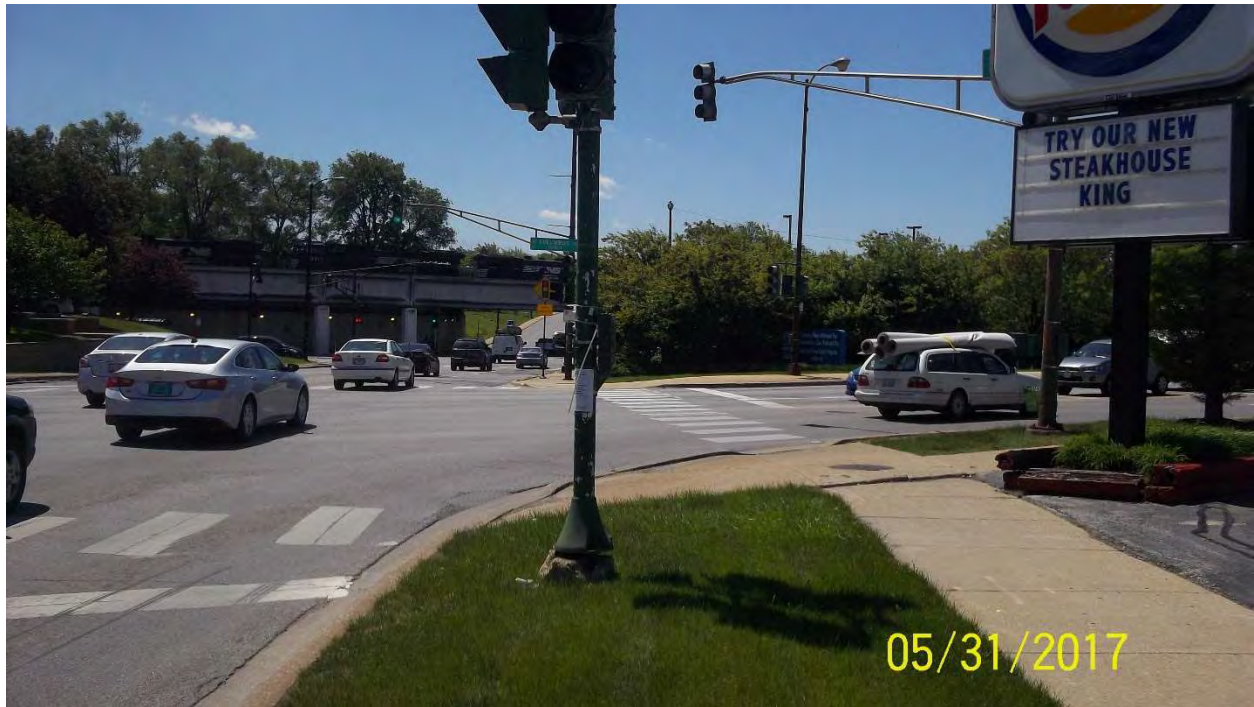
**Photo 46:** Northeast corner of Kedzie Ave. / Columbus Ave. – Looking South



**Photo 47:** Northeast corner of Kedzie Ave. / Columbus Ave. – Looking North



**Photo 48:** Northwest corner of Kedzie Ave. / Columbus Ave. – Looking North



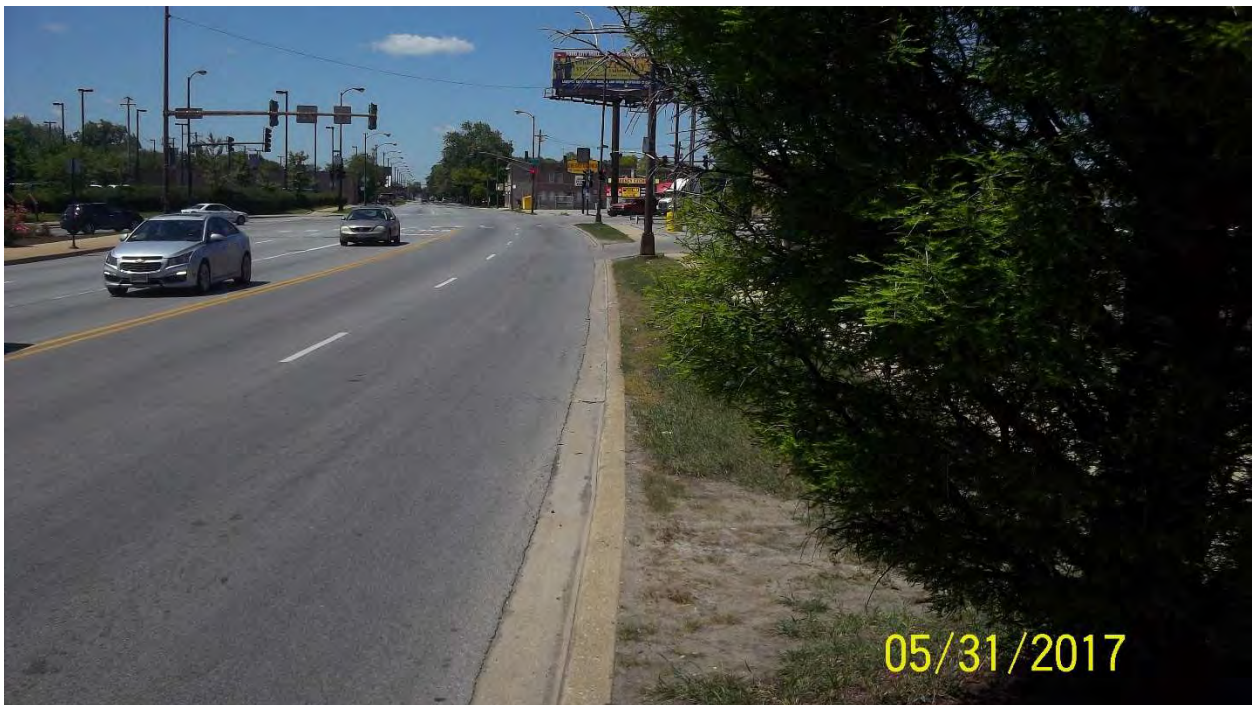
**Photo 49:** Northwest corner of Kedzie Ave. / Columbus Ave. – Looking South



**Photo 50:** Northwest corner of Kedzie Ave. / Columbus Ave. – Looking Southeast



**Photo 51:** Northwest corner of Kedzie Ave. / Columbus Ave. – Looking East



**Photo 52:** Northwest corner of Kedzie Ave. / Columbus Ave. – Looking West



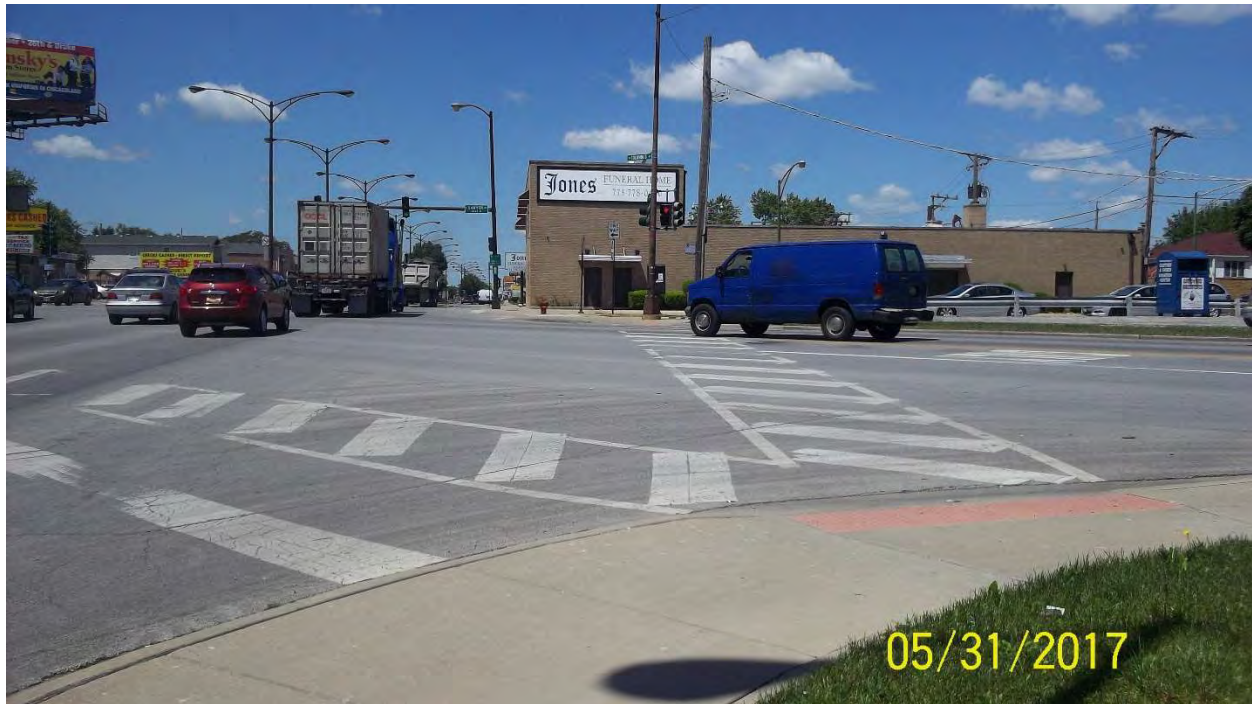
**Photo 53:** Northeast corner of 79<sup>th</sup> St. / Columbus Ave. – Looking Northeast



**Photo 54:** Northeast corner of 79<sup>th</sup> St. / Columbus Ave. – Looking South



**Photo 55:** Northeast corner of 79<sup>th</sup> St. / Columbus Ave. – Looking Southwest



**Photo 56:** Northeast corner of 79<sup>th</sup> St. / Columbus Ave. – Looking West



**Photo 57:** Northeast corner of 79<sup>th</sup> St. / Columbus Ave. – Looking East



**Photo 58:** Northwest corner of 79<sup>th</sup> St. / Columbus Ave. East of Sawyer St.– Looking Northeast



**Photo 59:** Northwest corner of 79<sup>th</sup> St. / Columbus Ave. East of Sawyer St.– Looking East



**Photo 60:** Northwest corner of 79<sup>th</sup> St. / Columbus Ave. East of Sawyer St.– Looking West





**Photo 61:** Northwest corner of 79<sup>th</sup> St. / Columbus Ave. West of Sawyer St.– Looking South



**Photo 62:** Northwest corner of 79<sup>th</sup> St. / Columbus Ave. West of Sawyer St.– Looking Southeast



**Photo 63:** Northwest corner of 79<sup>th</sup> St. / Columbus Ave. West of Sawyer St.– Looking East



**Photo 64:** Northwest corner of 79<sup>th</sup> St. / Columbus Ave. West of Sawyer St.– Looking West



**Photo 65:** Southwest corner of 79<sup>th</sup> St. / Columbus Ave. West of Sawyer St.– Looking West



**Photo 66:** Southwest corner of 79<sup>th</sup> St. / Columbus Ave. West of Sawyer St.– Looking East



**Photo 67:** Southwest corner of 79<sup>th</sup> St. / Columbus Ave. West of Sawyer St.– Looking Northeast



**Photo 68:** Southwest corner of 79<sup>th</sup> St. / Columbus Ave. West of Sawyer St.– Looking North



**Photo 69:** Southwest corner of 79<sup>th</sup> St. / Columbus Ave. West of Sawyer St.– Looking South



**Photo 70:** Southeast corner of 79<sup>th</sup> St. / Columbus Ave. West of Sawyer St.– Looking Southwest



Photo 71: Southeast corner of 79<sup>th</sup> St. / Columbus Ave. West of Sawyer St.– Looking Northeast

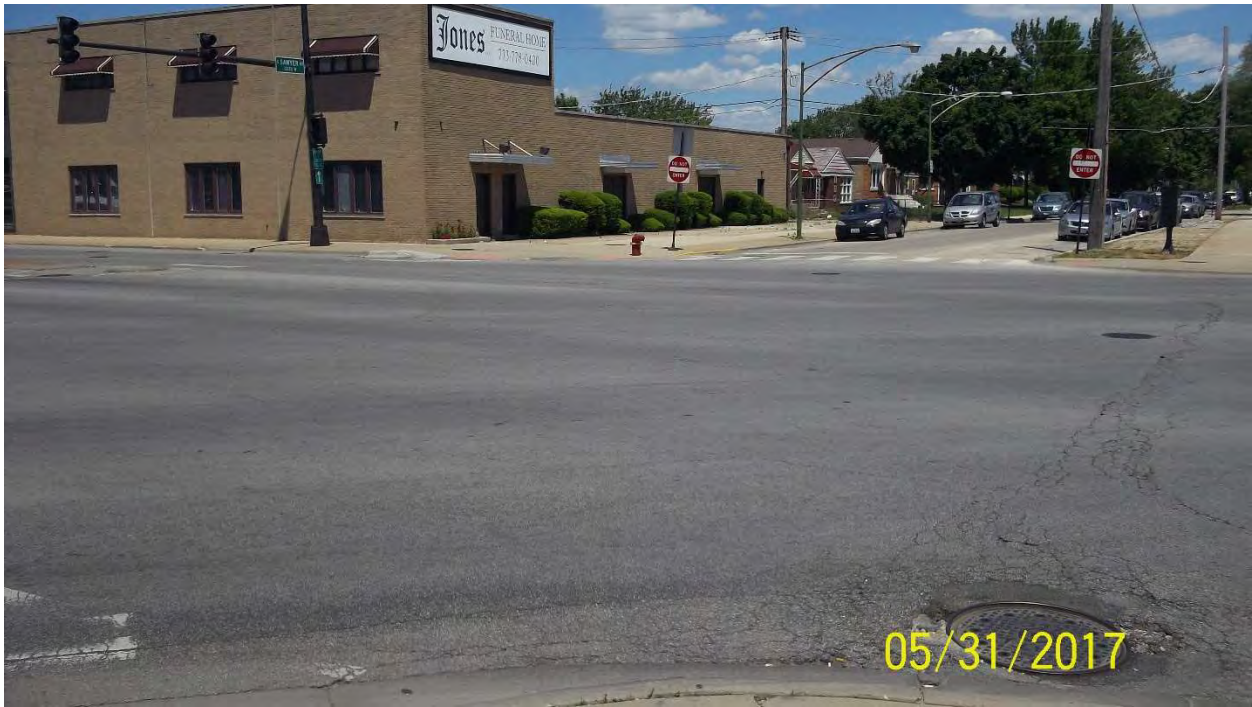


Photo 72: Southeast corner of 79<sup>th</sup> St. / Columbus Ave. West of Sawyer St.– Looking Northwest

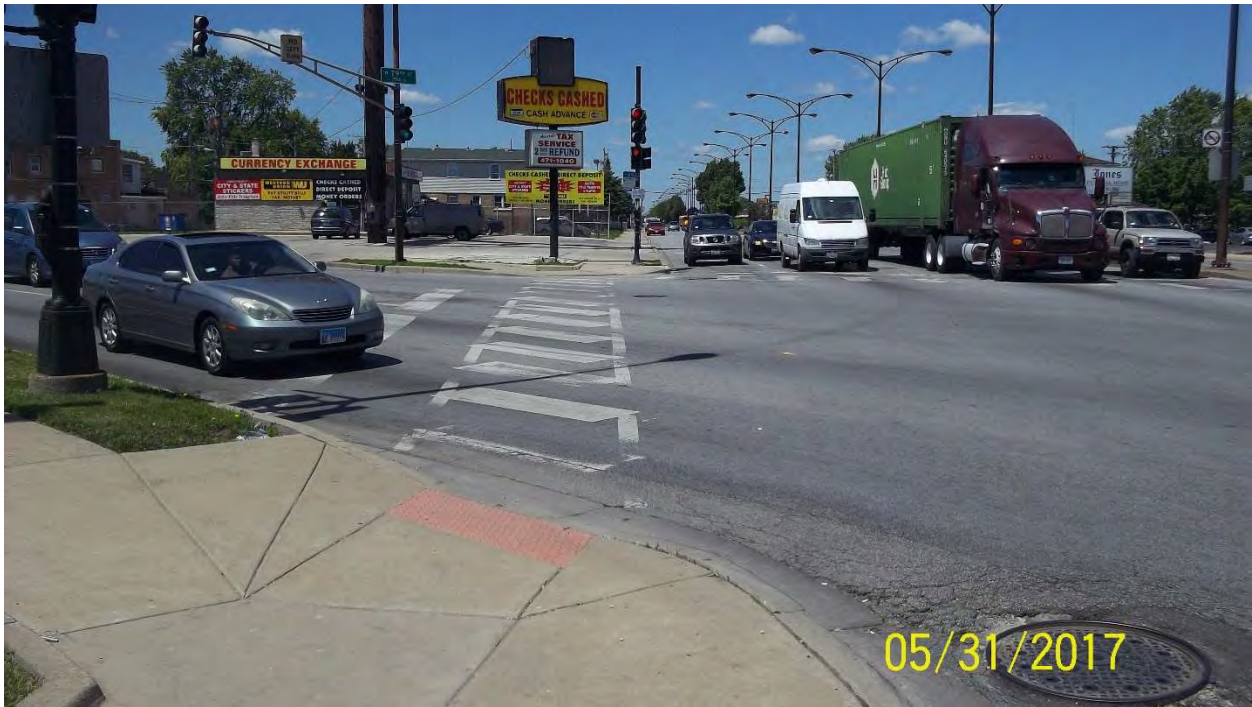


Photo 73: Southeast corner of 79<sup>th</sup> St. / Columbus Ave. West of Sawyer St.– Looking West



Photo 74: Southeast corner of 79<sup>th</sup> St. / Columbus Ave. West of Sawyer St.– Looking East

# **CTA Bus Slow Zone Project 79<sup>th</sup>-Ashland Photo Log**

**Prepared for:  
Chicago Transit Authority**



**June 2017**





**Photo 1: Ashland Ave. – Looking North**



**Photo 2: 79<sup>th</sup> St. – Looking West**



**Photo 3:** Ashland Ave. – Looking South



**Photo 4:** 79<sup>th</sup> St. – Looking East



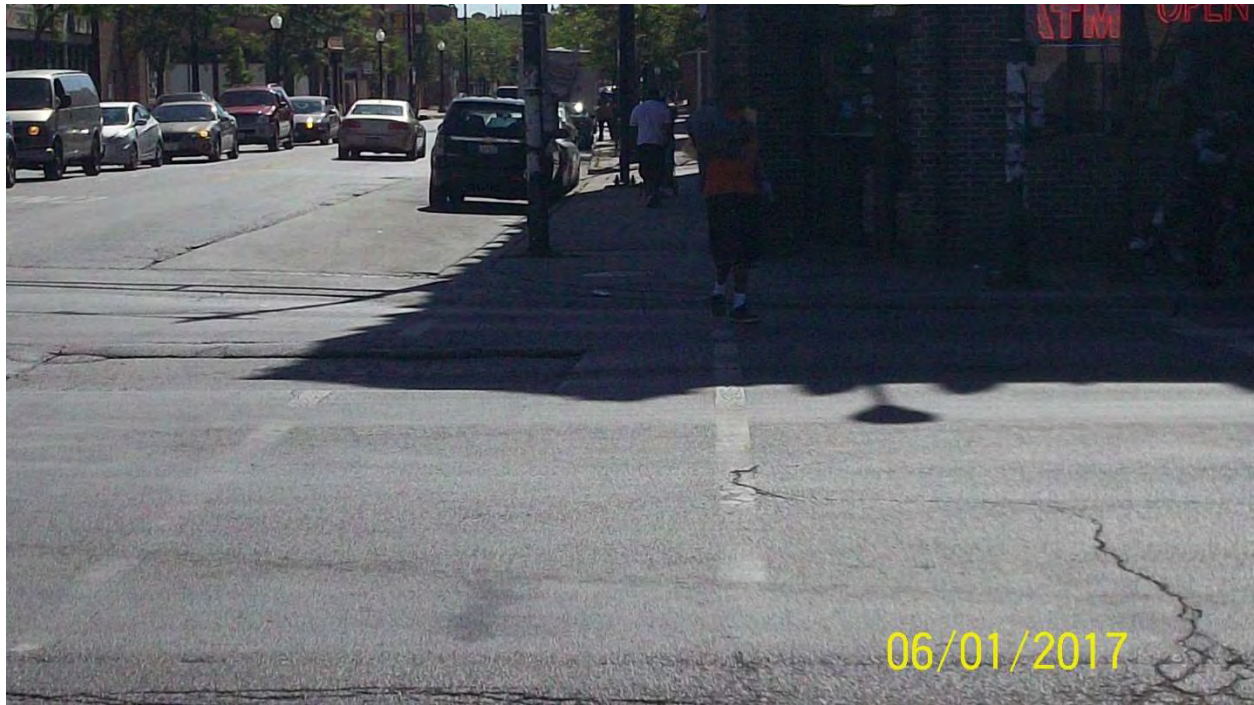
Photo 5: Southwest corner of 79<sup>th</sup> St. / Ashland Ave. – Looking South



Photo 6: Southwest corner of 79<sup>th</sup> St. / Ashland Ave. – Looking North



**Photo 7:** Southwest corner of 79<sup>th</sup> St. / Ashland Ave. – Looking Northeast



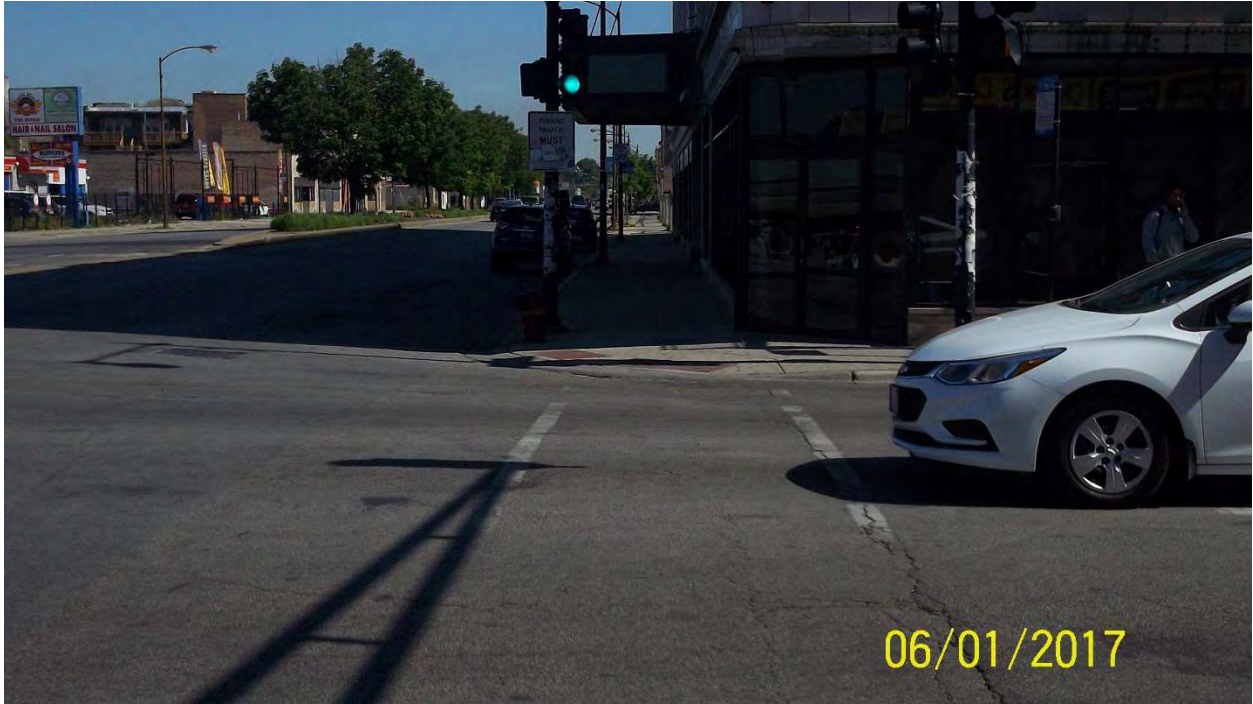
**Photo 8:** Southwest corner of 79<sup>th</sup> St. / Ashland Ave. – Looking East



**Photo 9:** Southwest corner of 79<sup>th</sup> St. / Ashland Ave. – Looking West



**Photo 10:** Southeast corner of 79<sup>th</sup> St. / Ashland Ave. – Looking South



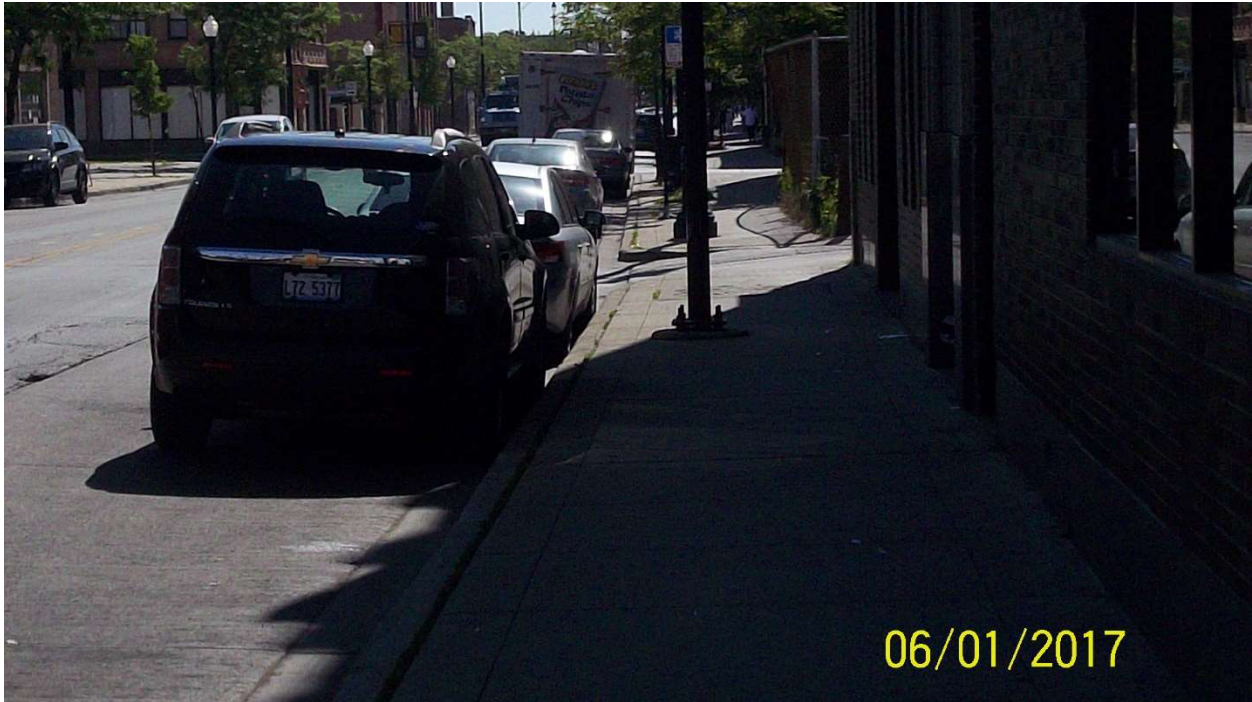
**Photo 11:** Southeast corner of 79<sup>th</sup> St. / Ashland Ave. – Looking North



**Photo 12:** Southeast corner of 79<sup>th</sup> St. / Ashland Ave. – Looking Northwest



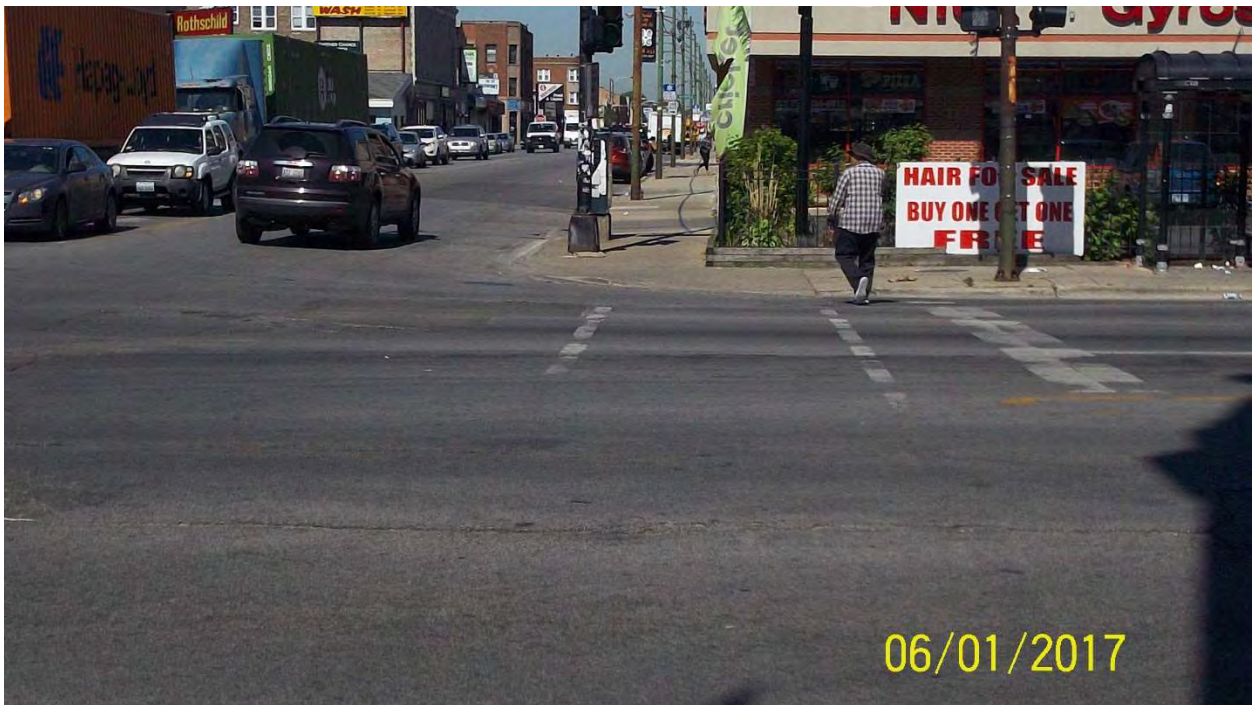
**Photo 13:** Southeast corner of 79<sup>th</sup> St. / Ashland Ave. – Looking West



**Photo 14:** Southeast corner of 79<sup>th</sup> St. / Ashland Ave. – Looking East



**Photo 15:** Northeast corner of 79<sup>th</sup> St. / Ashland Ave. – Looking East



**Photo 16:** Northeast corner of 79<sup>th</sup> St. / Ashland Ave. – Looking West





**Photo 17:** Northeast corner of 79<sup>th</sup> St. / Ashland Ave. – Looking South



**Photo 18:** Northeast corner of 79<sup>th</sup> St. / Ashland Ave. – Looking North



**Photo 19:** Northeast corner of 79<sup>th</sup> St. / Ashland Ave. – Looking Southeast



**Photo 20:** Northwest corner of 79<sup>th</sup> St. / Ashland Ave. – Looking North



**Photo 21:** Northwest corner of 79<sup>th</sup> St. / Ashland Ave. – Looking South



**Photo 22:** Northwest corner of 79<sup>th</sup> St. / Ashland Ave. – Looking Southeast



**Photo 23:** Northwest corner of 79<sup>th</sup> St. / Ashland Ave. – Looking East



**Photo 24:** Northwest corner of 79<sup>th</sup> St. / Ashland Ave. – Looking West

# **CTA Bus Slow Zone Project 79<sup>th</sup>-Halsted Photo Log**

**Prepared for:  
Chicago Transit Authority**



**June 2017**



**Photo 1: Halsted St. – Looking South**



**Photo 2: 79<sup>th</sup> St. – Looking East**



**Photo 3: Halsted St. – Looking North**



**Photo 4: 79<sup>th</sup> St. – Looking West**



**Photo 5:** Northwest corner of 79<sup>th</sup> St. / Halsted St. – Looking West



**Photo 6:** Northwest corner of 79<sup>th</sup> St. / Halsted St. – Looking East





**Photo 7:** Northwest corner of 79<sup>th</sup> St. / Halsted St. – Looking Southeast



**Photo 8:** Northwest corner of 79<sup>th</sup> St. / Halsted St. – Looking South



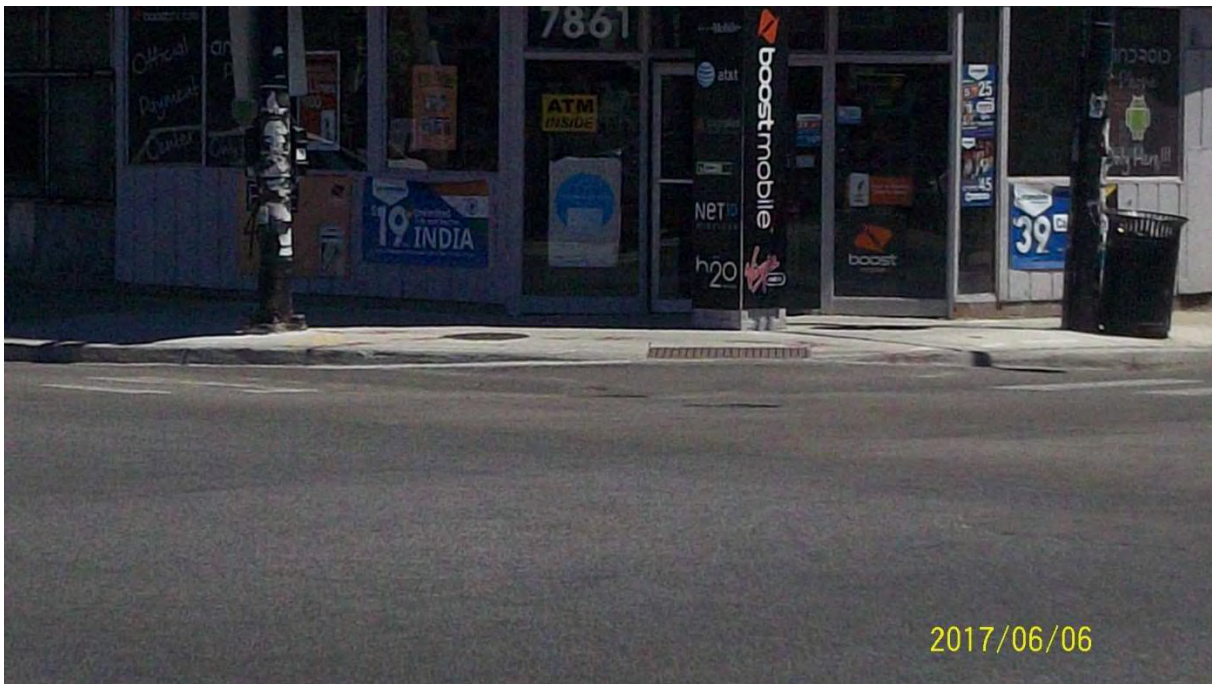
**Photo 9:** Northwest corner of 79<sup>th</sup> St. / Halsted St. – Looking North



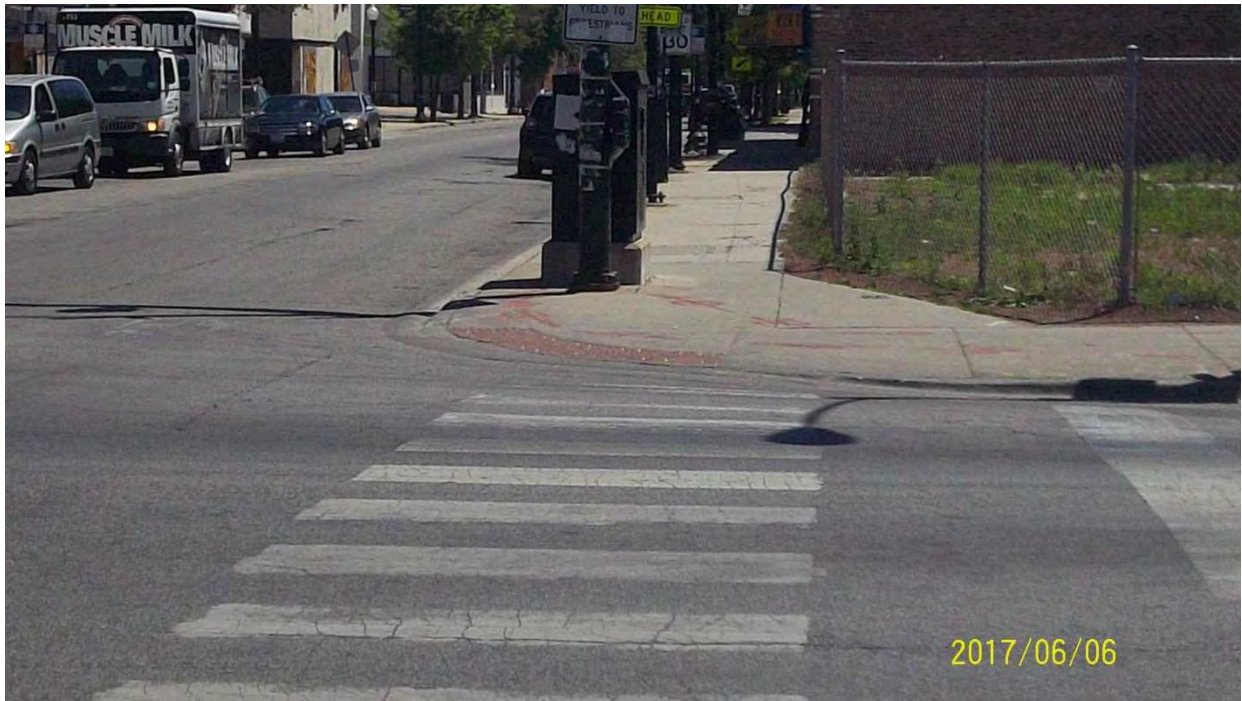
**Photo 10:** Southwest corner of 79<sup>th</sup> St. / Halsted St. – Looking South



**Photo 11:** Southwest corner of 79<sup>th</sup> St. / Halsted St. – Looking North



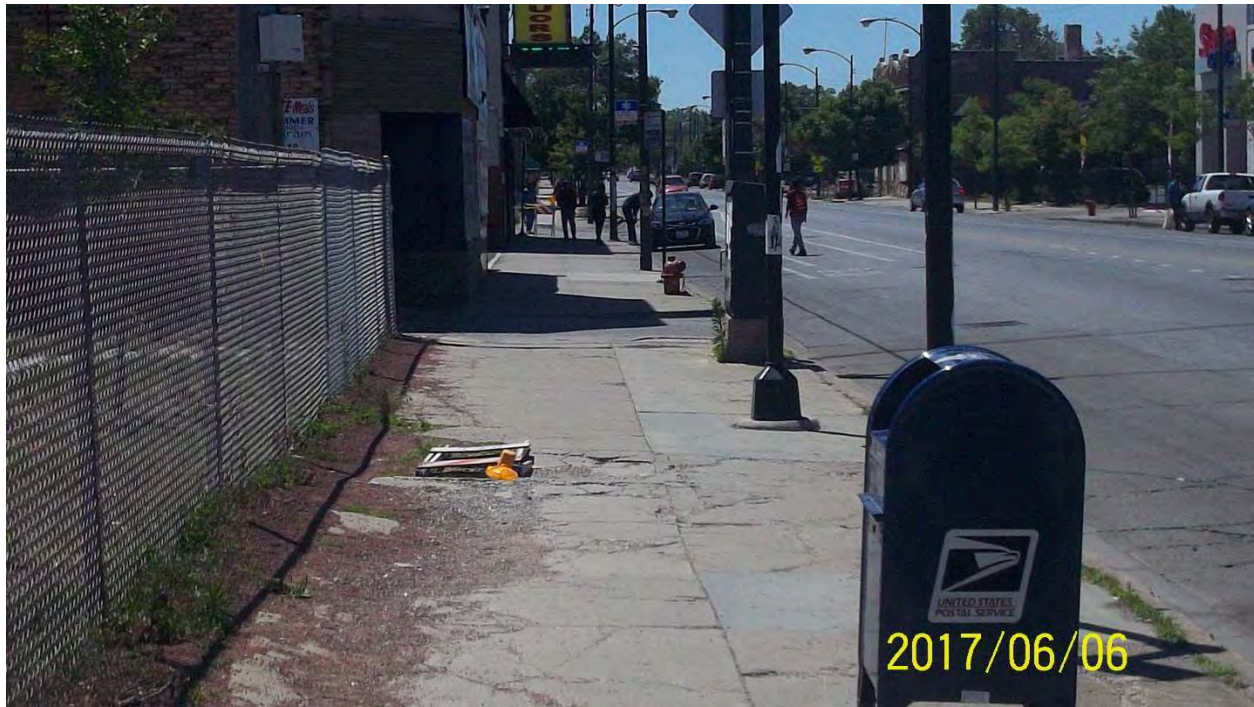
**Photo 12:** Southwest corner of 79<sup>th</sup> St. / Halsted St. – Looking Northeast



**Photo 13:** Southwest corner of 79<sup>th</sup> St. / Halsted St. – Looking East



**Photo 14:** Southwest corner of 79<sup>th</sup> St. / Halsted St. – Looking West



**Photo 15:** Southeast corner of 79<sup>th</sup> St. / Halsted St. – Looking South



**Photo 16:** Southeast corner of 79<sup>th</sup> St. / Halsted St. – Looking North



**Photo 17:** Southeast corner of 79<sup>th</sup> St. / Halsted St. – Looking Northwest



**Photo 18:** Southeast corner of 79<sup>th</sup> St. / Halsted St. – Looking West



**Photo 19:** Southeast corner of 79<sup>th</sup> St. / Halsted St. – Looking East



**Photo 20:** Northeast corner of 79<sup>th</sup> St. / Halsted St. – Looking East



**Photo 21:** Northeast corner of 79<sup>th</sup> St. / Halsted St. – Looking West



**Photo 22:** Northeast corner of 79<sup>th</sup> St. / Halsted St. – Looking Southwest





**Photo 23:** Northeast corner of 79<sup>th</sup> St. / Halsted St. – Looking South



**Photo 24:** Northeast corner of 79<sup>th</sup> St. / Halsted St. – Looking North

# **CTA Bus Slow Zone Project 79<sup>th</sup>-Lafayette Photo Log**

**Prepared for:  
Chicago Transit Authority**



**June 2017**



**Photo 1:** 79<sup>th</sup> St. – Looking East



**Photo 2:** Lafayette St. – Looking South



**Photo 3: 79<sup>th</sup> St. – Looking West**



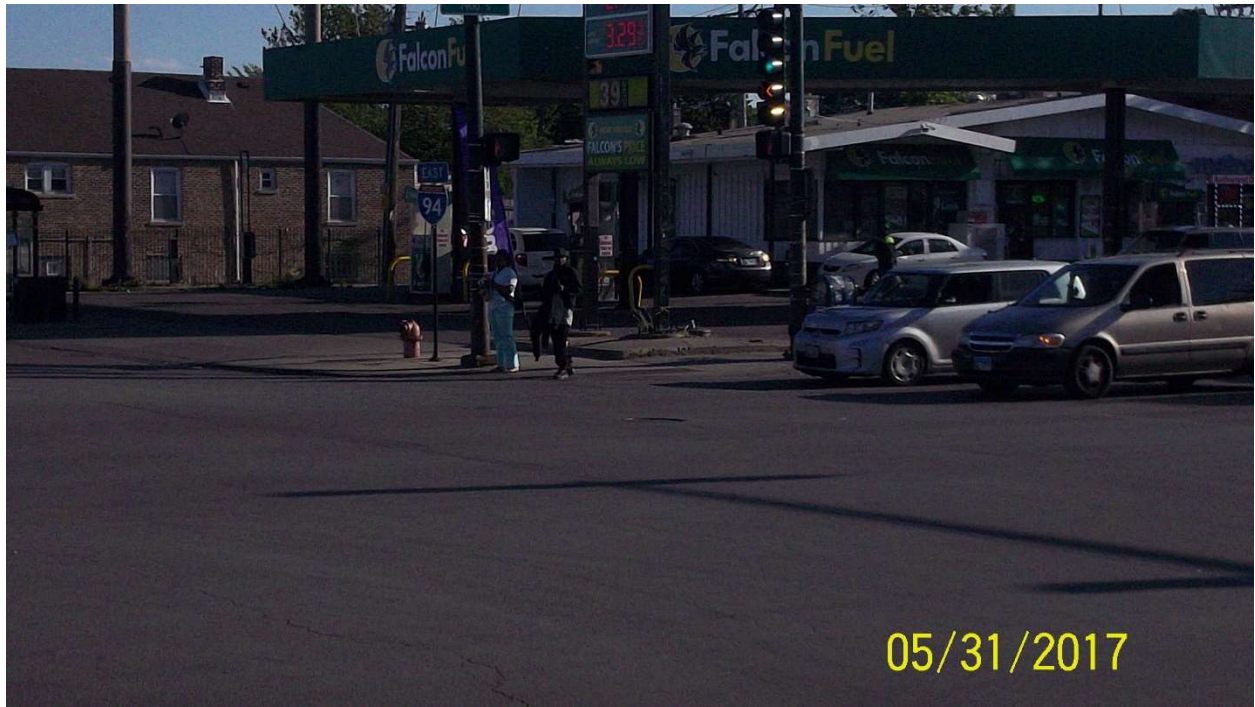
**Photo 4: Lafayette St. – Looking North**



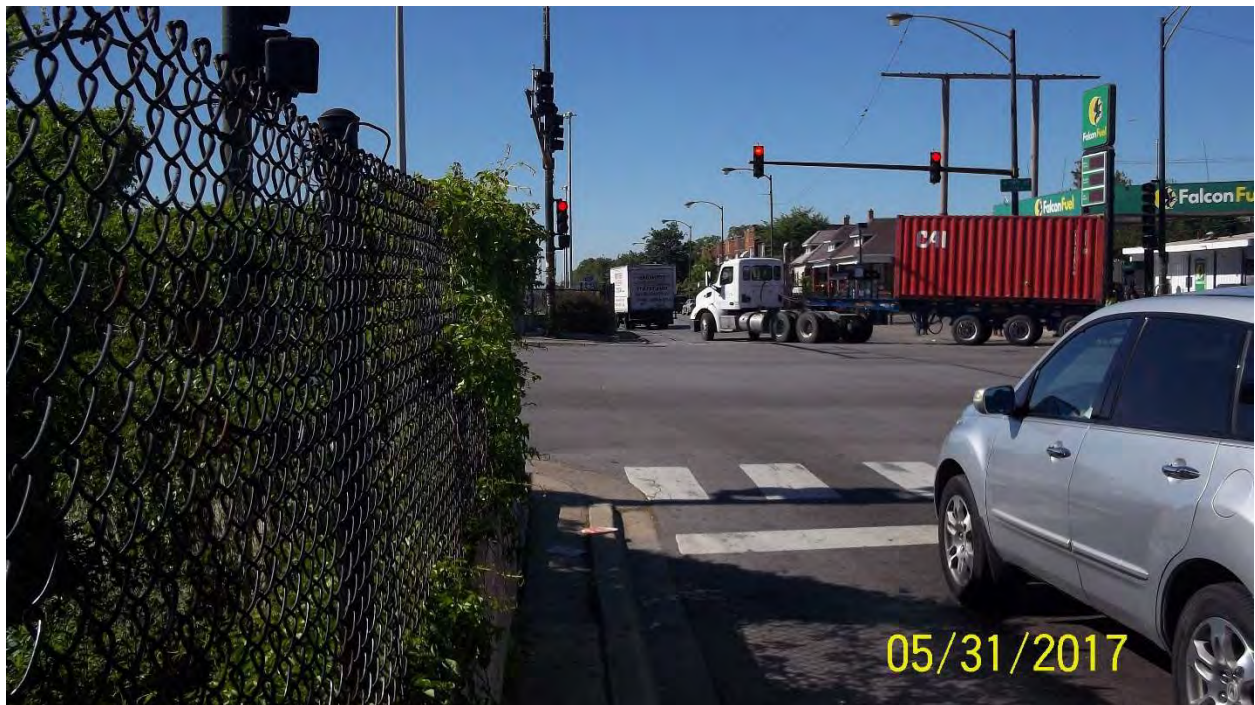
**Photo 5:** Northeast corner of 79<sup>th</sup> St. / Lafayette St. – Looking East



**Photo 6:** Northeast corner of 79<sup>th</sup> St. / Lafayette St. – Looking West



**Photo 7:** Northeast corner of 79<sup>th</sup> St. / Lafayette St. – Looking Southwest



**Photo 8:** Northeast corner of 79<sup>th</sup> St. / Lafayette St. – Looking South



**Photo 9:** Northeast corner of 79<sup>th</sup> St. / Lafayette St. – Looking North



**Photo 10:** Northwest corner of 79<sup>th</sup> St. / Lafayette St. – Looking North



**Photo 11:** Northwest corner of 79<sup>th</sup> St. / Lafayette St. – Looking South

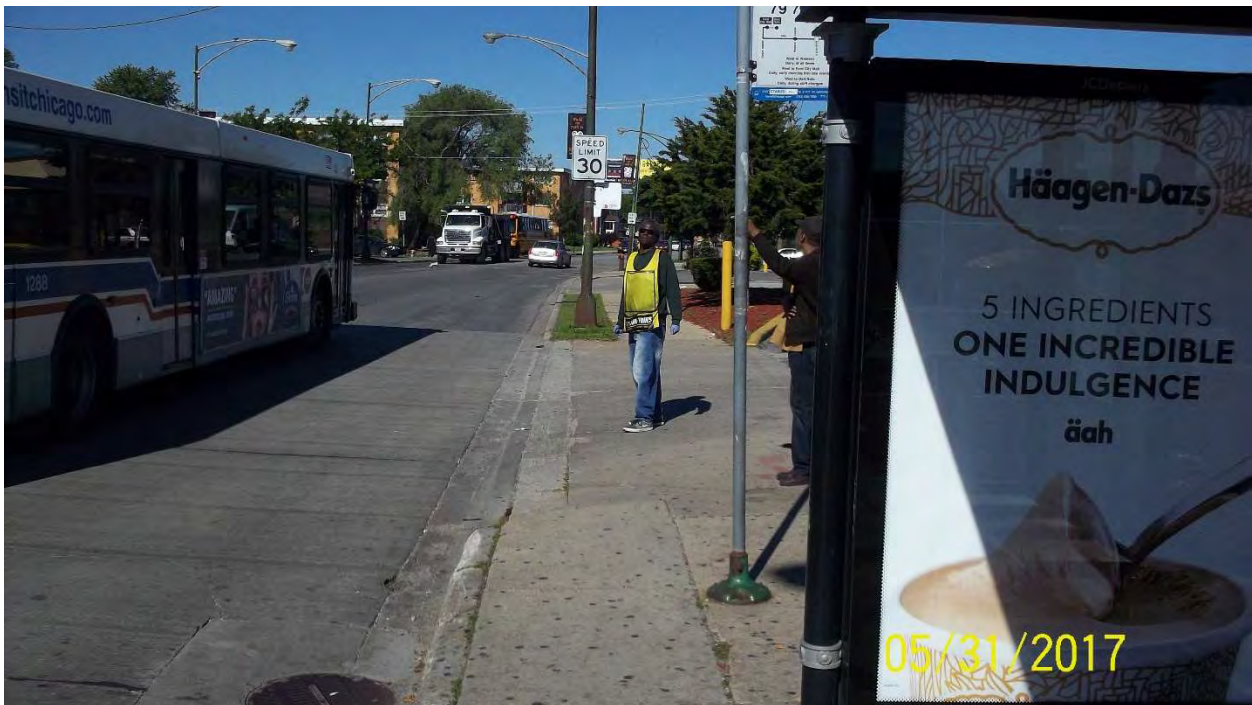


**Photo 12:** Northwest corner of 79<sup>th</sup> St. / Lafayette St. – Looking Southeast





**Photo 13:** Northwest corner of 79<sup>th</sup> St. / Lafayette St. – Looking East



**Photo 14:** Northwest corner of 79<sup>th</sup> St. / Lafayette St. – Looking West



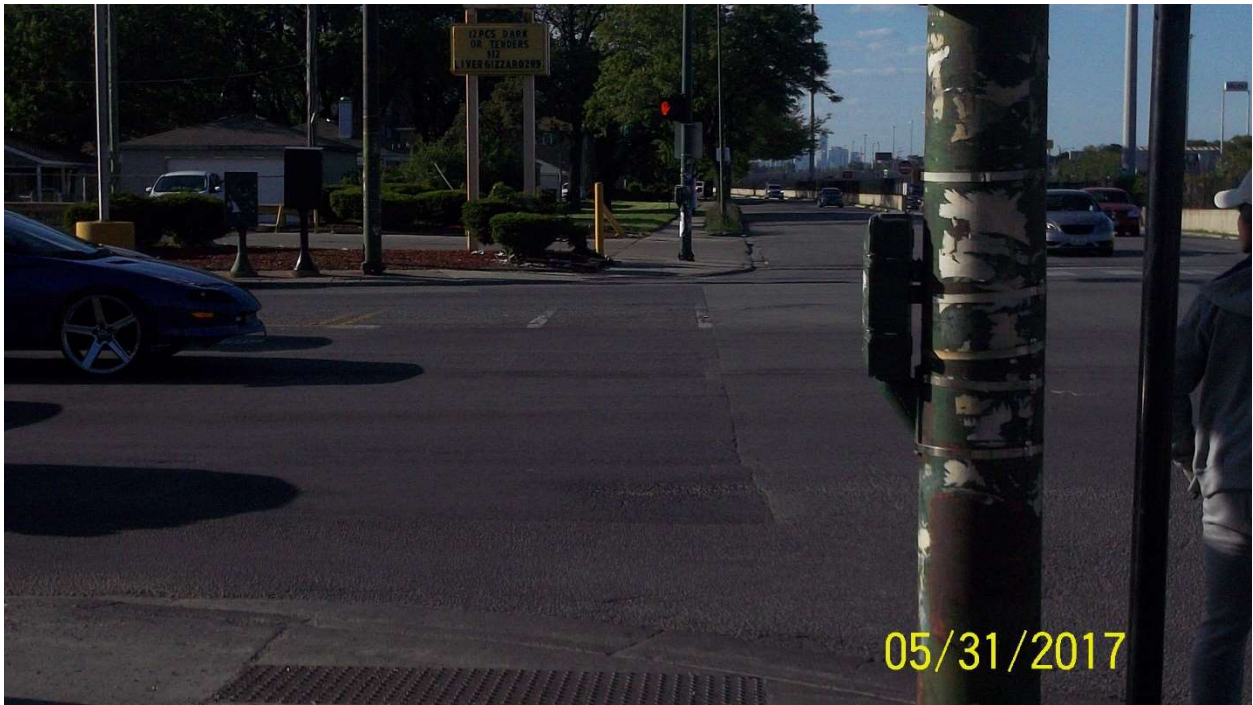
**Photo 15:** Southwest corner of 79<sup>th</sup> St. / Lafayette St. – Looking West



**Photo 16:** Southwest corner of 79<sup>th</sup> St. / Lafayette St. – Looking East



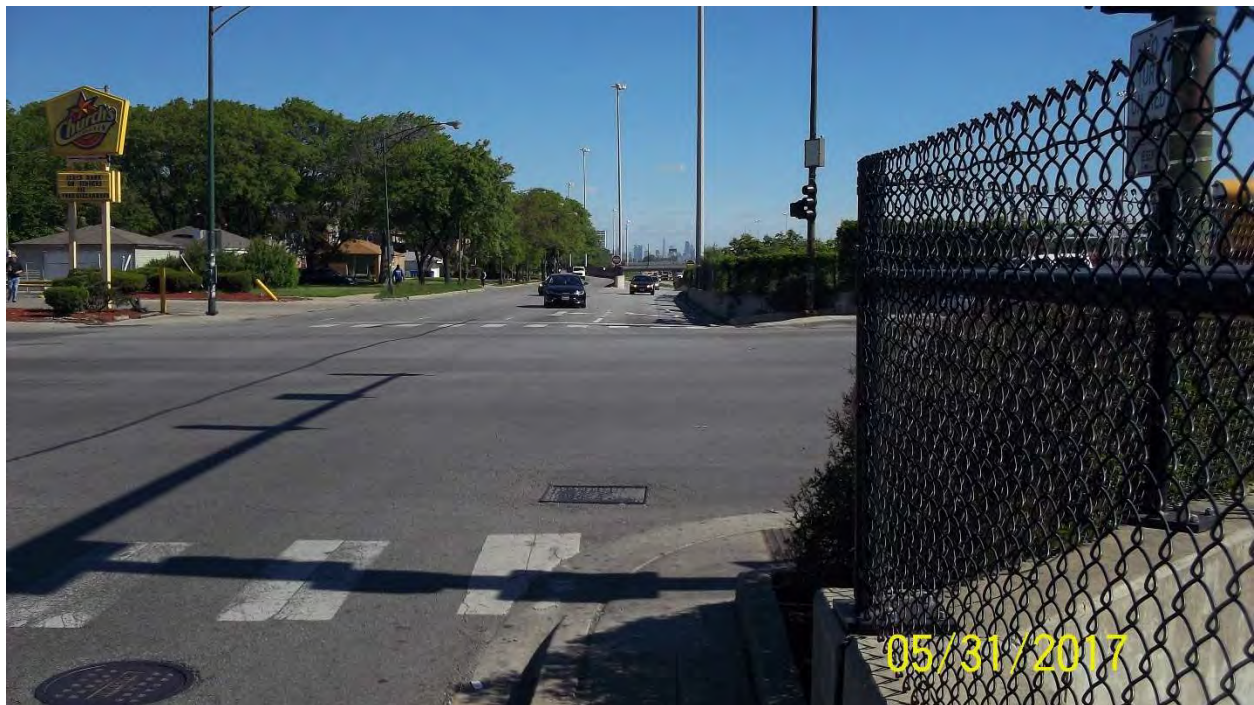
**Photo 17:** Southwest corner of 79<sup>th</sup> St. / Lafayette St. – Looking Northeast



**Photo 18:** Southwest corner of 79<sup>th</sup> St. / Lafayette St. – Looking North



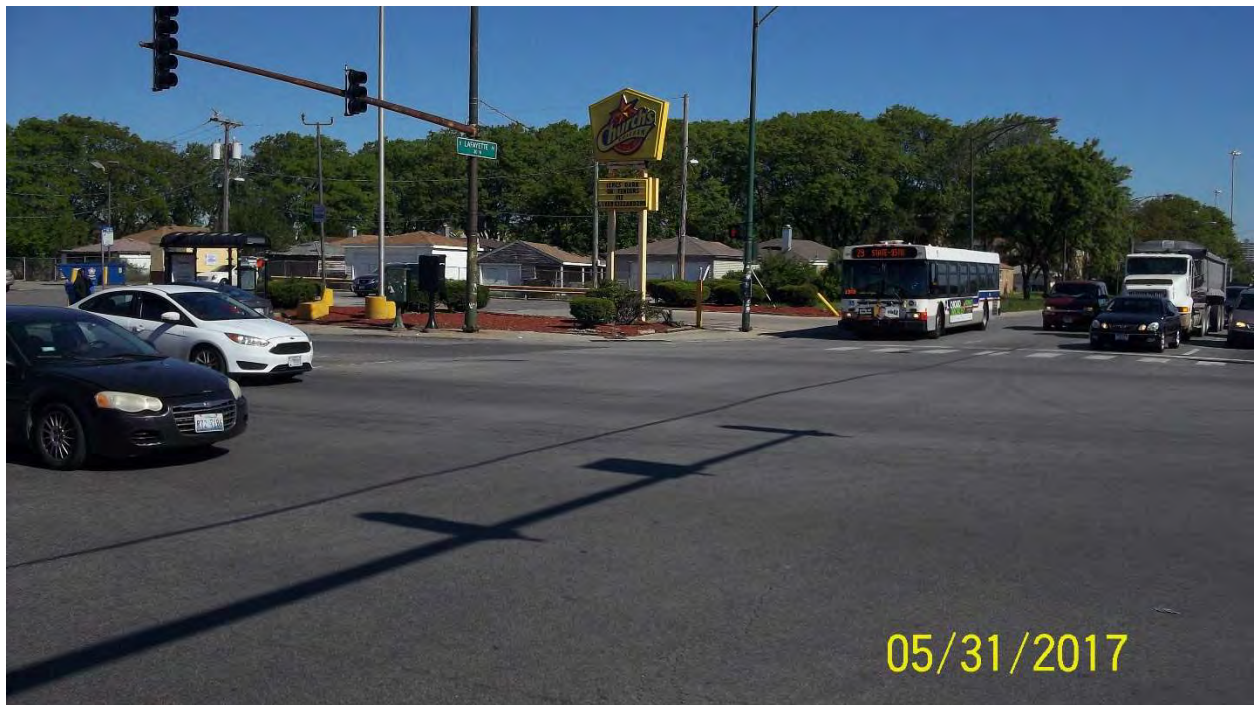
**Photo 19:** Southwest corner of 79<sup>th</sup> St. / Lafayette St. – Looking North



**Photo 20:** Southeast corner of 79<sup>th</sup> St. / Lafayette St. – Looking North



**Photo 21:** Southeast corner of 79<sup>th</sup> St. / Lafayette St. – Looking South



**Photo 22:** Southeast corner of 79<sup>th</sup> St. / Lafayette St. – Looking Northwest



**Photo 23:** Southeast corner of 79<sup>th</sup> St. / Lafayette St. – Looking West



**Photo 24:** Southeast corner of 79<sup>th</sup> St. / Lafayette St. – Looking East

# **CTA Bus Slow Zone Project 79<sup>th</sup>-State Photo Log**

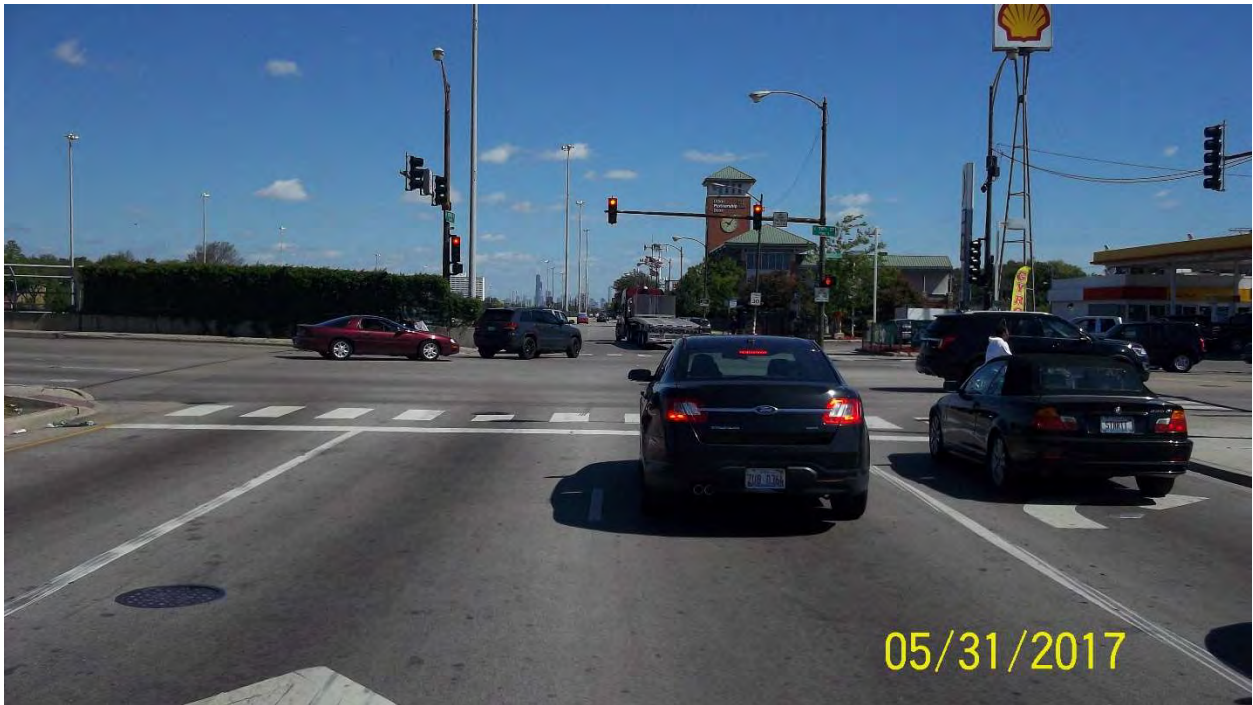
**Prepared for:  
Chicago Transit Authority**



**June 2017**



**Photo 1:** 79<sup>th</sup> St. – Looking East



**Photo 2:** State St. – Looking North

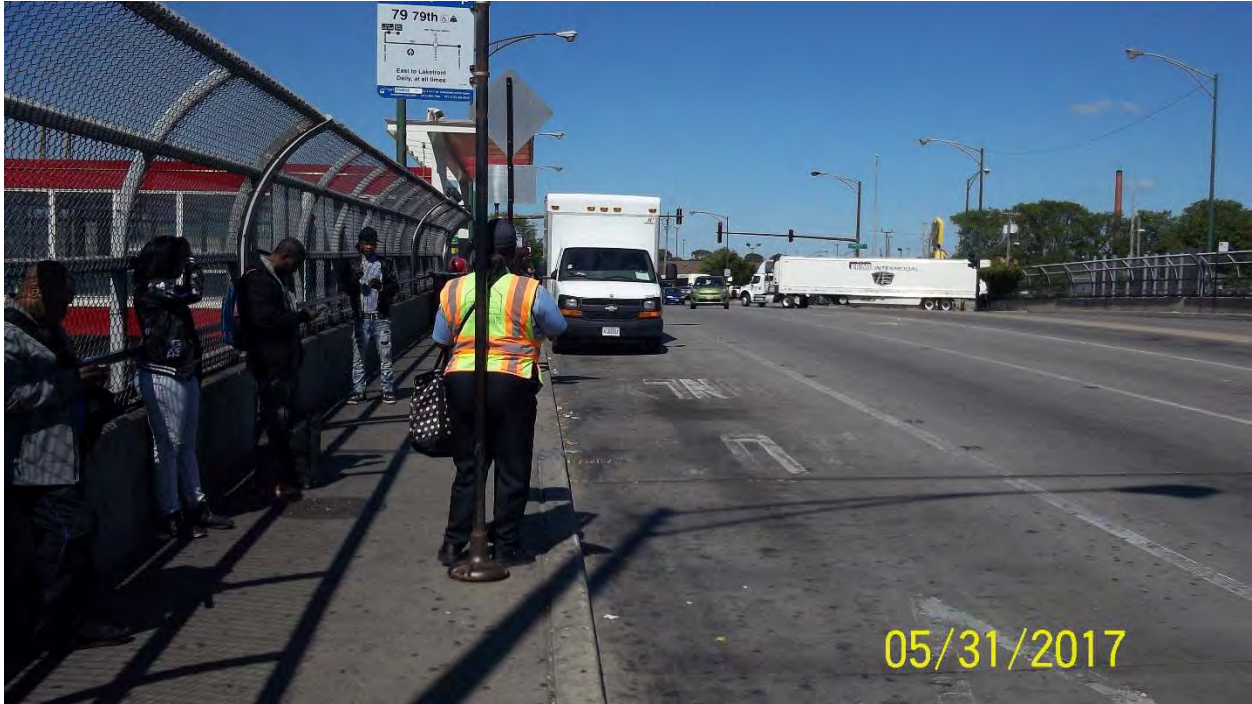




**Photo 3:** 79<sup>th</sup> St. – Looking West



**Photo 4:** State St. – Looking South



**Photo 5:** Southwest corner of 79<sup>th</sup> St. / State St. – Looking West



**Photo 6:** Southwest corner of 79<sup>th</sup> St. / State St. – Looking East



**Photo 7:** Southwest corner of 79<sup>th</sup> St. / State St. – Looking Northeast



**Photo 8:** Southwest corner of 79<sup>th</sup> St. / State St. – Looking North



**Photo 9:** Southwest corner of 79<sup>th</sup> St. / State St. – Looking South



**Photo 10:** Southeast corner of 79<sup>th</sup> St. / State St. – Looking South



**Photo 11:** Southeast corner of 79<sup>th</sup> St. / State St. – Looking North



**Photo 12:** Southeast corner of 79<sup>th</sup> St. / State St. – Looking Northwest



**Photo 13:** Southeast corner of 79<sup>th</sup> St. / State St. – Looking West



**Photo 14:** Southeast corner of 79<sup>th</sup> St. / State St. – Looking East



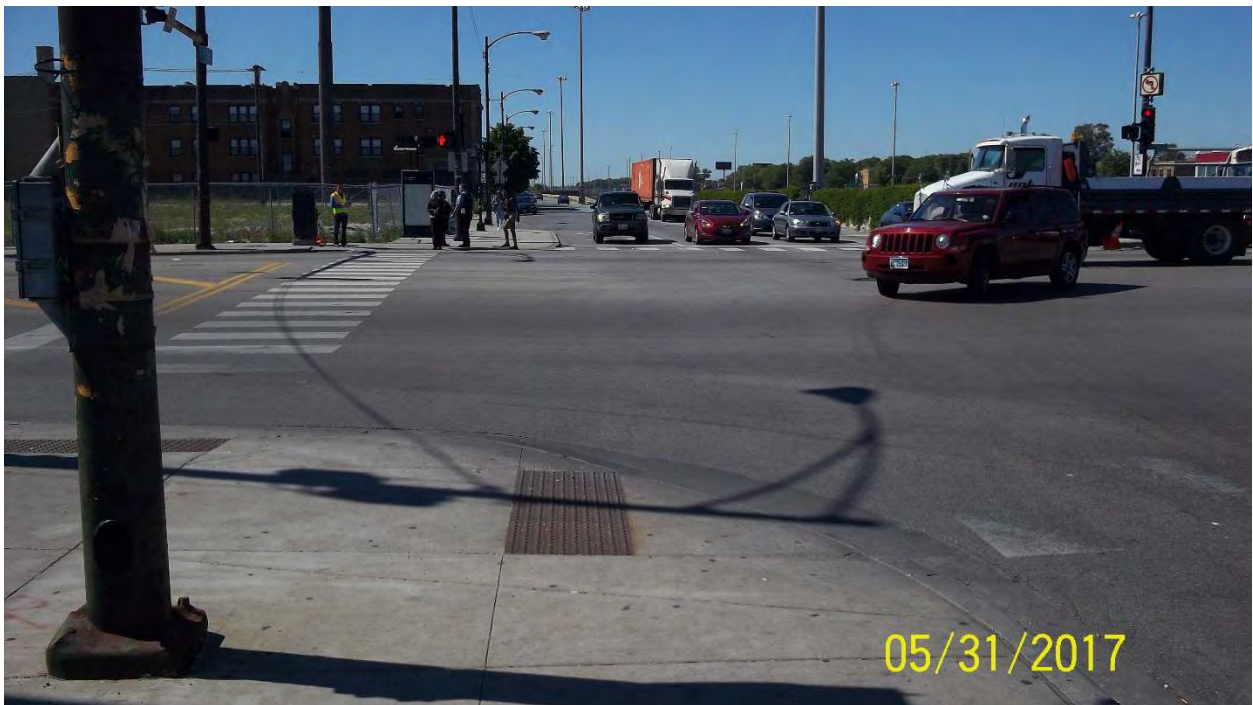
**Photo 15:** Northeast corner of 79<sup>th</sup> St. / State St. – Looking East



**Photo 16:** Northeast corner of 79<sup>th</sup> St. / State St. – Looking West



**Photo 17:** Northeast corner of 79<sup>th</sup> St. / State St. – Looking Southwest

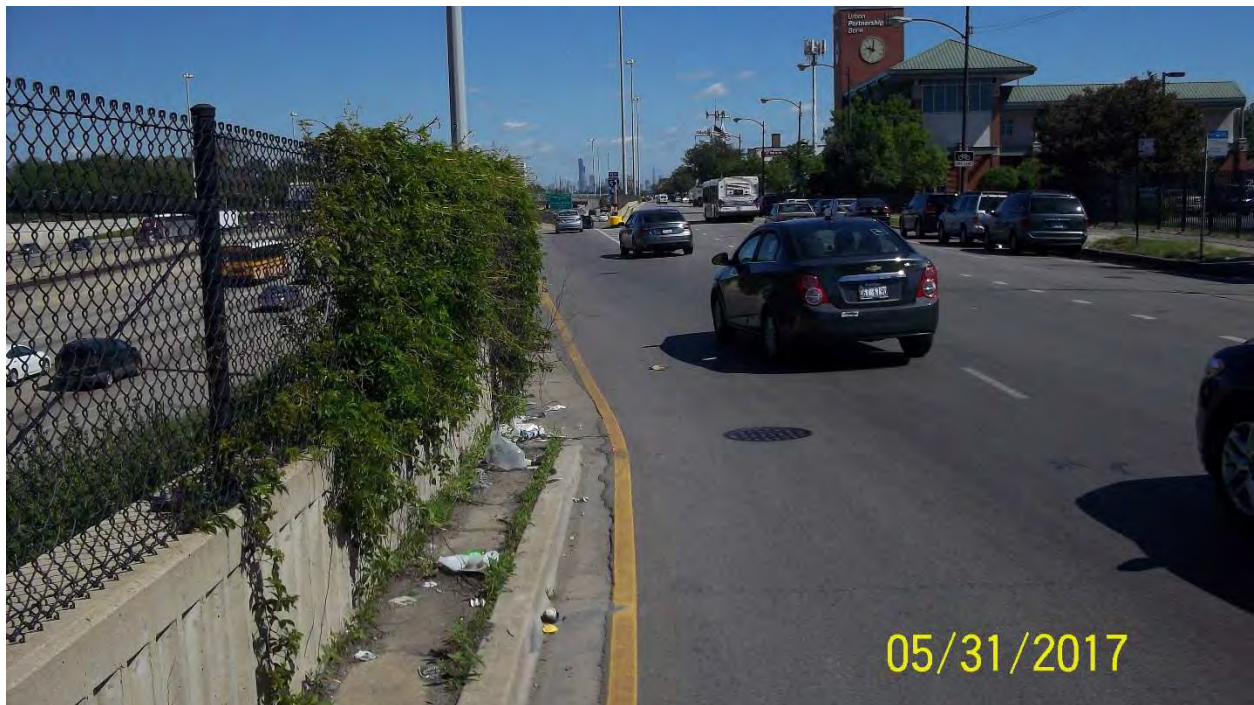


**Photo 18:** Northeast corner of 79<sup>th</sup> St. / State St. – Looking South





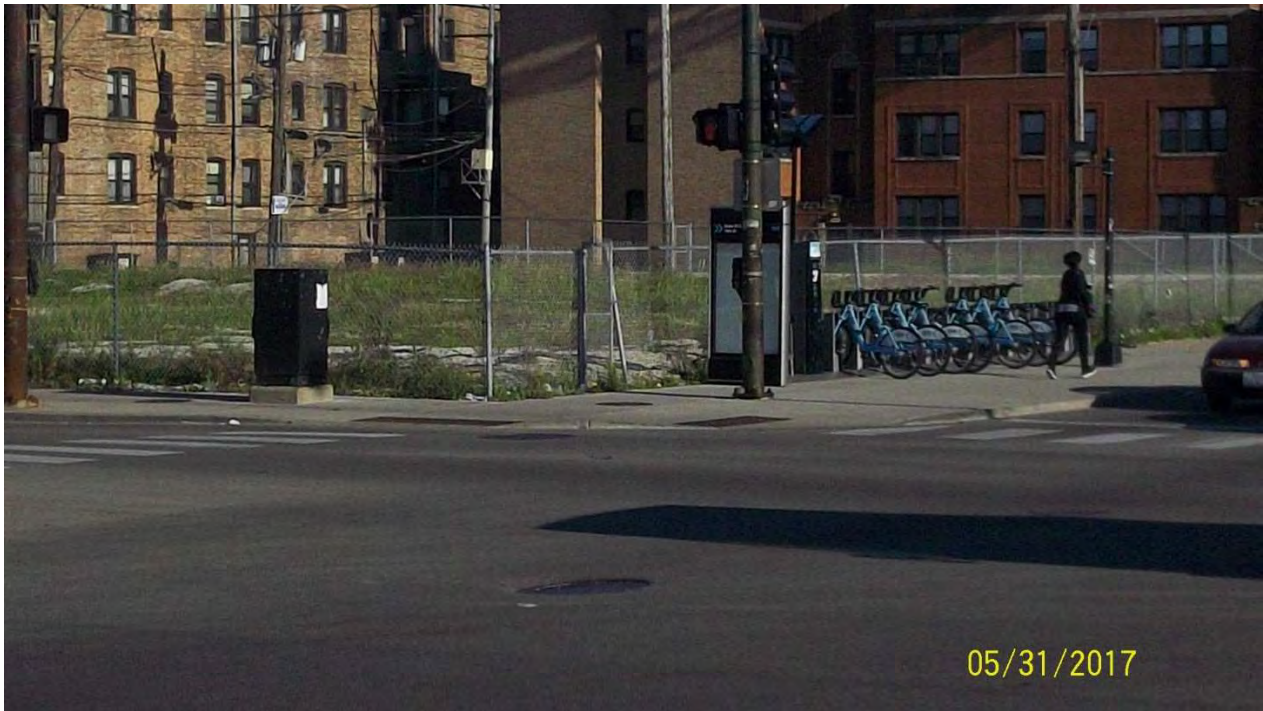
**Photo 19:** Northeast corner of 79<sup>th</sup> St. / State St. – Looking North



**Photo 20:** Northwest corner of 79<sup>th</sup> St. / State St. – Looking North



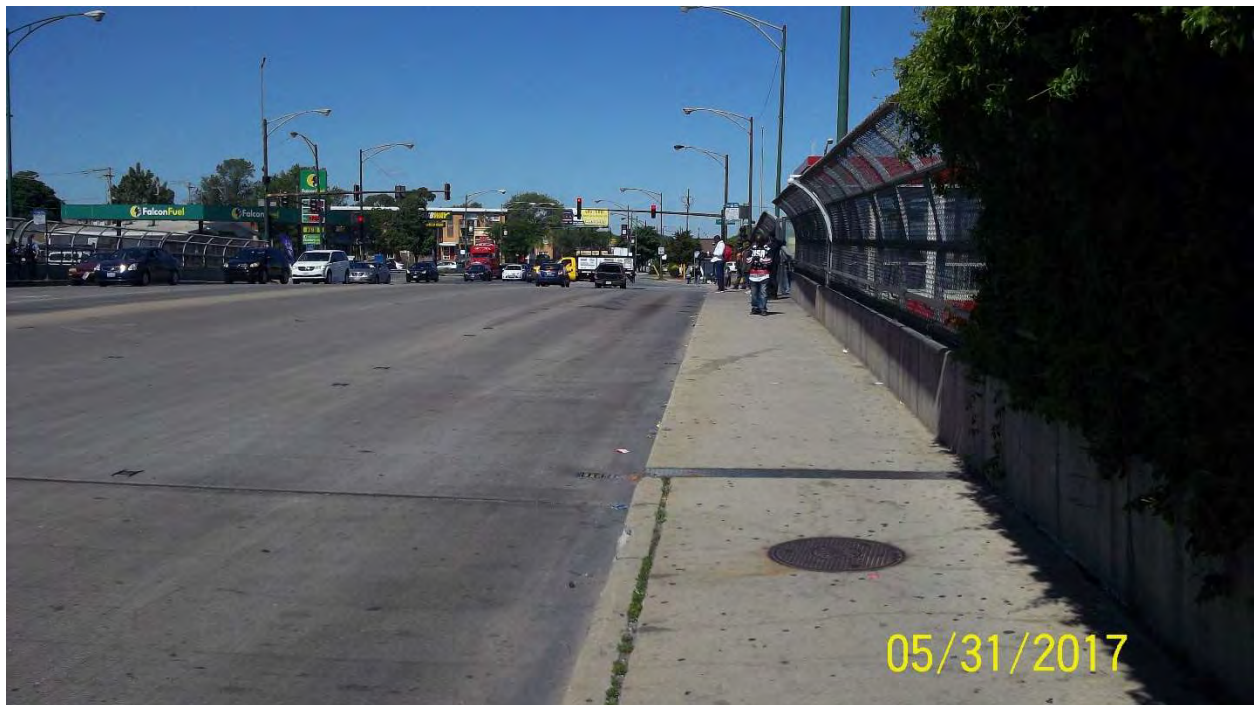
**Photo 21:** Northwest corner of 79<sup>th</sup> St. / State St. – Looking South



**Photo 22:** Northwest corner of 79<sup>th</sup> St. / State St. – Looking Southeast



**Photo 23:** Northwest corner of 79<sup>th</sup> St. / State St. – Looking East



**Photo 24:** Northwest corner of 79<sup>th</sup> St. / State St. – Looking West

# **CTA Bus Slow Zone Project 79<sup>th</sup>-Martin Luther King Photo Log**

**Prepared for:  
Chicago Transit Authority**



**June 2017**



**Photo 1: 79<sup>th</sup> St. – Looking East**



**Photo 2: Martin Luther King Drive – Looking North**



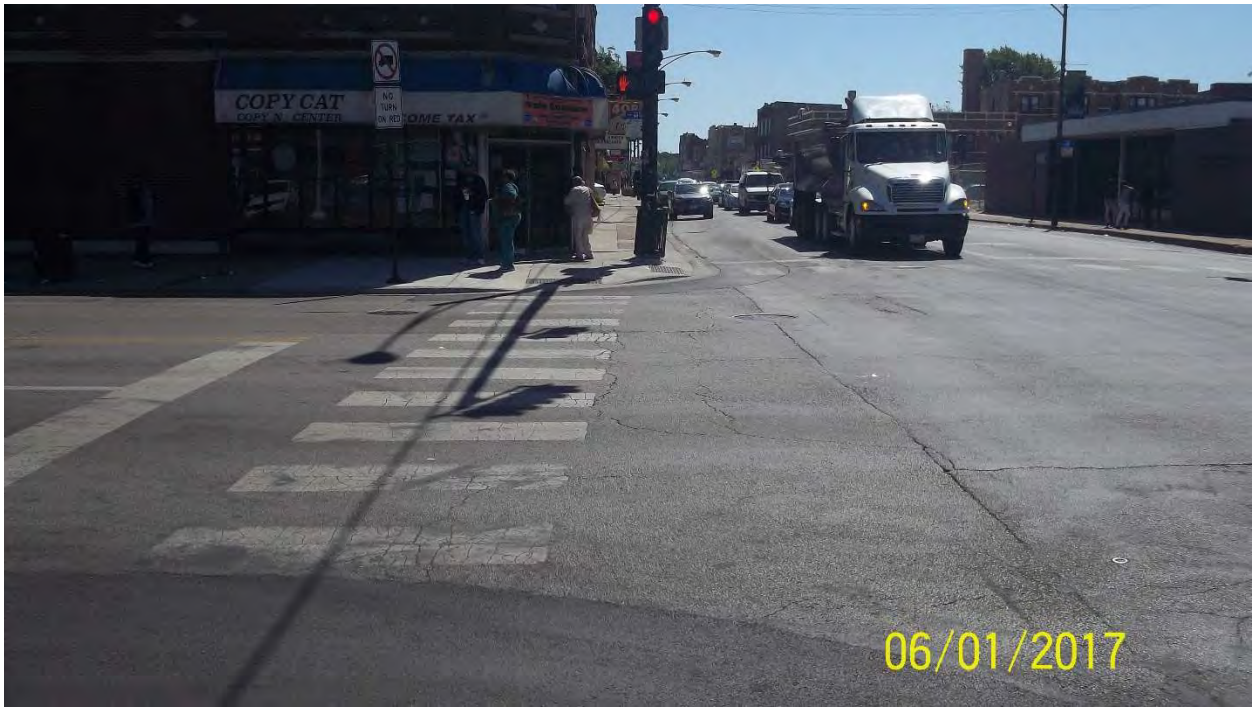
**Photo 3:** 79<sup>th</sup> St. – Looking West



**Photo 4:** Martin Luther King Drive – Looking South



**Photo 5:** Northwest corner of 79<sup>th</sup> St. / Martin Luther King Drive – Looking West



**Photo 6:** Northwest corner of 79<sup>th</sup> St. / Martin Luther King Drive – Looking East



**Photo 7:** Northwest corner of 79<sup>th</sup> St. / Martin Luther King Drive – Looking Southeast

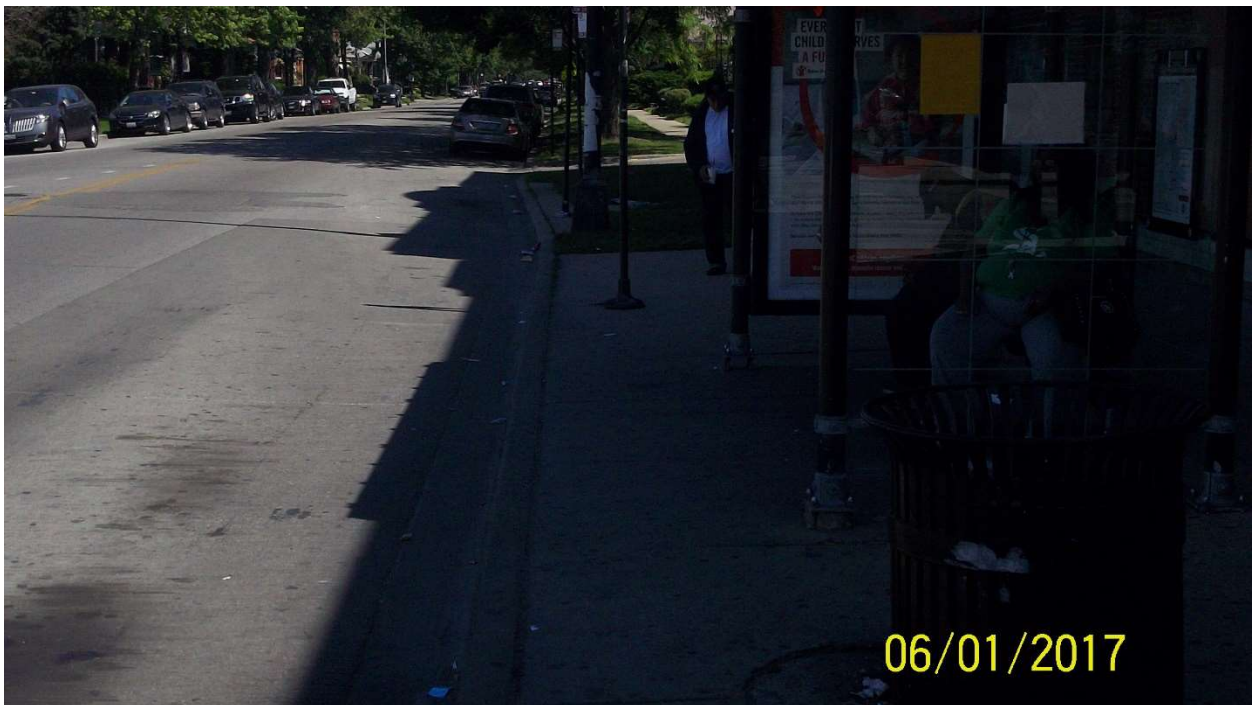


**Photo 8:** Northwest corner of 79<sup>th</sup> St. / Martin Luther King Drive – Looking South





**Photo 9:** Northwest corner of 79<sup>th</sup> St. / Martin Luther King Drive – Looking North



**Photo 10:** Northeast corner of 79<sup>th</sup> St. / Martin Luther King Drive – Looking North



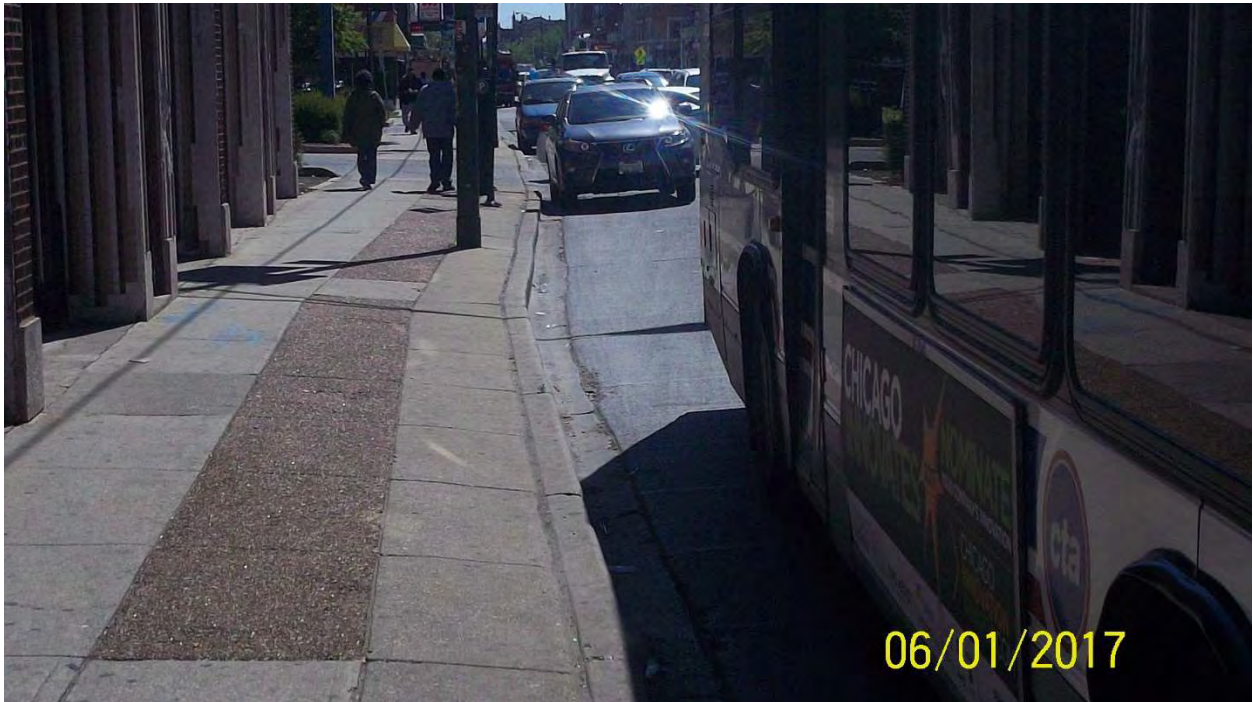
**Photo 11:** Northeast corner of 79<sup>th</sup> St. / Martin Luther King Drive – Looking South



**Photo 12:** Northeast corner of 79<sup>th</sup> St. / Martin Luther King Drive – Looking Southwest



**Photo 13:** Northeast corner of 79<sup>th</sup> St. / Martin Luther King Drive – Looking West



**Photo 14:** Northeast corner of 79<sup>th</sup> St. / Martin Luther King Drive – Looking East



**Photo 15:** Southeast corner of 79<sup>th</sup> St. / Martin Luther King Drive – Looking East



**Photo 16:** Southeast corner of 79<sup>th</sup> St. / Martin Luther King Drive – Looking West



**Photo 17:** Southeast corner of 79<sup>th</sup> St. / Martin Luther King Drive – Looking Northwest



**Photo 18:** Southeast corner of 79<sup>th</sup> St. / Martin Luther King Drive – Looking North



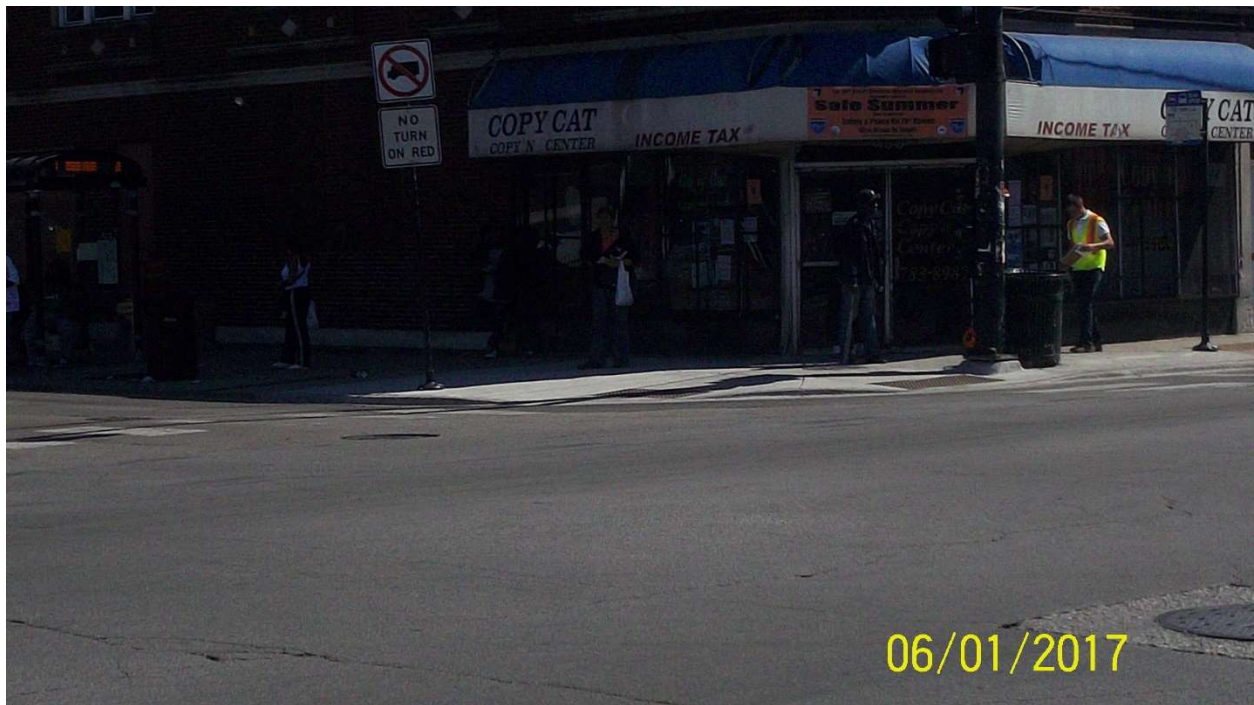
**Photo 19:** Southeast corner of 79<sup>th</sup> St. / Martin Luther King Drive – Looking South



**Photo 20:** Southwest corner of 79<sup>th</sup> St. / Martin Luther King Drive – Looking South



**Photo 21:** Southwest corner of 79<sup>th</sup> St. / Martin Luther King Drive – Looking North



**Photo 22:** Southwest corner of 79<sup>th</sup> St. / Martin Luther King Drive – Looking Northeast



**Photo 23:** Southwest corner of 79<sup>th</sup> St. / Martin Luther King Drive – Looking East



**Photo 24:** Southwest corner of 79<sup>th</sup> St. / Martin Luther King Drive – Looking West



# **CTA Bus Slow Zone Project 79<sup>th</sup>-Stony Island Photo Log**

**Prepared for:  
Chicago Transit Authority**



**June 2017**



Photo 1: 79<sup>th</sup> St. – Looking West



Photo 2: South Chicago Ave. – Looking Northwest



**Photo 3:** Stony Island – Looking North 1



**Photo 4:** Stony Island – Looking North 2



**Photo 5:** Stony Island – Looking North 3



**Photo 6:** 79<sup>th</sup> St. – Looking East



**Photo 7: South Chicago Ave. – Looking Southeast**



**Photo 8: Stony Island – Looking South 1**



**Photo 9:** Stony Island – Looking South 2



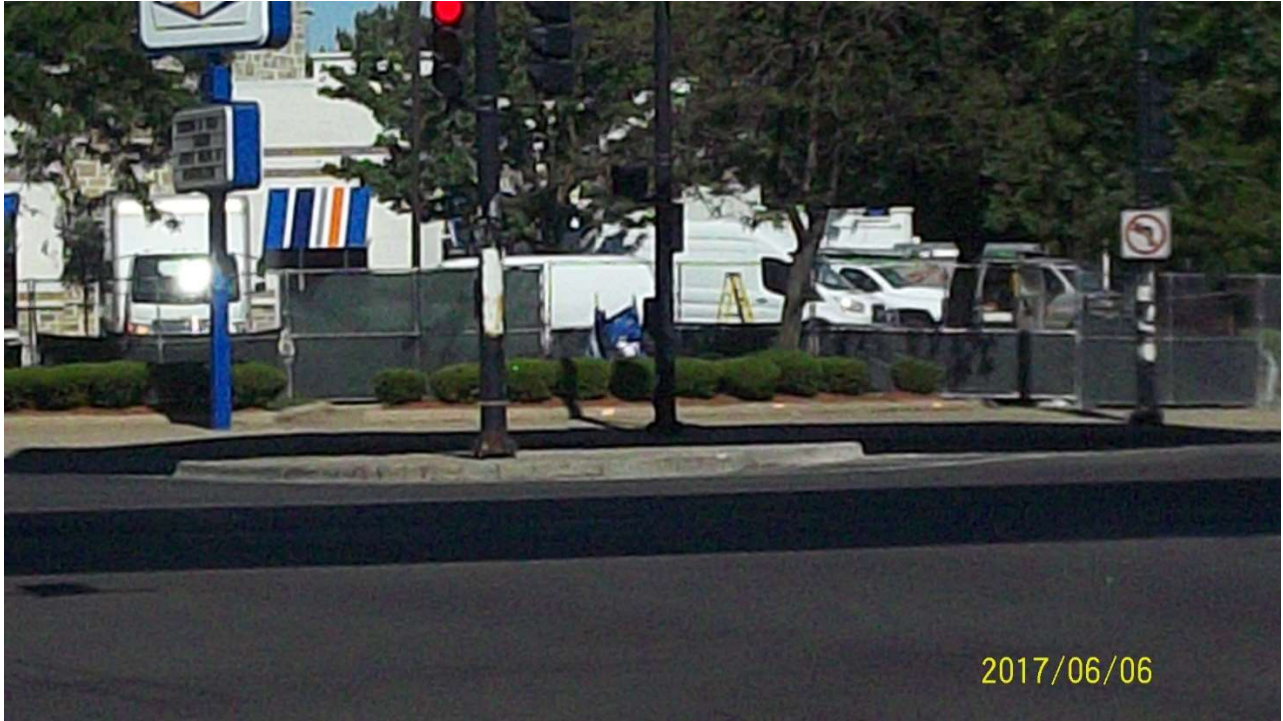
**Photo 10:** Stony Island – Looking South 3



**Photo 11:** Southeast corner of 79<sup>th</sup> St. / South Chicago Ave. – Looking Southeast



**Photo 12:** Southeast corner of 79<sup>th</sup> St. / South Chicago Ave. – Looking Northwest



**Photo 13:** Southeast corner of 79<sup>th</sup> St. / South Chicago Ave. – Looking West



**Photo 14:** Southeast corner of 79<sup>th</sup> St. / South Chicago Ave. – Looking Southwest





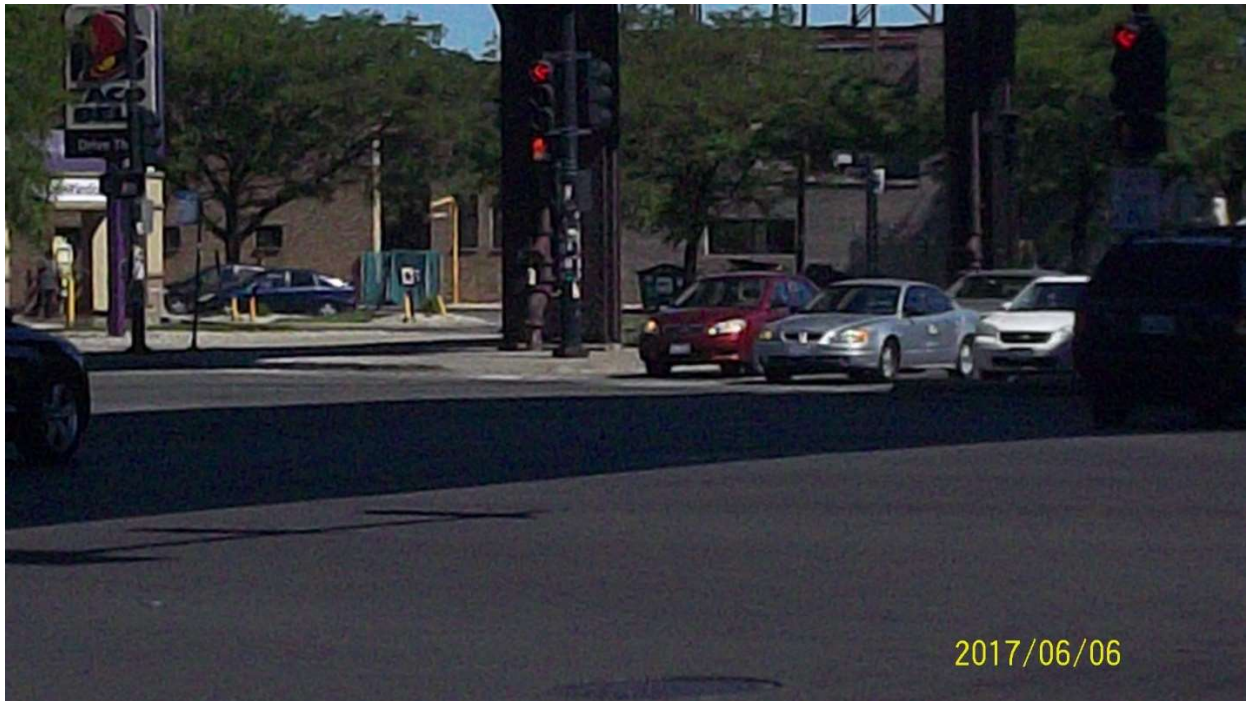
**Photo 15:** Southeast corner of 79<sup>th</sup> St. / South Chicago Ave. – Looking East



**Photo 16:** Southeast corner of Stony Island / South Chicago Ave. – Looking Southeast



**Photo 17:** Southeast corner of Stony Island / South Chicago Ave. – Looking West



**Photo 18:** Southeast corner of Stony Island / South Chicago Ave. – Looking Northwest



**Photo 19:** Southeast corner of Stony Island / South Chicago Ave. – Looking Northeast



**Photo 20:** Southeast corner of Stony Island / South Chicago Ave. – Looking South



**Photo 21:** Southwest corner of Stony Island / 79<sup>th</sup> St. – Looking South



**Photo 22:** Southwest corner of Stony Island / 79<sup>th</sup> St. – Looking North



**Photo 23:** Southwest corner of Stony Island / 79<sup>th</sup> St. – Looking Northeast



**Photo 24:** Southwest corner of Stony Island / 79<sup>th</sup> St. – Looking East



**Photo 25:** Southwest corner of Stony Island / 79<sup>th</sup> St. – Looking West



**Photo 26:** Northwest corner of Stony Island / South Chicago Ave. / 79<sup>th</sup> St. – Looking West



Photo 27: Northwest corner of Stony Island / South Chicago Ave. / 79<sup>th</sup> St. – Looking Southeast



Photo 28: Northwest corner of Stony Island / South Chicago Ave. / 79<sup>th</sup> St. – Looking South



**Photo 29:** Northwest corner of Stony Island / South Chicago Ave. / 79<sup>th</sup> St. – Looking North

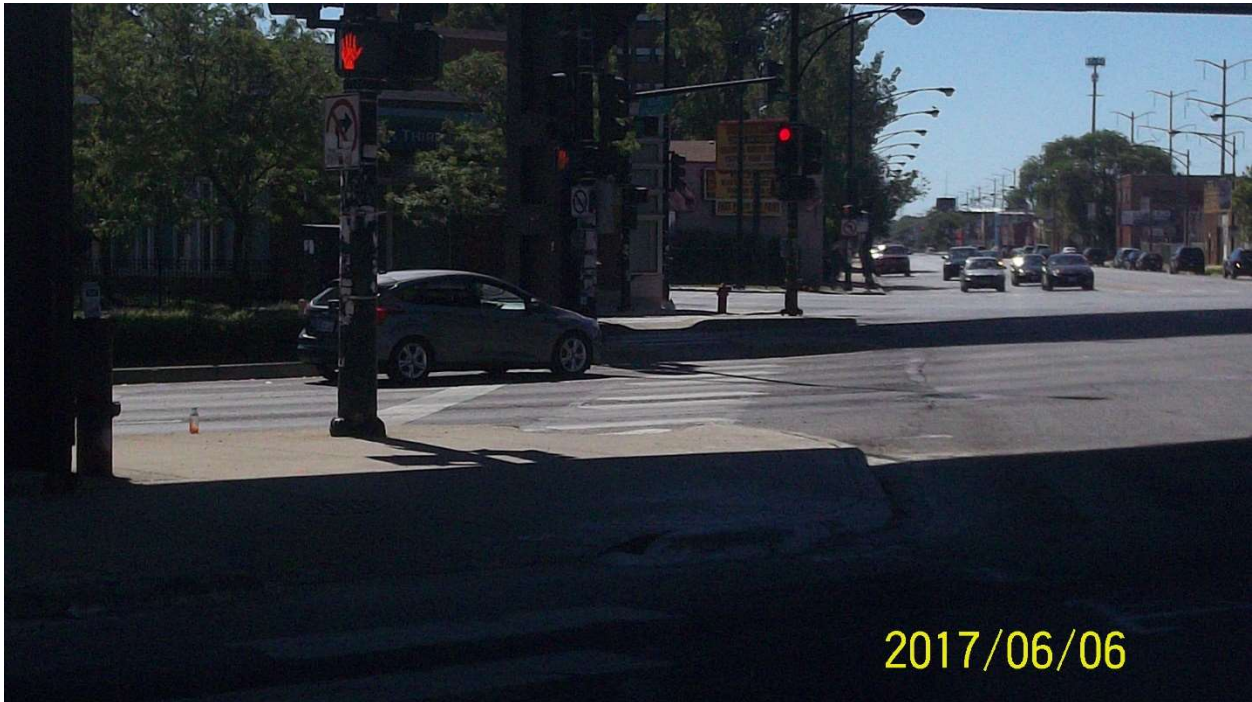


**Photo 30:** Northwest corner of Stony Island / South Chicago Ave. / 79<sup>th</sup> St. – Looking Northwest

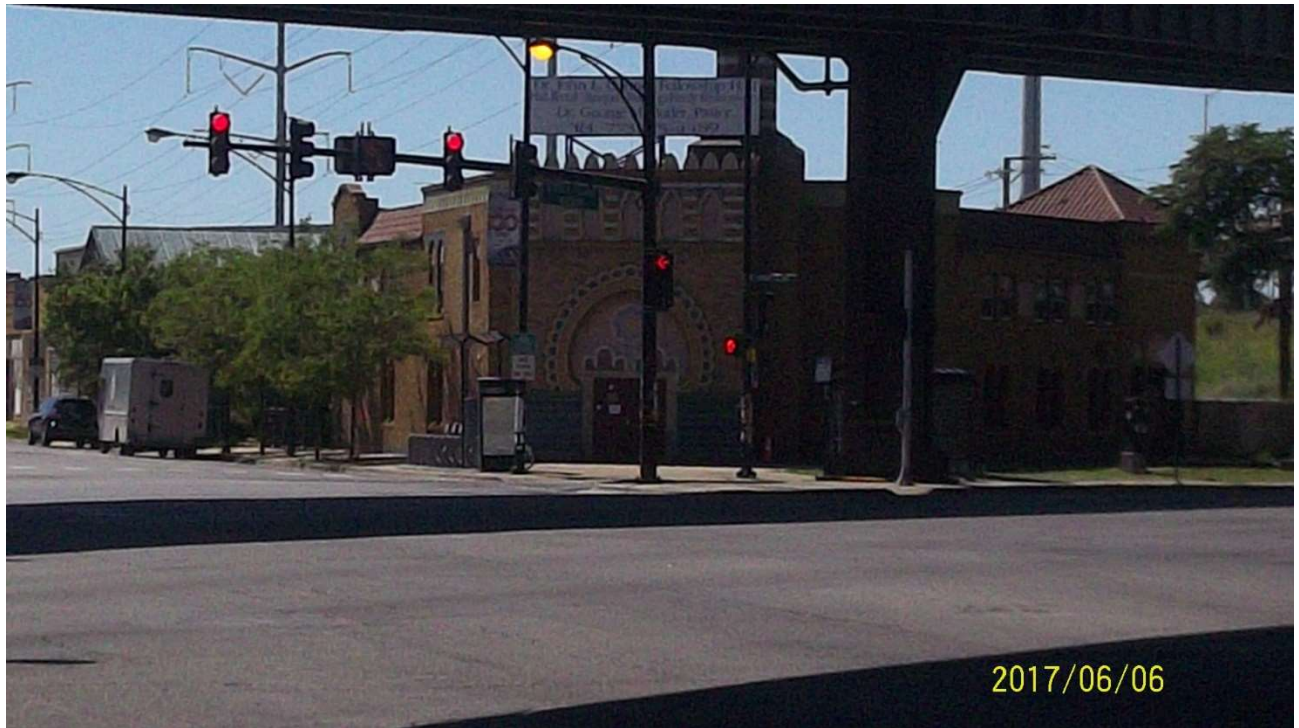




**Photo 31:** Northwest corner of Stony Island / South Chicago Ave. – Looking Northeast



**Photo 32:** Northwest corner of Stony Island / South Chicago Ave. – Looking Southeast 1



**Photo 33:** Northwest corner of Stony Island / South Chicago Ave. – Looking Southeast 2



**Photo 34:** Northwest corner of Stony Island / South Chicago Ave. – Looking South



**Photo 35:** Northwest corner of Stony Island / South Chicago Ave. – Looking North



**Photo 36:** Northeast corner of 79<sup>th</sup> St. / South Chicago Ave. – Looking North



**Photo 37:** Northeast corner of 79<sup>th</sup> St. / South Chicago Ave. – Looking Southeast



**Photo 38:** Northeast corner of 79<sup>th</sup> St. / South Chicago Ave. – Looking Southwest

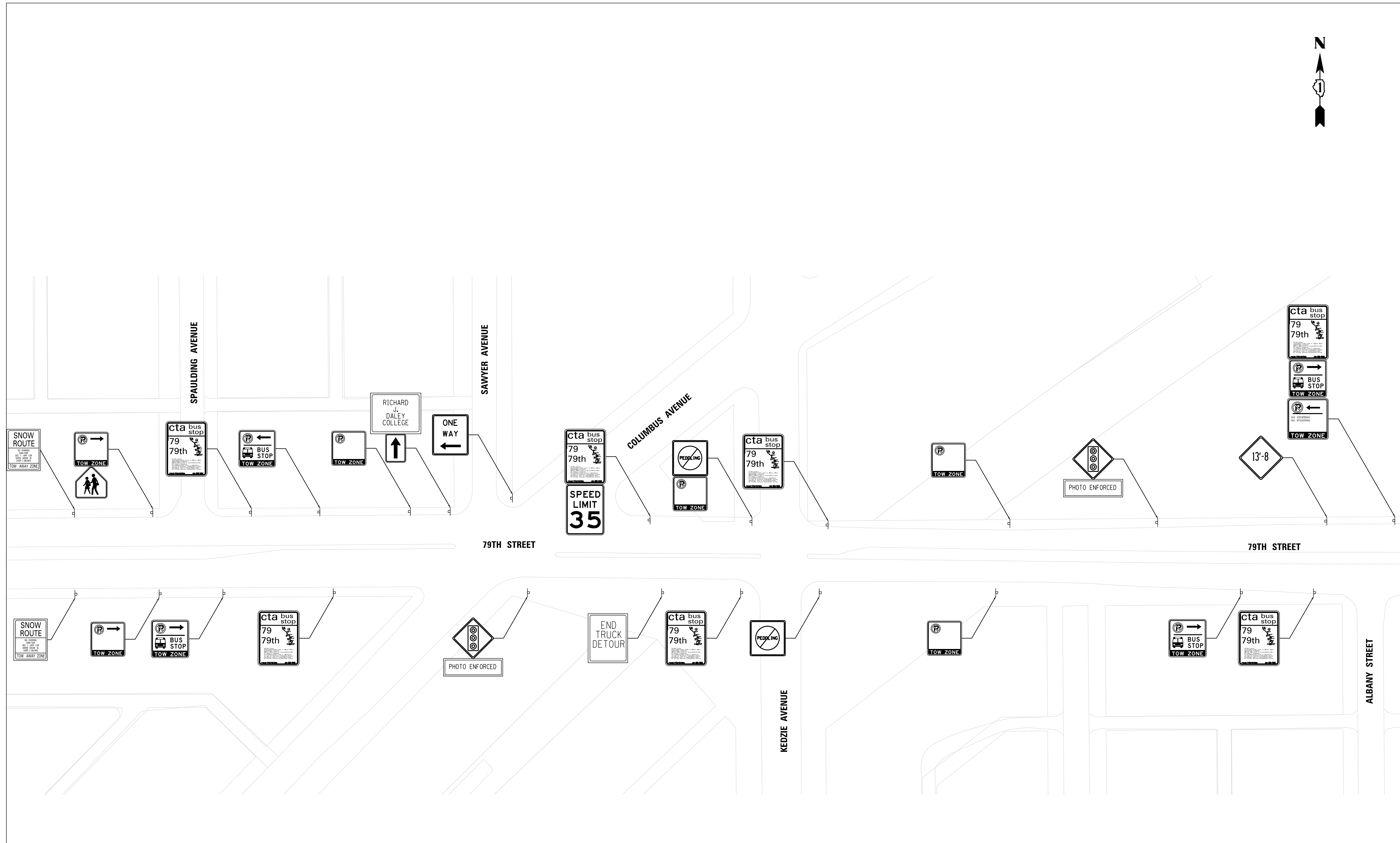


**Photo 39:** Northeast corner of 79<sup>th</sup> St. / South Chicago Ave. – Looking Northwest

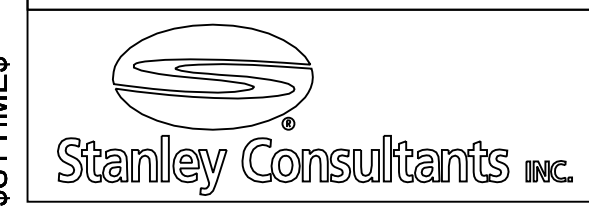


**Photo 40:** Northeast corner of 79<sup>th</sup> St. / South Chicago Ave. – Looking East

## **APPENDIX D – Curbside Signs**



**EJM ENGINEERING, INC.**  
 45 South Wells Street Suite 1000  
 Chicago, Illinois 60607



USER NAME = \$USER\$	DESIGNED - RD	REVISED -
	CHECKED - JAW	REVISED -
PLOT SCALE = \$SCALE\$	DRAWN - RD	REVISED -
PLOT DATE = \$DATE\$	CHECKED - JAW	REVISED -

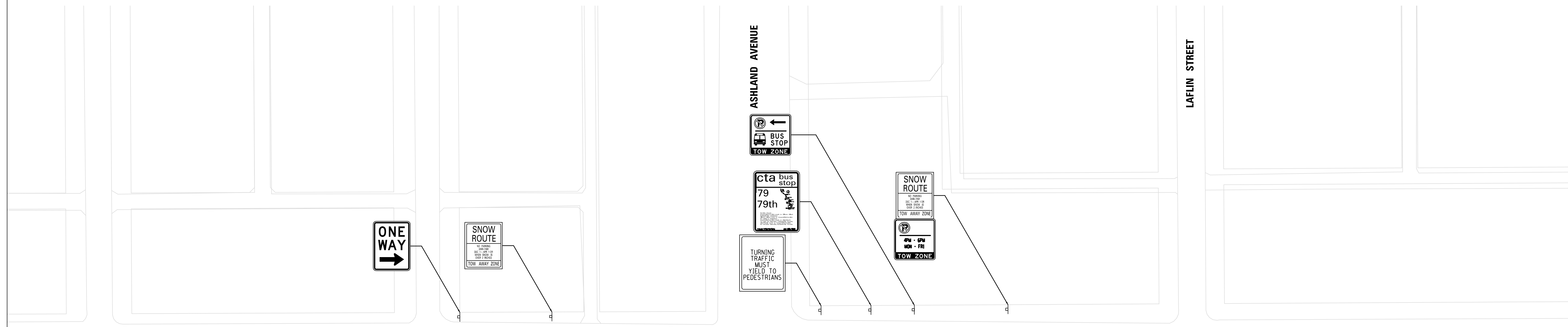
**CITY OF CHICAGO**  
 DEPARTMENT OF TRANSPORTATION  
 DIVISION OF ENGINEERING

**TRANSPORTATION ENGINEERING SERVICES  
 FOR CTA BUS SLOW ZONES**

**CURBSIDE SIGNAGE FOR 79TH STREET -  
 COLUMBUS AVENUE / KEDZIE AVENUE**

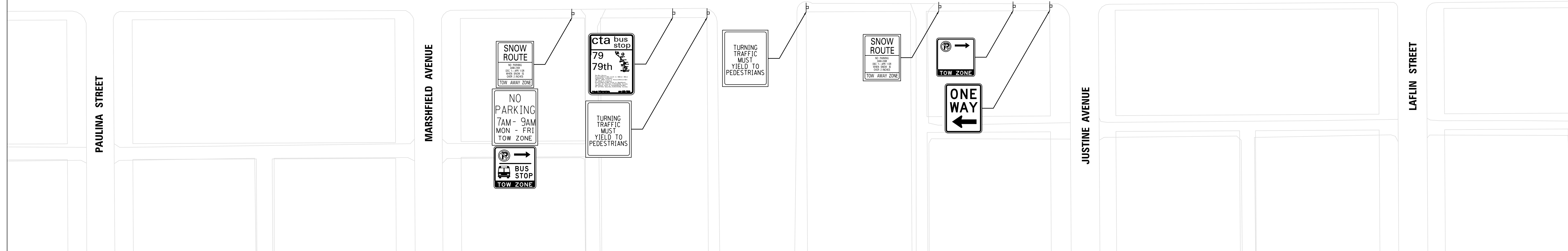
F.A.P. RTE.	SECTION	COUNTY	SHEET NO.
XXXX	XX-XXXX-XX-XX	COOK	
CDOT PROJECT NO. B-6-227			OF \$TOTAL

\$\$\$DGN\$\$\$  
 \$\$\$SYTIME\$



79TH STREET

79TH STREET



PAULINA STREET

MARSHFIELD AVENUE

JUSTINE AVENUE

LAFLIN STREET

**EJM** E J M ENGINEERING, I N C.  
45 South Wells Street Suite 1000  
Chicago, Illinois 60607



USER NAME = \$USER\$	DESIGNED - RD	REVISED -
	CHECKED - JAW	REVISED -
PLOT SCALE = \$SCALE\$	DRAWN - RD	REVISED -
PLOT DATE = \$DATE\$	CHECKED - JAW	REVISED -

**CITY OF CHICAGO**  
DEPARTMENT OF TRANSPORTATION  
DIVISION OF ENGINEERING

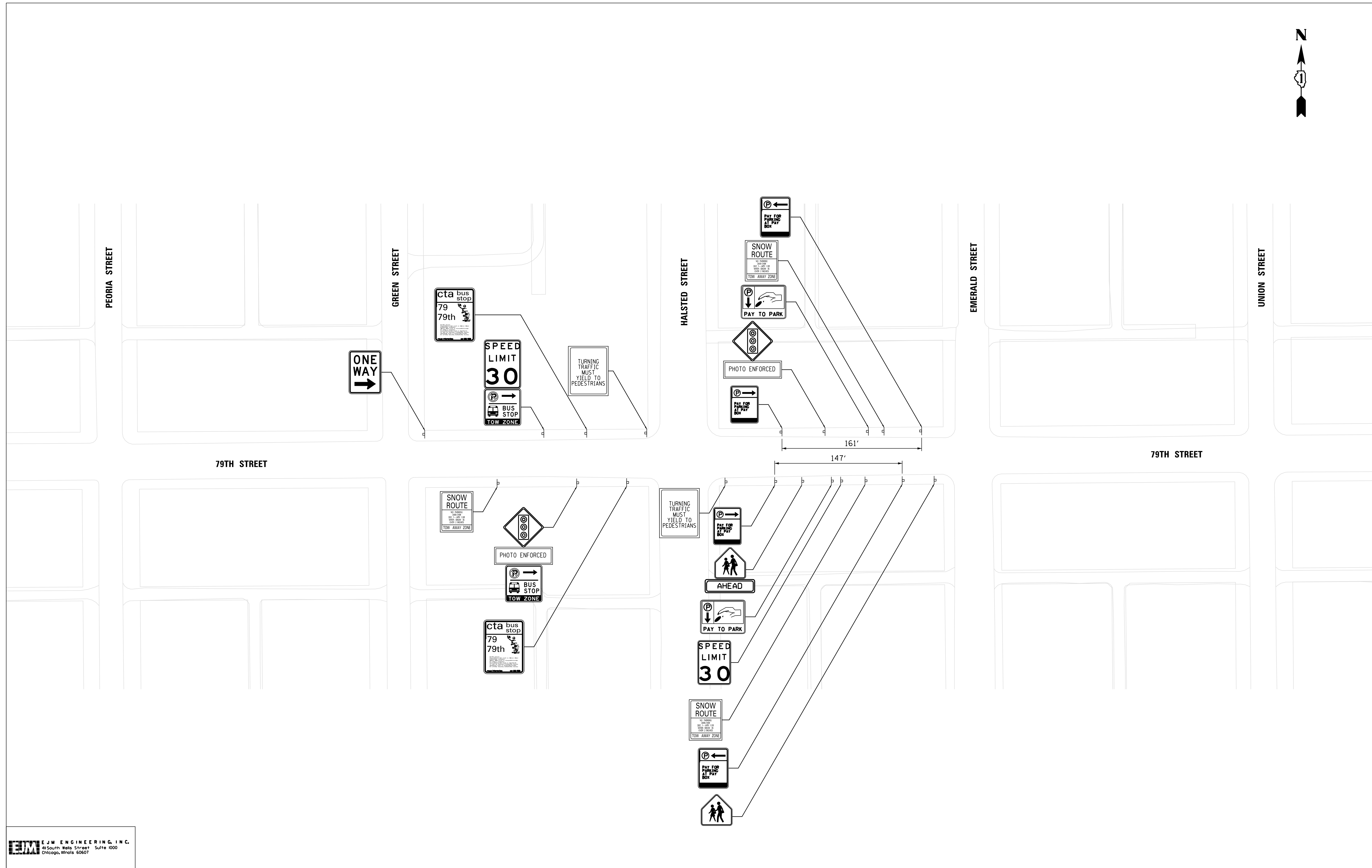
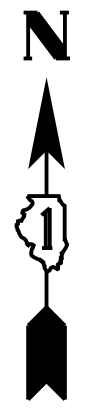
TRANSPORTATION ENGINEERING SERVICES  
FOR CTA BUS SLOW ZONES

CURBSIDE SIGNAGE FOR 79TH STREET -  
ASHLAND AVENUE

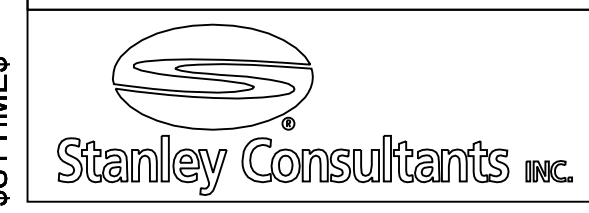
F.A.P. RTE.	SECTION	COUNTY	SHEET NO.
XXXX	XX-XXXX-XX-XX	COOK	
CDOT PROJECT NO. B-6-227			OF \$TOTAL

\$\$\$DGN\$\$\$  
\$\$SYTIME\$





**EJM** EJM ENGINEERING, INC.  
45 South Wells Street Suite 1000  
Chicago, Illinois 60607



USER NAME = \$USER\$	DESIGNED - RD	REVISED -
	CHECKED - JAW	REVISED -
PLOT SCALE = \$SCALE\$	DRAWN - RD	REVISED -
PLOT DATE = \$DATE\$	CHECKED - JAW	REVISED -

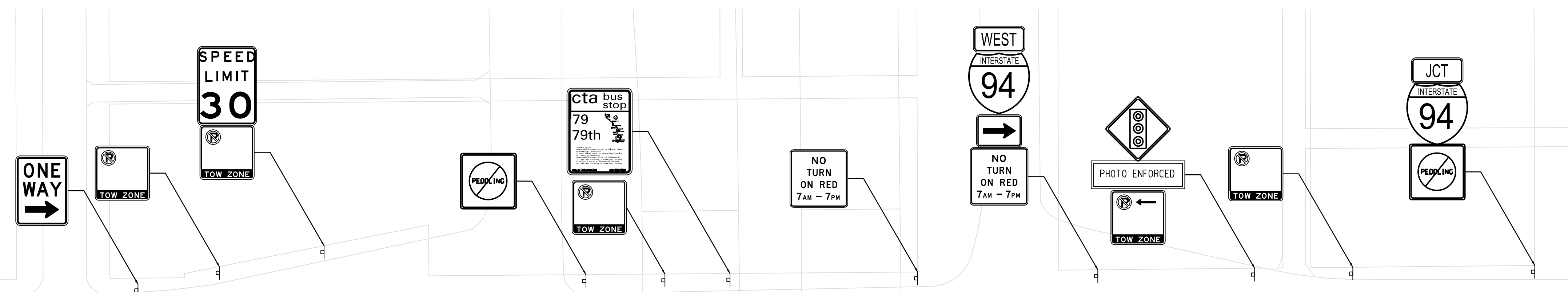
**CITY OF CHICAGO**  
DEPARTMENT OF TRANSPORTATION  
DIVISION OF ENGINEERING

TRANSPORTATION ENGINEERING SERVICES  
FOR CTA BUS SLOW ZONES

CURBSIDE SIGNAGE FOR 79TH STREET -  
HALSTED STREET

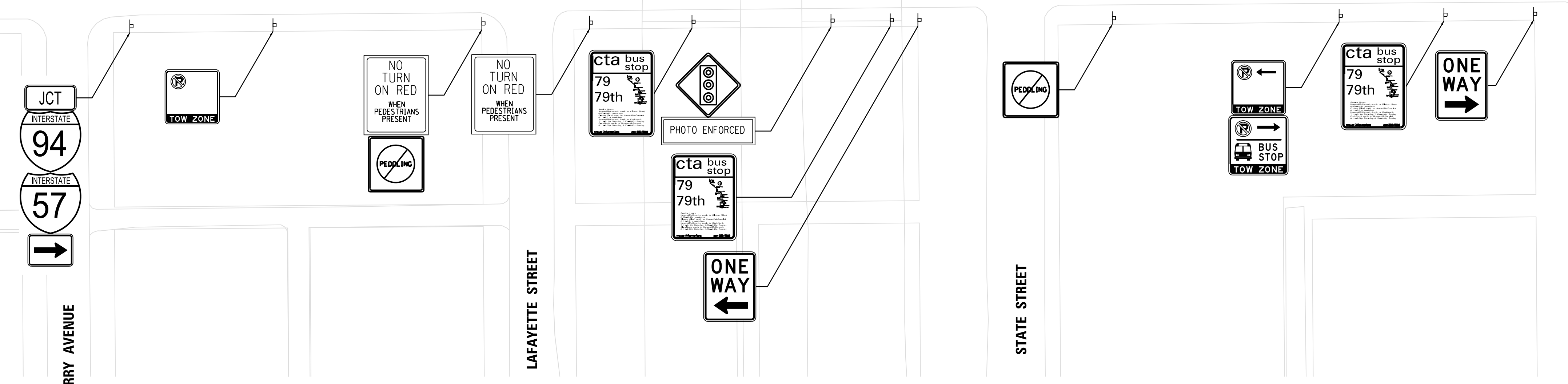
F.A.P. RTE.	SECTION	COUNTY	SHEET NO.
XXXX	XX-XXXX-XX-XX	COOK	
CDOT PROJECT NO. B-6-227			OF \$TOTAL

\$\$\$DGN\$\$\$  
\$\$SYTIME\$



79TH STREET

79TH STREET



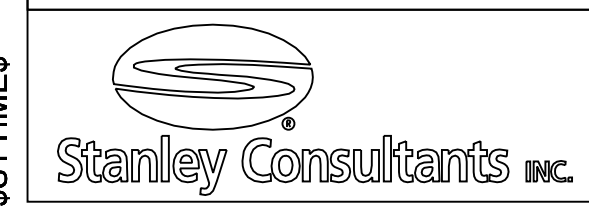
PERRY AVENUE

LAFAYETTE STREET

STATE STREET

WABASH AVENUE

**EJM** E J M ENGINEERING, INC.  
45 South Wells Street Suite 1000  
Chicago, Illinois 60607



USER NAME = \$USER\$	DESIGNED - RD	REVISED -
	CHECKED - JAW	REVISED -
PLOT SCALE = \$SCALE\$	DRAWN - RD	REVISED -
PLOT DATE = \$DATE\$	CHECKED - JAW	REVISED -

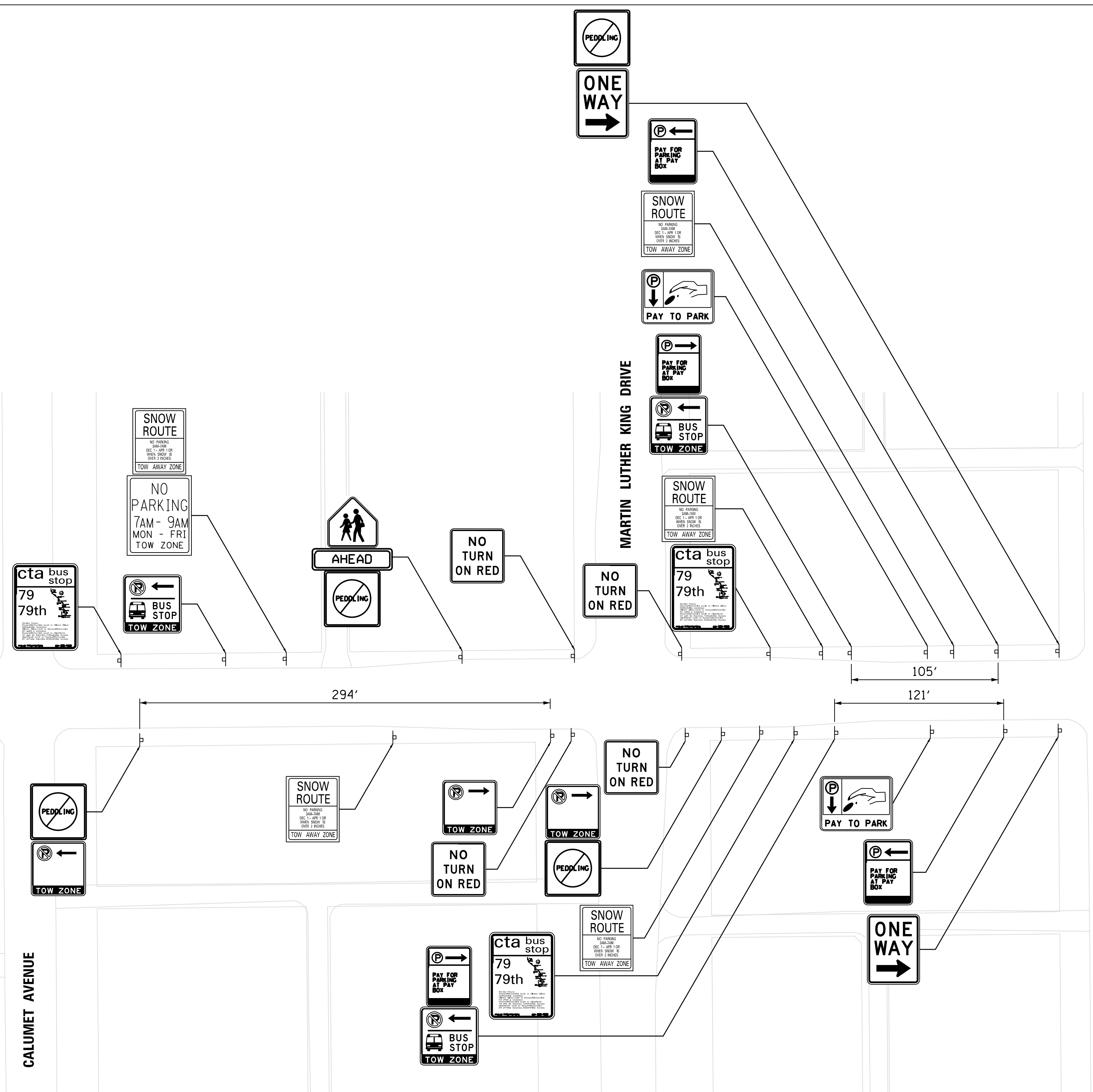
**CITY OF CHICAGO**  
DEPARTMENT OF TRANSPORTATION  
DIVISION OF ENGINEERING

TRANSPORTATION ENGINEERING SERVICES  
FOR CTA BUS SLOW ZONES

CURBSIDE SIGNAGE FOR 79TH STREET -  
LAFAYETTE STREET AND STATE STREET

F.A.P. RTE.	SECTION	COUNTY	SHEET NO.
XXXX	XX-XXXX-XX-XX	COOK	
CDOT PROJECT NO. B-6-227			OF \$TOTAL

\$\$\$DGN\$\$\$  
\$\$SYTIME\$



**EJM** EJM ENGINEERING, INC.  
45 South Wells Street Suite 1000  
Chicago, Illinois 60607



USER NAME = \$USER\$	DESIGNED - RD	REVISED -
	CHECKED - JAW	REVISED -
PLOT SCALE = \$SCALE\$	DRAWN - RD	REVISED -
PLOT DATE = \$DATE\$	CHECKED - JAW	REVISED -

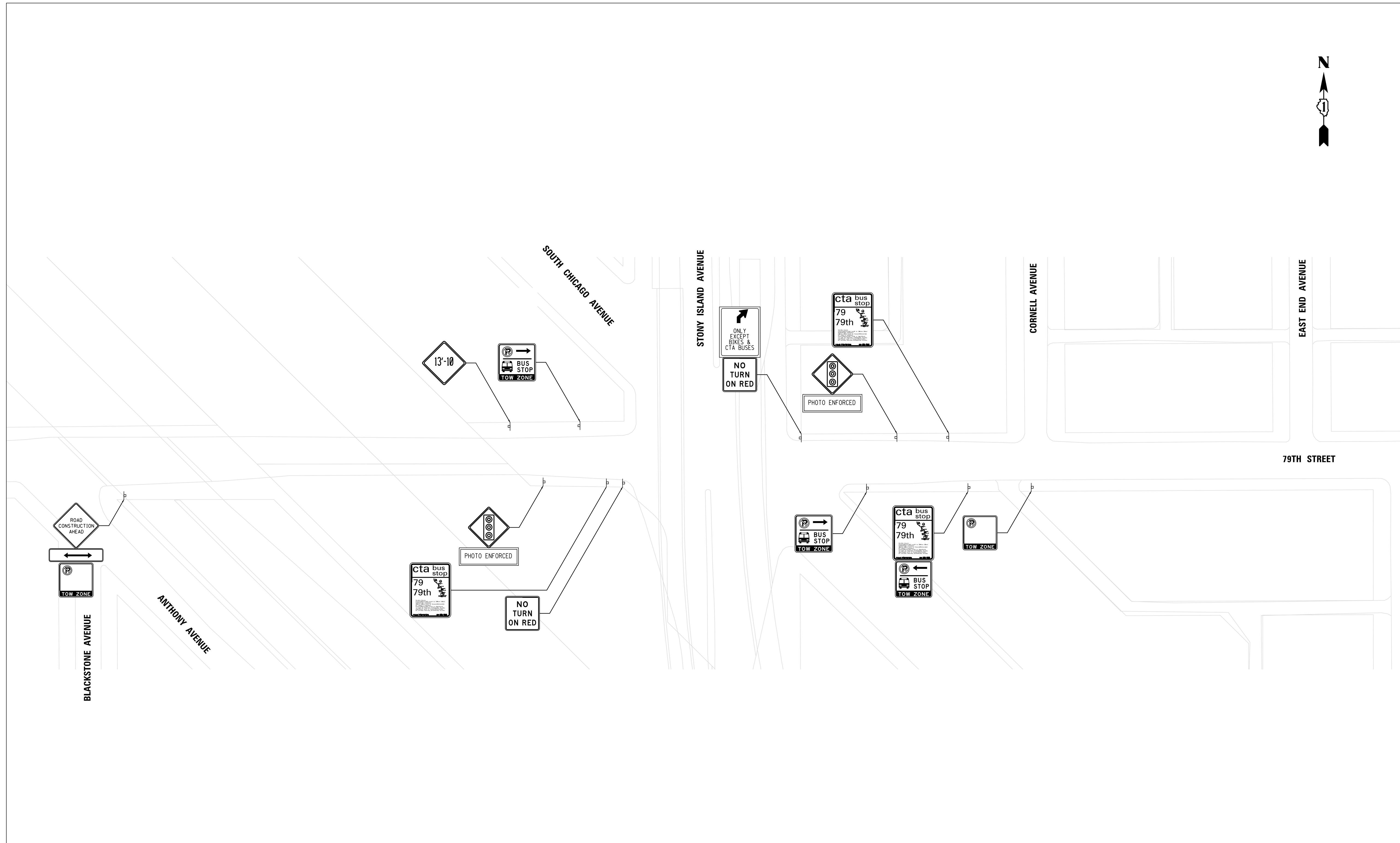
**CITY OF CHICAGO**  
DEPARTMENT OF TRANSPORTATION  
DIVISION OF ENGINEERING

TRANSPORTATION ENGINEERING SERVICES  
FOR CTA BUS SLOW ZONES

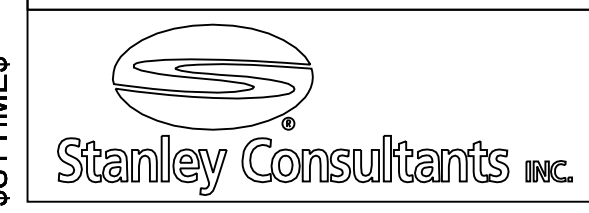
CURBSIDE SIGNAGE FOR 79TH STREET -  
MARTIN LUTHER KING DRIVE

F.A.P. RTE.	SECTION	COUNTY	SHEET NO.
XXXX	XX-XXXX-XX-XX	COOK	
CDOT PROJECT NO. B-6-227			OF \$TOTAL

\$\$\$DGN\$\$\$  
\$\$SYTIME\$



**EJM** E J M ENGINEERING, I N C.  
 45 South Wells Street Suite 1000  
 Chicago, Illinois 60607



USER NAME = \$USER\$	DESIGNED - RD	REVISED -
	CHECKED - JAW	REVISED -
PLOT SCALE = \$SCALE\$	DRAWN - RD	REVISED -
PLOT DATE = \$DATE\$	CHECKED - JAW	REVISED -

**CITY OF CHICAGO**  
 DEPARTMENT OF TRANSPORTATION  
 DIVISION OF ENGINEERING

TRANSPORTATION ENGINEERING SERVICES  
 FOR CTA BUS SLOW ZONES

**CURBSIDE SIGNAGE FOR 79TH STREET -  
 STONY ISLAND AVE / SOUTH CHICAGO AVE**

F.A.P. RTE.	SECTION	COUNTY	SHEET NO.
XXXX	XX-XXXX-XX-XX	COOK	
CDOT PROJECT NO. B-6-227			OF \$TOTAL

\$\$\$DGN\$\$  
 \$\$\$TIMES

## **APPENDIX E – Alternative Analysis**

Slow Zone	Direction	Bus Stops within Slow Zone	Stop Location	Ridership Boarding AM (PM) Alighting AM (PM)	Crossing Bus Route	Description of Issues/ Limitations	Potential Solution(s)	Benefit(s)	Potential Impacts(s)	Feasibility	Recommendation	Consideration	
Kedzie Ave/ Columbus Ave	Eastbound	COLUMBUS	Nearside	N/A	-	Congested Conditions Columbus Ave and Kedzie Ave Signals are in close proximity	Update signal timing and coordination between all 3 signals.	Potential for optimizing capacity and reducing delay.	Possible increase delay in other directions.	Yes	Yes	-	
							Implement WB bus lane at Columbus Ave and Kedzie Ave.		Possible increase delay for right turning vehicles.	Yes	Yes	-	
		KEDZIE	Nearside	39 (34) 5 (14)			Implement EB combined bus and right turn lane at Columbus Ave.	Improves bus access to stop and reduces bus delay by allowing bus to skip queue.	May require updated controller, addition of queue jump signal and possible requirement for intersection modernization.	Yes	Yes	-	
							Implement EB bus lane and combined bus and right turn lane at Kedzie Ave.			Yes	Yes	Viaduct constrains roadway; prevents consideration of bus only lane	
	Westbound	KEDZIE	Nearside	N/A	52A	WB bus only lane, restrict right turns onto Columbus Ave, provide advanced signing for access to northeast bound Columbus Ave.	Increases bus reliability and speed through slow zone. Allows bus to load outside of through lanes and advance through the intersection without merging back into through traffic.	Reduced lane width to 10 feet.	Yes	Yes	41-foot of existing pavement, left turn and two lanes currently, could support 3 10-foot lanes.		
							Connection to metra stop, potential near level boarding location	Near level boarding for EB transit users.	Expedites loading and alighting times for passengers, reduces bus dwell times.	Street lighting and utilities.	Yes	No	Ridership numbers don't justify adding near level boarding.
								Two closely spaced bus stops.	Consolidate WB bus stops and eliminate bus stops at Kedzie Ave and Columbus Ave.	Fewer bus stop reduces delay and results in better access to NB Kedzie Ave stop.	None	Yes	Yes
		Consolidate EB bus stops, eliminate nearside bus stop at Columbus Ave.	Fewer bus stop reduces delay.	None		Yes	Yes		Consolidate and place stop midblock.				
		COLUMBUS	Nearside	11 (4) 25 (24)									

**Additional recommendations**

Consider closing access or converting Sawyer Ave one-way northbound. This measure will improve safety.

Slow Zone	Direction	Bus Stops within Slow Zone	Stop Location	Ridership Boarding AM (PM) Alighting AM (PM)	Crossing Bus Route	Description of Issues/ Limitations	Potential Solution(s)	Benefit(s)	Potential Impacts(s)	Feasibility	Recommendation	Consideration
Ashland Ave	Eastbound	PAULINA	Nearside	N/A	-	Congested conditions due to all-way stop at Paulina St. All-way stop sign is less than 400 feet from intersection which results in additional delays.	Install signal at Paulina St.	Increases travel speed between Paulina St and Ashland Ave and prevents intersection blocking.	Not warranted.	No	No	Consider two-way stop
							Convert All-way stop at Paulina St to two-way stop.		political implications, increase pedestrian delay, potential for intersection blocking and increased delay on side street.	Yes	Yes	Consider pedestrian safety enhancements
		ASHLAND	Nearside	136 (116) 43 (59)	9, 9X, 169	Historical pedestrian safety issues.	Pedestrian refuge median with pedestrian crossing signs.	Allows pedestrian to cross in two stages if there is heavy through traffic.	Parking removal and peak hour parking impacts.	Yes	Yes	consider farside bus stops
							Move EB and WB bus stop to farside location at Paulina St.	Increases visibility of crossing pedestrians and crossing vehicular traffic.	Loss of free parking spaces.	Yes	Yes	-
							Roadway and pavement markings in poor condition.	Restripe and/or resurface roadway.	Provides clear delineation of travel lanes and enhances safety .	None.	Yes	Yes
		Westbound	PAULINA	Nearside	N/A	-	Congested conditions.	EB and WB Peak hour bus lane.	Allows bus to bypass any queues that result from heavy through traffic and queueing at Ashland Ave.	Costs of sign structures, parking restrictions and enforcement of peak hour parking restrictions.	Yes	Yes
	Update signal timings at Ashland Ave.							Potential for optimizing capacity and reducing delay.	Possible increase delay in other directions.	Yes	Yes	-
	Move WB stop to farside.							Implement TSP.	None	No, driveway and signal controller prevent relocation from being feasible.	No	TSP not recommended due to TSP on Ashland Ave.
	Move EB stop to farside.		Yes	Yes								
	ASHLAND		Nearside	46 (41) 103 (129)	9, 9X, 169	Implement EB and WB near level boarding.		Expedites loading and alighting times for passengers, reduces bus dwell times.	Impacts to access at adjacent business.	No	No	-
						Implement bus and right turn only lane at Ashland Ave.		Allows the buses to skip the queue.	Reduced through capacity.	Yes, with reduced left and through lane width.	Yes	-

Slow Zone	Direction	Bus Stops within Slow Zone	Stop Location	Ridership Boarding AM (PM) Alighting AM (PM)	Crossing Bus Route	Description of Issues/ Limitations	Potential Solution(s)	Benefit(s)	Potential Impacts(s)	Feasibility	Recommendation	Consideration	
Halsted Street	Eastbound	UNION	Nearside	N/A	8A (Shared)	Congested conditions due to all-way stop at Union Ave. All-way stop sign is less than 400 feet from intersection which results in additional delays.	Install signal at Union Ave.	Increases travel speed between Halsted St and Union Ave and prevents intersection blocking.	Not warranted.	No	No	Consider two-way stop	
							Convert All-way stop at Union Ave to two-way stop.		political implications, increase pedestrian delay, potential for intersection blocking and increased delay on side street.	Yes	Yes	Consider pedestrian safety enhancements	
		HALSTED	Nearside	93 (89) 71 (84)	8	Roadway and pavement markings in poor condition.	Historical pedestrian safety issues.	Move EB and WB bus stop to Lowe Ave.	Fewer bus stops reduces delay.	Loss of free parking spaces.	Yes	Yes	-
							Roadway and pavement markings in poor condition.	Restripe and/or resurface roadway.	Provides clear delineation of travel lanes and enhances safety .	None.	Yes	Yes	-
	Westbound	UNION	Nearside with Bench	N/A	8A (Shared)	Congested conditions.	EB and WB Peak hour bus lane.	Allows bus to bypass any queues that result from heavy through traffic and queueing at Halsted St.	Costs of sign structures, parking restrictions and enforcement of peak hour parking restrictions.	Yes	Yes	-	
							Update signal timings at Ashland Ave.	Potential for optimizing capacity and reducing delay.	Possible increase delay in other directions.	Yes	Yes	-	
		HALSTED	Farside	79 (82) 69 (86)	8		Move EB stop to farside.	Allows bus to clear intersection before stopping.	None.	Yes	Yes	-	
							Implement EB and WB near level boarding.	Expedites loading and alighting times for passengers, reduces bus dwell times.	Impacts to access at adjacent business.	No	No	Ridership doesn't justify improvement.	
						Implement bus and right turn only lane at Ashland Ave.	Allows the buses to skip any queues.	Reduced through capacity and lane widths.	Yes.	Yes	-		



Slow Zone	Direction	Bus Stops within Slow Zone	Stop Location	Ridership Boarding AM (PM) Alighting AM (PM)	Crossing Bus Route	Description of Issues/ Limitations	Potential Solution(s)	Benefit(s)	Potential Impacts(s)	Feasibility	Recommendation	Consideration
Redline Station	Eastbound	PERRY AVE	Nearside with shelter			Poor delineation and pavement condition of lanes results in driver confusion and slower traffic speeds.	Restripe and/or resurface roadway.	Alt 1: Increased travel speeds and reduced drive confusion. Alt 2: Increased travel speeds and increased throughput of intersections.	Alt 1: None Alt 2: Reduced lane widths.	Yes	Yes	Additional signage if queue jump implementation is delayed.
		REDLINE STATION (LAFAYETTE AVE TO STATE ST)	Midblock	255 (491) 342 (159)	29, 75	Alt 2: No receiveing lane for bus if additonal through lane is added.	WB queue jump signal at Lafayette Ave.	Allows bus to jump head of through traffic, reduced bus delay.	Signal modernization required.	Yes	Yes	
			Nearside			Congested conditions.	Traffic signal optimization between State St and Lafayette Ave.	Reduction in stop delay for EB and WB traffic.	Other movements could experience an increase in delay.	Yes	Yes	
		WABASH AVE	Nearside			High turning volumes onto NB State St with no proteced turning phase.	Replace exisiting 5-section signal head with a 3-section arrow signal head and additional 3-section arrow signal head.	Improved intersection saftey for dual left turns onto State St.	None.	Yes	Yes	
	Westbound	WABASH AVE	Nearside			High pedestrian volumes, pedestrian crossing 79th St across bridge.	Alt 1: None. Alt 2: Implement refuge islands at State St and Lafayette Ave.	Increases pedestrian saftey and allows pedestrians to cross in multipul phases if necessary.	None	Yes	Yes	
		REDLINE STATION (LAFAYETTE AVE TO STATE ST)	Midblock	220 (387) 483 (222)	29, 75	High passenger boarding/alighting causes long dwell times.	Convert curbside lane on 79th to a dedicated bus/right turn lane.	Improved bus speed through intersections and reduces delay.	Increased dealy for right turning and through traffic.	Yes	Yes	
		PERRY AVE	Farside			CTA and CPD vehiles parking in curbside lanes resulting in possible bus delays.	Enforce EB Bus Only lane.	Prevent CTA/CPD service vehicles from using the EB Bus Only lane for parking.	None	Yes	Yes	Consider parking in median outside interchange

Slow Zone	Direction	Bus Stops within Slow Zone	Stop Location	Stop Location	Ridership Boarding AM (PM) Alighting AM (PM)	Crossing Bus Route	Description of Issues/ Limitations	Potential Solution(s)	Benefit(s)	Potential Impacts(s)	Feasibility	Recommendation	Consideration
ML King Drive	Eastbound	KING DRIVE	Farside	Nearside	51 (65) 75 (80)	3	Congested Conditions	Optimize intersection signal timing.	Allow additional time for EB and WB movements.	Increase delay for cross street.	Yes	Yes	
								Implement EB and WB dedicated bus lane/right lane at Martin Luther King Drive.	Allows the buses to skip the queue reducing bus delay.	Parking impacts.	Yes	Yes	
								Restripe or resurface roadway.	Provides clear delineation of travel lanes, enhancing safety.	None.	Yes	Yes	
	Westbound	KING DRIVE	Nearside	Nearside	83 (55) 82 (51)	3	Signal only using AM settings.	Modernize or repair traffic signal controller.	Better optimization of signal timings.	None.	Yes	Yes	
Bus stop loacted nearside							Relocate WB bus stop farside.	Bus is able to clear intersection before stopping.	Gas station has two driveways loacted on 79th St.	No	No	Keep stop nearside.	

Slow Zone	Direction	Bus Stops within Slow Zone	Stop Location	Ridership Boarding AM (PM) Alighting AM (PM)	Crossing Bus Route	Description of Issues/ Limitations	Potential Solution(s)	Benefit(s)	Potential Impacts(s)	Feasibility	Recommendation	Consideration
Stony Island Ave	Eastbound	STONY ISLAND	Nearside with Shelter and Farside	35 (47) 90 (79)	28, 30	Congested conditions. Complex 6-way intersection under 3rd level flyover ramps.	Adjust/ Optimize signal timing.	Allow additional time for EB and WB movements.	Increase delay for cross streets.	Yes	Yes	
							Implement dedicated EB and WB bus/right lanes at intersection.	Reduced bus delay.	Possible increase in delay for right turns, reduced left the through lane widths.	Yes	Yes	
	Westbound	STONY ISLAND	Farside with Shelter and Nearside	45 (73) 19 (18)	28, 30		Restripe or resurface roadway.	Provides clear delineation of travel lanes, enhancing safety.	None.	Yes	Yes	Intersection skip-dash pvmt marking.
							Intersection skip-dash pvmt markings.	Better deliniates through movements across large, complex intersection.	None.	Yes	Yes	
							Add protected WBL turn phase (23-29 turning crashes per year).	Increases time for left turns, enhances safety for turning vehicles, prevents through movement blocking.	Increases overall intersection delay.	Yes	Yes	Longer yellow or all red phase.

## **APPENDIX F – Traffic Analysis Summary**

1: W. Columbus Ave. & W. 79th St. & S. Sawyer Ave.																																		
Scenario	Eastbound								Westbound								Northeastbound								Southwestbound								Overall Intersection	
	Left		Through		Right		Approach		Left		Through		Right		Approach		Left		Through		Right		Approach		Left		Through		Right		Approach		AM	PM
	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM		
Ex Volumes Ex Geometry Unoptimized	41.9	32.5	19.9	19.4	-	28.5	23.2	30.4	52.8	18	18.5	-	20.9	26.1	24	27.7	64.7	35.1	-	64.6	34.9	-	27.2	25.2	-	27.2	25.2	Intersection Signal Delay: 39.3	Intersection Signal Delay: 27.3					
	D	C	B	B	-	C	C	C	D	B	B	-	C	C	C	C	E	D	-	E	C	-	C	C	-	C	C	Intersection LOS: D	Intersection LOS: C					
Ex Volumes Ex Geometry Optimized	58.9	47.4	17.5	20	-	33.7	27.9	27.5	44.8	17.3	15.2	-	19.7	21.7	19	22.7	34.5	28	-	34.5	27.8	-	13.5	17.9	-	13.5	17.9	Intersection Signal Delay: 27.1	Intersection Signal Delay: 23.9					
	E	D	B	C	-	C	C	C	D	B	B	-	B	C	B	C	C	C	-	C	C	-	B	B	-	B	B	Intersection LOS: C	Intersection LOS: C					
Ex Volumes Pr Geometry Optimized	105	66	32	39.2	-	60.4	46.6	53.4	16.4	56.6	26.4	-	55.8	24.2	-	31.5	0	-	44.7	21.3	-	31.5	19.4	-	44.7	19.4	Intersection Signal Delay: 47.6	Intersection Signal Delay: 28.4						
	F	E	C	D	-	E	D	D	B	E	C	-	E	C	-	C	0	-	D	C	-	C	B	-	D	B	Intersection LOS: D	Intersection LOS: C						
2040 Volumes Ex Geometry Optimized	172	114	20.4	18.6	-	79.4	45.6	53.3	59.4	32.7	14.8	-	37.5	24.6	18	27.9	42.6	26.9	-	42.6	26.9	-	29	37.7	-	29	37.7	Intersection Signal Delay: 48.5	Intersection Signal Delay: 34.4					
	F	F	C	B	-	E	D	D	E	C	B	-	D	C	B	C	D	C	-	D	C	-	C	D	-	C	D	Intersection LOS: D	Intersection LOS: C					
2040 Volumes Pr Geometry Optimized	141	127	33.5	45.3	-	75.2	68	58.1	25.3	58.3	32.2	-	58.2	30.7	-	49.8	0	-	52	24.1	-	35.1	38.4	-	52	38.4	Intersection Signal Delay: 55.2	Intersection Signal Delay: 41.0						
	F	F	C	D	-	E	E	E	C	E	C	-	E	C	-	D	0	-	D	C	-	D	D	-	D	D	Intersection LOS: E	Intersection LOS: D						

2: S. Kedzie Ave. & W. 79th St.																																				
Scenario	Eastbound								Westbound								Northbound								Southbound								Overall Intersection			
	Left		Through		Right		Approach		Left		Through		Right		Approach		Left		Through		Right		Approach		Left		Through		Right		Approach		AM		PM	
	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM
Ex Volumes Ex Geometry Unoptimized	-	9.3	12	0.7	1.1	8	9.6	27.3	28.2	31.7	34.7	-	31.6	34.4	-	37.7	33.5	-	37.7	33.5	-	10.1	10.3	-	10.1	10.3	Intersection Signal Delay: 22.5	Intersection Signal Delay: 21.1	Intersection LOS: C	Intersection LOS: C						
	A	B	A	A	A	A	C	C	C	C	-	C	C	-	D	C	-	D	C	-	B	B	-	B	B	B	B	Intersection LOS: C	Intersection LOS: C							
Ex Volumes Ex Geometry Optimized	-	20.7	14.7	2.9	1.4	18	11.8	27.6	28.6	32.5	35.5	-	32.4	35.2	-	14.8	24.2	-	14.8	24.2	-	1.6	4.9	-	1.6	4.9	Intersection Signal Delay: 16.2	Intersection Signal Delay: 18.3	Intersection LOS: B	Intersection LOS: B						
	C	B	A	A	B	B	C	C	C	D	-	C	D	-	B	C	-	B	C	-	A	A	-	A	A	A	A	Intersection LOS: B	Intersection LOS: B							
Ex Volumes Pr Geometry Optimized	-	56.7	18	22.1	1.4	51.4	14.3	35	34.8	37.8	38.9	-	37.8	38.7	-	19	19.3	-	19	19.3	-	9.6	4.2	-	9.6	4.2	Intersection Signal Delay: 29.6	Intersection Signal Delay: 18.5	Intersection LOS: C	Intersection LOS: B						
	E	B	C	A	D	B	C	C	C	D	D	-	D	D	-	B	B	-	B	B	-	A	A	-	A	A	Intersection LOS: C	Intersection LOS: B								
2040 Volumes Ex Geometry Optimized	-	26.7	15.2	4.7	1.3	23.3	12.1	33.1	29.7	42.4	36.1	-	42.2	35.8	-	24.4	25.5	-	24.4	25.5	-	34.7	5.9	-	34.7	5.9	Intersection Signal Delay: 29.6	Intersection Signal Delay: 19.0	Intersection LOS: C	Intersection LOS: B						
	C	B	A	A	C	B	C	C	C	D	D	-	D	D	-	C	C	-	C	C	-	C	A	-	C	A	Intersection LOS: C	Intersection LOS: B								
2040 Volumes Pr Geometry Optimized	-	65	21	21.6	1	58.4	16.6	35.9	40.7	39.3	45.2	-	39.2	45	-	22	24.2	-	22	24.2	-	9.3	4.9	-	9.3	4.9	Intersection Signal Delay: 32.5	Intersection Signal Delay: 21.8	Intersection LOS: C	Intersection LOS: C						
	E	C	C	A	E	B	D	D	D	D	D	-	D	D	-	C	C	-	C	C	-	A	A	-	A	A	Intersection LOS: C	Intersection LOS: C								

3: W. Columbus Ave. & S. Kedzie Ave.																																		
Scenario	Northeastbound								Southwestbound								Northbound								Southbound								Overall Intersection	
	Left		Through		Right		Approach		Left		Through		Right		Approach		Left		Through		Right		Approach		Left		Through		Right		Approach		AM	PM
	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM
Ex Volumes Ex Geometry Unoptimized	31.7	25.5	13	14.6	-	21	19.9	67	55	46.7	52.6	-	50.1	53	-	14.5	16.8	-	14.5	16.8	-	29.6	26.5	5.1	11.3	17.4	26.5	Intersection Signal Delay: 22.6	Intersection Signal Delay: 28.0					
	C	C	B	B	-	C	B	E	E	D	D	-	D	D	-	B	B	-	B	B	-	C	C	A	B	B	C	Intersection LOS: C	Intersection LOS: C					
Ex Volumes Ex Geometry Optimized	35.3	24.4	16.9	16.1	-	24.8	20.2	48.2	58.7	35.6	58.3	-	37.8	58.4	-	28.6	26.1	-	28.6	26.1	-	32	35.3	4.3	10.5	18.2	35.3	Intersection Signal Delay: 25.6	Intersection Signal Delay: 34.0					
	D	C	B	B	-	C	C	D	E	D	E	-	D	E	-	C	C	-	C	C	-	C	D	A	B	B	D	Intersection LOS: C	Intersection LOS: C					
Ex Volumes Pr Geometry Optimized	8.6	28.9	1.2	20.5	-	4.4	24.6	53.8	46.6	38.8	43.6	-	41.3	44.1	-	27	14.9	-	27	14.9	-	37	22	4.4	9.7	20.7	22	Intersection Signal Delay: 18.4	Intersection Signal Delay: 25.5					
	A	C	A	C	-	A	24.6	D	D	D	D	-	D	D	-	C	B	-	C	B	-	D	C	A	A	C	C	Intersection LOS: B	Intersection LOS: C					
2040 Volumes Ex Geometry Optimized	32	28.1	11.1	15.5	-	20	21.7	64.1	56.4	30.8	57.8	-	36.4	57.6	-	86.4	33.3	-	86.4	33.3	-	28.9	37.9	6	13.4	17.5	37.9	Intersection Signal Delay: 35.7	Intersection Signal Delay: 36.5					
	C	C	B	B	-	C	C	E	E	C	E	-	D	E	-	F	C	-	F	C	-	C	D	A	B	B	D	Intersection LOS: D	Intersection LOS: D					
2040 Volumes Pr Geometry Optimized	12.1	34.9	1.6	21.4	-	6.1	28.1	69.3	53	40	49	-	45	49.7	-	36.5	18.9	-	36.5	18.9	-	38.4	25.3	7.4	12.8	23	25.3	Intersection Signal Delay: 22.3	Intersection Signal Delay: 29.3					
	B	C	A	C	-	A	28.1	E	D	D	D	-	D	D	-	D	B	-	D	B	-	D	C	A	B	C	C	Intersection LOS: C	Intersection LOS: C					

4: Ashland Avenue & 79th Street																																		
Scenario	Eastbound								Westbound								Northbound								Southbound								Overall Intersection	
	Left		Through		Right		Approach		Left		Through		Right		Approach		Left		Through		Right		Approach		Left		Through		Right		Approach		AM	PM
	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM
Ex Volumes Ex Geometry Unoptimized	28.7	31.9	103	65	5.7	3.1	84.5	56.1	25.7	26.9	39.8	72.5	7.8	9.7	34.6	60	22.4	43.5	29.4	23.1	8.2	8.6	27.4	24	23	21.7	23.2	41.3	6.4	14.6	21.6	37.7	Intersection Signal Delay: 43.1	Intersection Signal Delay: 43.6
	C	C	F	E	A	A	F	E	C	C	D	E	A	A	C	E	C	D	C	C	A	A	C	C	C	C	C	D	A	B	C	D	Intersection LOS: D	Intersection LOS: D
Ex Volumes Ex Geometry Optimized	14.6	27.3	63	52	1.4	2.8	51.1	45.1	12.9	23.5	23.3	56.2	2.2	10.1	19.8	47.1	24.1	54.8	72.9	25.5	4.9	9.5	64.4	27.3	26.1	24	25.3	51.8	3.6	16.1	23.2	46.9	Intersection Signal Delay: 43.9	Intersection Signal Delay: 42.8
	B	C	E	D	A	A	D	D	B	C	C	E	A	B	B	D	C	D	E	C	A	A	E	C	C	C	C	D	A	B	C	D	Intersection LOS: D	Intersection LOS: D
Ex Volumes Pr Geometry Optimized	15.9	23.3	31.1	33.1	3.1	2.6	26.7	29.7	13.3	18.9	17.6	33	3.6	6.4	15.5	28.3	29.8	54.3	42.8	26.2	9.9	9.8	39.5	27.9	32.8	24.8	30.7	44.5	7.6	16.3	28.6	40.8	Intersection Signal Delay: 29.2	Intersection Signal Delay: 33.3
	B	C	C	C	A	A	C	C	B	B	B	C	A	A	B	C	C	D	D	C	A	A	D	C	C	C	C	D	A	B	C	D	Intersection LOS: C	Intersection LOS: C
2040 Volumes Ex Geometry Optimized	18	32.6	66.1	81.2	3.2	4.9	54.1	70	15.7	28.3	28.2	71.3	7.4	11.5	24.6	59.5	29.4	79.8	62.3	31.6	9	13.4	56	35.6	34.1	29.9	30.6	71.2	6.8	22	28.5	64.3	Intersection Signal Delay: 43.6	Intersection Signal Delay: 59.2
	B	C	E	F	A	A	D	E	B	C	C	E	A	B	C	E	C	E	E	C	A	B	E	D	C	C	C	E	A	C	C	E	Intersection LOS: D	Intersection LOS: E
2040 Volumes Pr Geometry Optimized	17.7	29.4	41.1	50.4	3.7	3.4	34.8	44.8	16	25.1	21.4	47.5	5.8	10.4	19	40.6	30.1	60.4	44.2	26.4	10.3	10	40.7	28.8	33.7	25	30.8	46.5	7.8	16.7	28.8	42.5	Intersection Signal Delay: 32.2	Intersection Signal Delay: 40.1
	B	C	D	D	A	A	C	D	B	C	C	D	A	B	B	D	C	E	D	C	B	A	D	C	C	C	C	D	A	B	C	D	Intersection LOS: C	Intersection LOS: D



7: Halsted Street & 79th Street																																		
Scenario	Eastbound								Westbound								Northbound								Southbound								Overall Intersection	
	Left		Through		Right		Approach		Left		Through		Right		Approach		Left		Through		Right		Approach		Left		Through		Right		Approach		AM	PM
	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM		
Ex Volumes Ex Geometry Unoptimized	17.3	14	146	99.6	9	6.3	122	80.7	28.4	30.7	62.9	46	4.4	4.5	55.8	40.5	13.5	52.8	23	21.9	4.7	4.1	20.3	23.9	13.7	18.6	15.5	83.7	3.1	5.8	13.7	71.4	Intersection Signal Delay: 58.4	Intersection Signal Delay: 57.2
	B	B	F	F	A	A	F	F	C	C	E	D	A	A	E	D	B	D	C	C	A	A	C	C	B	B	B	F	A	A	B	E	Intersection LOS: E	Intersection LOS: E
Ex Volumes Ex Geometry Optimized	7.1	20.7	57.5	72.3	1.3	11	48	60.3	16	33.2	31.8	43.6	2.2	7.9	28.4	39.3	16.9	57.8	41.9	27.4	4.7	7.1	35.8	28.9	18.4	24	20	76.8	2.7	9.8	17.6	66.5	Intersection Signal Delay: 35.0	Intersection Signal Delay: 51.2
	A	C	E	E	A	B	D	E	B	C	C	D	A	A	C	D	B	E	D	C	A	A	D	C	B	C	C	E	A	A	B	E	Intersection LOS: D	Intersection LOS: D
Ex Volumes Pr Geometry Optimized	9.6	23.3	25.7	47.5	4.2	10.8	22.3	40.9	14.9	29.4	22.7	36	3.2	6.5	20.6	32.8	21.9	47.7	41	24.4	8.1	5.9	35.9	25.1	24.7	21.8	24.9	52.2	5.3	8.6	22.4	45.9	Intersection Signal Delay: 26.2	Intersection Signal Delay: 51.3
	A	C	C	D	A	B	C	D	B	C	C	D	A	A	C	C	C	D	D	C	A	A	D	C	C	C	C	D	A	A	C	D	Intersection LOS: C	Intersection LOS: D
2040 Volumes Ex Geometry Optimized	9.8	29.1	58.6	112	3.3	15.2	49.3	92.7	17.3	48.6	39.3	52.4	4	10.8	35.3	48.6	23.1	149	72	32.5	8.8	10.5	61	47.8	30.2	29	27.1	102	5.9	13.2	24.7	87.8	Intersection Signal Delay: 45.7	Intersection Signal Delay: 72.1
	A	C	E	F	A	B	D	F	B	D	D	D	A	B	D	D	C	F	E	C	A	B	E	D	C	C	C	F	A	B	C	F	Intersection LOS: D	Intersection LOS: E
2040 Volumes Pr Geometry Optimized	9.5	26.5	36.4	77.2	3.7	12	31	64.8	16.5	48.4	30.6	45.9	3.9	8	27.8	43.3	22.4	90.1	49.3	25.3	8.6	6.6	42.7	32.7	28.1	22.6	25.6	66.3	5.8	9	23.3	57.6	Intersection Signal Delay: 32.5	Intersection Signal Delay: 51.3
	A	C	D	E	A	B	C	E	B	D	C	D	A	A	C	D	C	F	D	C	A	A	D	C	C	C	C	E	A	A	C	E	Intersection LOS: C	Intersection LOS: D

9: Lafayette Avenue & 79th Street																																		
Scenario	Eastbound								Westbound								Northbound								Southbound								Overall Intersection	
	Left		Through		Right		Approach		Left		Through		Right		Approach		Left		Through		Right		Approach		Left		Through		Right		Approach		AM	PM
	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM		
Ex Volumes Ex Geometry Unoptimized	-		36.7	35.2			36.7	35.2	9.5	12	8.2	5.8			8.7	8									23.5	25.9	21.1	58.8	6.3	4.7	18.5	52.1	Intersection Signal Delay: 23.3	Intersection Signal Delay: 36.8
		D	D			D	D	A	B	A	A			A	A										C	C	C	E	A	A	B	D	Intersection LOS: C	Intersection LOS: D
Ex Volumes Ex Geometry Optimized	-		23.9	40.5			23.9	40.5	18	23.9	14.8	14.2			16	17.6									21.7	19.1	19.6	27.9	5.8	3.2	17.1	25.6	Intersection Signal Delay: 19.6	Intersection Signal Delay: 27.7
		C	D			C	D	B	C	B	B			B	B										C	B	B	C	A	A	B	C	Intersection LOS: B	Intersection LOS: C
Ex Volumes Pr Geometry* Optimized	-		14	36.6	4.9	19.4	11.9	32.3	32	31.6	12.9	23.2			19.9	26.2									36.9	25	33.6	34.1	8.5	2.3	29	31.3	Intersection Signal Delay: 19.3	Intersection Signal Delay: 30.3
		B	D	A	B	B	C	C	C	B	C			B	C										D	C	C	C	A	A	C	C	Intersection LOS: B	Intersection LOS: C
2040 Volumes Ex Geometry Optimized	-		17	25.8			17	25.8	10.8	34.1	3.4	13.6			6.1	20.8									26	18	23.2	28.2	6.6	3.5	20.3	25.6	Intersection Signal Delay: 14.7	Intersection Signal Delay: 24.4
		B	C			B	C	B	C	A	B			A	C										C	B	C	C	A	A	C	C	Intersection LOS: B	Intersection LOS: C
2040 Volumes Pr Geometry Optimized	-		12.6	26.6	9.7	26.1	11.9	26.5	36.3	38.3	14.7	23.6			22.1	28.5									39	25.7	35	43.8	8.7	4.2	30.2	39.6	Intersection Signal Delay: 20.3	Intersection Signal Delay: 33.2
		B	C	A	C	B	C	D	D	B	C			C	C										D	C	C	D	A	A	C	D	Intersection LOS: C	Intersection LOS: C

10: State Street & 79th Street																																		
Scenario	Eastbound								Westbound								Northbound								Southbound								Overall Intersection	
	Left		Through		Right		Approach		Left		Through		Right		Approach		Left		Through		Right		Approach		Left		Through		Right		Approach		AM	PM
	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM		
Ex Volumes Ex Geometry Unoptimized	9.5	7.3	9	8.5	-	-	9.2	7.9	-	-	65.3	50.4	-	-	65.3	50.4	21.3	26.3	36.1	24.7	5.1	19.9	31.1	23.4	-	-	-	-	Intersection Signal Delay: 30.4	Intersection Signal Delay: 25.2				
	A	A	A	A	-	-	A	A	-	-	E	D	-	-	E	D	C	C	D	C	A	B	C	C	-	-	-	-	Intersection LOS: C	Intersection LOS: C				
Ex Volumes Ex Geometry Optimized	36	8.6	13.6	9.2	-	-	25.2	8.9	-	-	62.5	29.8	-	-	62.5	29.8	21.3	20.4	36.1	19.3	5.1	14.5	31.1	17.9	-	-	-	-	Intersection Signal Delay: 35.3	Intersection Signal Delay: 17.9				
	D	A	B	A	-	-	C	A	-	-	E	C	-	-	E	C	C	C	D	B	A	B	C	B	-	-	-	-	Intersection LOS: D	Intersection LOS: B				
Ex Volumes Pr Geometry Optimized	13	11.2	34.1	28.2	-	-	23.2	20.6	-	-	28.3	18.3	20.3	9.3	25.5	15.5	27.2	33	39	31.4	9	23.2	34.6	29	-	-	-	-	Intersection Signal Delay: 29.0	Intersection Signal Delay: 22.2				
	B	B	C	C	-	-	C	C	-	-	C	B	C	A	C	B	C	C	D	C	A	C	C	C	-	-	-	-	Intersection LOS: C	Intersection LOS: C				
2040 Volumes Ex Geometry Optimized	59.8	15.2	16.5	7.4	-	-	38.2	10.9	-	-	44.6	25.9	-	-	44.6	25.9	20.6	19.4	39.7	18.3	6.2	15.3	33.9	17.5	-	-	-	-	Intersection Signal Delay: 37.5	Intersection Signal Delay: 17.6				
	E	B	B	A	-	-	D	B	-	-	D	C	-	-	D	C	C	B	D	B	A	B	C	B	-	-	-	-	Intersection LOS: D	Intersection LOS: B				
2040 Volumes Pr Geometry Optimized	22.3	11.1	57.4	51.5	-	-	39.1	32.9	-	-	31.3	19.5	26.7	9.9	29.7	16.5	28.2	34.4	50.6	32.5	10.6	23	43.7	29.7	-	-	-	-	Intersection Signal Delay: 36.0	Intersection Signal Delay: 27.1				
	C	B	E	D	-	-	D	C	-	-	C	B	C	A	C	B	C	C	D	C	B	C	D	C	-	-	-	-	Intersection LOS: C	Intersection LOS: C				

12: King Dr & 79th Street																																		
Scenario	Eastbound								Westbound								Northbound								Southbound								Overall Intersection	
	Left		Through		Right		Approach		Left		Through		Right		Approach		Left		Through		Right		Approach		Left		Through		Right		Approach		AM	PM
	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM
Ex Volumes Ex Geometry Unoptimized	10.1	5.9	29.8	20	2.4	3	23.4	17	13.1	9.7	28.2	25.8	1.3	3.8	23.3	22.2	9.4	31	12.6	18.6	4.4	7.1	11	19	19.4	15.5	25	51.7	0.9	3.3	21.9	46.7	Intersection Signal Delay: 19.5	Intersection Signal Delay: 28.1
	B	A	C	B	A	A	C	B	B	A	C	C	A	A	C	C	A	C	B	B	A	A	B	B	B	B	C	D	A	A	C	D	Intersection LOS: B	Intersection LOS: C
Ex Volumes Ex Geometry Optimized	8.3	8	24.5	25.4	1.5	3.5	19.2	21.7	10.2	12.3	23.5	34.1	0.9	5.2	19.3	29.3	9.9	21.7	13.1	16.7	4.5	6.4	11.4	16.1	15.7	14	19.7	34.6	0.4	3.4	17.2	31.7	Intersection Signal Delay: 16.6	Intersection Signal Delay: 25.7
	A	A	C	C	A	A	B	C	B	B	C	C	A	A	B	C	A	C	B	B	A	A	B	B	B	B	C	A	A	B	C	Intersection LOS: B	Intersection LOS: C	
Ex Volumes Pr Geometry Optimized	7.5	7.4	15.5	14.3	1.4	3.4	12.5	12.5	9.4	11.6	15.9	22.2	1.3	3	13.5	19.4	10.9	24.6	13.9	17.4	5.2	7.3	12.3	17.1	17	15.1	20.8	31.9	0.4	3.8	18.3	29.4	Intersection Signal Delay: 13.8	Intersection Signal Delay: 20.6
	A	A	B	B	A	A	B	B	A	B	B	C	A	A	B	B	B	C	B	B	A	A	B	B	B	B	C	C	A	A	B	C	Intersection LOS: B	Intersection LOS: C
2040 Volumes Ex Geometry Optimized	8.1	17.4	21	66.3	1.7	11.9	16.6	58.8	9.5	23.7	22.1	38.9	1.1	12.8	18.4	35.3	12.5	91.1	15	30.7	5.3	16.3	13.4	37.9	17.1	27.3	22.6	78.7	0.7	10.2	19.7	71.6	Intersection Signal Delay: 16.8	Intersection Signal Delay: 52.4
	A	B	C	E	A	B	B	E	A	C	C	D	A	B	B	D	B	F	B	C	A	B	B	D	B	C	C	E	A	B	B	E	Intersection LOS: B	Intersection LOS: D
2040 Volumes Pr Geometry Optimized	8.2	6.8	20.4	38.8	1.3	2.4	16.1	33.8	10	15.8	22.1	33.5	1.2	2.3	18.5	29.3	11.5	46.1	14.7	18.3	5.6	7.7	13	21.1	17.5	15.9	22.1	43.1	0.7	4.2	19.4	39.3	Intersection Signal Delay: 16.5	Intersection Signal Delay: 31.8
	A	A	C	D	A	A	B	C	B	B	C	C	A	A	B	C	B	D	B	B	A	A	B	C	B	B	C	D	A	A	B	D	Intersection LOS: B	Intersection LOS: C

15: Stony Island Avenue & South Chicago Avenue & 79th Street

Scenario	Eastbound								Westbound								Northbound								Southbound								SW Bound		NE Bound		Overall Intersection			
	Left		Through		Right		Approach		Left		Through		Right		Approach		Left		Through		Right		Approach		Left		Through		Right		Approach		Through/Approach		Through/Approach		AM	PM		
	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM		
Ex Volumes Ex Geometry Unoptimized	66.9	87.3	82.5	98.8	2.1	3.5	68.1	79.1	198	165	110	169	14	14.7	112	128	59.4	225	28.4	40.6	4.4	3.3	30	54.9	158	59.8	35.9	38.6	1.6	11.8	43.9	38.2	51.8	131.4	51.8	51.6	Intersection Signal Delay: 48.0	Intersection Signal Delay: 64.1		
	E	F	F	F	A	A	E	E	F	F	F	F	B	B	F	F	E	F	C	D	A	A	C	D	F	E	D	D	A	B	D	D	D	F	D	D	D	D	Intersection LOS: D	Intersection LOS: E
Ex Volumes Ex Geometry Optimized	48.6	71.6	56.6	81.8	0.6	1.2	46.9	65	66.5	116	51.6	128	9.7	10.4	45.8	94.9	77.5	138	44.6	42.8	5.7	3.5	45.4	48.5	61.4	62.5	36.7	50.8	3.3	13.6	36.2	48.6	45.5	115.5	45.6	50.3	Intersection Signal Delay: 43.1	Intersection Signal Delay: 61.8		
	D	E	E	F	A	A	D	E	E	F	D	F	A	B	D	F	E	F	D	D	A	A	D	D	E	E	D	D	A	B	D	D	D	F	D	D	D	D	Intersection LOS: D	Intersection LOS: E
Ex Volumes Pr Geometry Optimized	59.2	109	68.3	108	54.8	73.2	65.1	102	53.4	78.9	50.5	82.6	46.3	63.2	50.3	76.7	68	113	45.6	54.9	34.9	47.5	47.2	59.7	73	75.6	45	58.9	39.8	38.1	47.1	58.6	56.2	81.9	56.4	59.8	Intersection Signal Delay: 50.0	Intersection Signal Delay: 65.7		
	E	F	E	F	D	E	E	F	D	E	D	F	D	E	D	E	E	F	D	D	C	D	D	E	E	E	D	E	D	D	D	E	E	F	E	E	E	E	E	Intersection LOS: D
2040 Volumes Ex Geometry Optimized	53.4	76	59.3	130	0.6	1.4	49.5	97.9	156	138	68.5	99	3.6	8.8	78.5	84.8	123	233	35.5	47.2	5.6	3.3	42.5	60.9	130	80.8	32.2	91.2	2	14	38.5	83.6	40.9	157.9	40.9	55.2	Intersection Signal Delay: 45.1	Intersection Signal Delay: 87.2		
	D	E	E	F	A	A	D	F	F	F	E	F	A	A	E	F	F	F	D	D	A	A	D	E	F	F	C	F	A	B	D	F	D	F	D	F	D	E	E	Intersection LOS: D
2040 Volumes Pr Geometry Optimized	70.3	232	82.9	157	57.4	77.5	77.4	153	57.7	111	49.6	106	43.4	65	50.5	96.5	79.5	183	45.9	61.3	32.6	50.1	48.5	71.7	86.7	73	43.8	85.7	37.3	36.1	47.1	80.2	58.7	115.8	59	61.4	Intersection Signal Delay: 51.6	Intersection Signal Delay: 86.6		
	E	F	F	F	E	E	E	F	E	F	D	F	D	E	D	F	F	F	D	E	C	D	D	E	F	E	D	F	D	D	D	F	E	F	E	E	E	E	E	Intersection LOS: D

## **APPENDIX G – Synchro Reports**

**Synchro Reports -  
Existing Volumes  
Existing Geometry  
Unoptimized**

# **AM Reports**



Lanes, Volumes, Timings  
 1: W. Columbus Ave. & W. 79th St. & S. Sawyer Ave.

11/27/2017



Lane Group	EBL	EBT	EBR	WBL	WBT	SBR2	NEL2	NET	NER	SWT	SWR	Ø1
Lane Configurations												
Traffic Volume (vph)	277	424	6	97	314	3	1	777	120	479	133	
Future Volume (vph)	277	424	6	97	314	3	1	777	120	479	133	
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	
Lane Width (ft)	9	11	9	10	12	12	12	12	12	11	11	
Storage Length (ft)	180		100	0					0		0	
Storage Lanes	1		1	1					0		0	
Taper Length (ft)	75			0								
Satd. Flow (prot)	1248	3644	0	1306	2577	1401	1539	2925	0	2736	0	
Flt Permitted	0.452			0.474			0.399					
Satd. Flow (perm)	594	3644	0	652	2577	1401	646	2925	0	2736	0	
Right Turn on Red			Yes			Yes			Yes			
Satd. Flow (RTOR)		3				212		17				
Link Speed (mph)		30			30			30		30		
Link Distance (ft)		982			345			696		414		
Travel Time (s)		22.3			7.8			15.8		9.4		
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	
Heavy Vehicles (%)	11%	13%	0%	10%	18%	0%	0%	3%	4%	3%	13%	
Bus Blockages (#/hr)	0	0	6	0	6	0	0	0	0	0	0	
Parking (#/hr)		2										
Shared Lane Traffic (%)												
Lane Group Flow (vph)	301	468	0	105	341	3	1	975	0	666	0	
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Right	
Median Width(ft)		14			10			12		12		
Link Offset(ft)		0			0			0		0		
Crosswalk Width(ft)		16			16			16		16		
Two way Left Turn Lane												
Headway Factor	1.39	1.34	1.39	1.33	1.24	1.22	1.22	1.22	1.22	1.28	1.28	
Turning Speed (mph)	15		9	15		9	15		9		9	
Turn Type	pm+pt	NA		Perm	NA	Perm	Perm	NA		NA		
Protected Phases	7	4			8			2		6		1
Permitted Phases	4			8		6 7	2					
Minimum Split (s)	8.0	33.0		33.0	33.0		44.0	44.0		45.0		5.0
Total Split (s)	19.0	56.0		37.0	37.0		44.0	44.0		54.0		10.0
Total Split (%)	17.3%	50.9%		33.6%	33.6%		40.0%	40.0%		49.1%		9%
Yellow Time (s)	3.0	4.0		4.0	4.0		4.0	4.0		4.0		3.0
All-Red Time (s)	0.0	2.0		2.0	2.0		2.0	2.0		2.0		0.0
Lost Time Adjust (s)	1.0	1.0		1.0	1.0		1.0	1.0		1.0		
Total Lost Time (s)	4.0	7.0		7.0	7.0		7.0	7.0		7.0		
Lead/Lag	Lead			Lag	Lag		Lag	Lag				Lead
Lead-Lag Optimize?												
Act Effect Green (s)	52.0	49.0		30.0	30.0	66.0	37.0	37.0		47.0		
Actuated g/C Ratio	0.47	0.45		0.27	0.27	0.60	0.34	0.34		0.43		
v/c Ratio	0.82	0.29		0.59	0.49	0.00	0.00	0.98		0.57		
Control Delay	40.9	19.9		30.4	18.0	0.0	24.0	60.2		26.6		
Queue Delay	1.0	0.0		0.0	0.0	0.0	0.0	4.4		0.6		
Total Delay	41.9	19.9		30.4	18.0	0.0	24.0	64.7		27.2		
LOS	D	B		C	B	A	C	E		C		

Lanes, Volumes, Timings  
 1: W. Columbus Ave. & W. 79th St. & S. Sawyer Ave.

11/27/2017

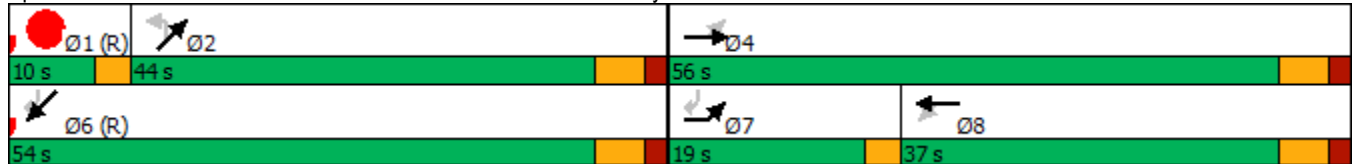


Lane Group	EBL	EBT	EBR	WBL	WBT	SBR2	NEL2	NET	NER	SWT	SWR	Ø1
Approach Delay		28.5			20.9			64.6		27.2		
Approach LOS		C			C			E		C		
Queue Length 50th (ft)	143	74		65	61	0	1	351		223		
Queue Length 95th (ft)	#277	100		m123	m86	0	4	#497		285		
Internal Link Dist (ft)		902			265			616		334		
Turn Bay Length (ft)	180						115					
Base Capacity (vph)	369	1624		177	702	925	217	995		1169		
Starvation Cap Reductn	0	0		0	0	0	0	0		200		
Spillback Cap Reductn	9	0		0	0	0	0	21		0		
Storage Cap Reductn	0	0		0	0	0	0	0		0		
Reduced v/c Ratio	0.84	0.29		0.59	0.49	0.00	0.00	1.00		0.69		

Intersection Summary

Area Type: CBD  
 Cycle Length: 110  
 Actuated Cycle Length: 110  
 Offset: 7 (6%), Referenced to phase 1:Hold and 6:SWT, Start of Green  
 Natural Cycle: 90  
 Control Type: Pretimed  
 Maximum v/c Ratio: 0.98  
 Intersection Signal Delay: 39.3  
 Intersection LOS: D  
 Intersection Capacity Utilization 105.0%  
 ICU Level of Service G  
 Analysis Period (min) 15  
 # 95th percentile volume exceeds capacity, queue may be longer.  
 Queue shown is maximum after two cycles.  
 m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 1: W. Columbus Ave. & W. 79th St. & S. Sawyer Ave.



Lanes, Volumes, Timings  
2: S. Kedzie Ave. & W. 79th St.

11/27/2017



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑	↗	↖	↑↑			↔			↔	
Traffic Volume (vph)	0	461	83	7	326	36	81	527	21	8	401	4
Future Volume (vph)	0	461	83	7	326	36	81	527	21	8	401	4
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Width (ft)	12	12	10	9	11	12	12	11	12	12	11	12
Storage Length (ft)	0		0	40		0	0		0	0		0
Storage Lanes	0		1	1		0	0		0	0		0
Taper Length (ft)	0			25			0			0		
Satd. Flow (prot)	0	2773	1206	1074	2535	0	0	2851	0	0	2851	0
Flt Permitted				0.468				0.724			0.937	
Satd. Flow (perm)	0	2773	1206	529	2535	0	0	2076	0	0	2674	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			90		11			4			1	
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		345			652			668			245	
Travel Time (s)		7.8			14.8			15.2			5.6	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	2%	11%	4%	29%	16%	12%	3%	3%	10%	0%	3%	0%
Bus Blockages (#/hr)	0	0	6	0	0	6	0	0	0	0	6	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	501	90	8	393	0	0	684	0	0	449	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		9			9			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.22	1.22	1.37	1.39	1.28	1.22	1.22	1.28	1.22	1.22	1.30	1.22
Turning Speed (mph)	15		9	15		9	15		9	15		9
Turn Type		NA	Perm	Perm	NA		pm+pt	NA		Perm	NA	
Protected Phases		4			8		5	2			6	
Permitted Phases			4	8			2			6		
Minimum Split (s)		23.0	23.0	23.0	23.0		9.0	34.0		34.0	34.0	
Total Split (s)		59.0	59.0	41.0	41.0		9.0	51.0		42.0	42.0	
Total Split (%)		53.6%	53.6%	37.3%	37.3%		8.2%	46.4%		38.2%	38.2%	
Yellow Time (s)		4.0	4.0	4.0	4.0		3.0	4.0		4.0	4.0	
All-Red Time (s)		1.0	1.0	1.0	1.0		0.0	2.0		2.0	2.0	
Lost Time Adjust (s)		1.0	1.0	1.0	1.0			1.0			1.0	
Total Lost Time (s)		6.0	6.0	6.0	6.0			7.0			7.0	
Lead/Lag				Lag	Lag		Lead			Lag	Lag	
Lead-Lag Optimize?												
Act Effct Green (s)		53.0	53.0	35.0	35.0			44.0			35.0	
Actuated g/C Ratio		0.48	0.48	0.32	0.32			0.40			0.32	
v/c Ratio		0.38	0.14	0.05	0.48			0.81			0.53	
Control Delay		9.1	0.7	27.3	31.7			37.7			9.8	
Queue Delay		0.2	0.0	0.0	0.0			0.0			0.3	
Total Delay		9.3	0.7	27.3	31.7			37.7			10.1	
LOS		A	A	C	C			D			B	
Approach Delay		8.0			31.6			37.7			10.1	

Lane Group	Ø7
Lane Configurations	
Traffic Volume (vph)	
Future Volume (vph)	
Ideal Flow (vphpl)	
Lane Width (ft)	
Storage Length (ft)	
Storage Lanes	
Taper Length (ft)	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Right Turn on Red	
Satd. Flow (RTOR)	
Link Speed (mph)	
Link Distance (ft)	
Travel Time (s)	
Peak Hour Factor	
Heavy Vehicles (%)	
Bus Blockages (#/hr)	
Shared Lane Traffic (%)	
Lane Group Flow (vph)	
Enter Blocked Intersection	
Lane Alignment	
Median Width(ft)	
Link Offset(ft)	
Crosswalk Width(ft)	
Two way Left Turn Lane	
Headway Factor	
Turning Speed (mph)	
Turn Type	
Protected Phases	7
Permitted Phases	
Minimum Split (s)	5.0
Total Split (s)	18.0
Total Split (%)	16%
Yellow Time (s)	3.0
All-Red Time (s)	0.0
Lost Time Adjust (s)	
Total Lost Time (s)	
Lead/Lag	Lead
Lead-Lag Optimize?	
Act Effct Green (s)	
Actuated g/C Ratio	
v/c Ratio	
Control Delay	
Queue Delay	
Total Delay	
LOS	
Approach Delay	

Lanes, Volumes, Timings  
 2: S. Kedzie Ave. & W. 79th St.

11/27/2017

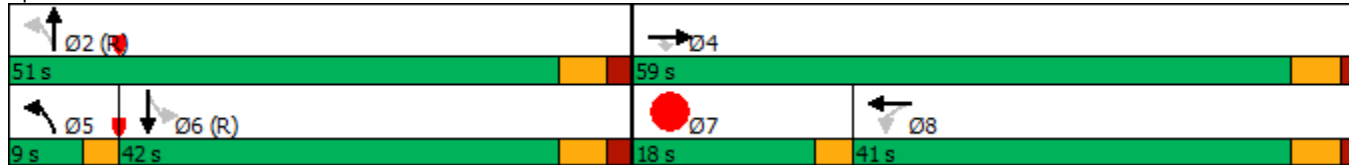


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Approach LOS	A			C			D			B		
Queue Length 50th (ft)		51	0	4	113			196			28	
Queue Length 95th (ft)		m63	m2	16	162			258			61	
Internal Link Dist (ft)		265			572			588			165	
Turn Bay Length (ft)				40								
Base Capacity (vph)		1336	627	168	814			846			851	
Starvation Cap Reductn		250	0	0	0			0			84	
Spillback Cap Reductn		0	0	0	0			0			0	
Storage Cap Reductn		0	0	0	0			0			0	
Reduced v/c Ratio		0.46	0.14	0.05	0.48			0.81			0.59	

Intersection Summary

Area Type: CBD  
 Cycle Length: 110  
 Actuated Cycle Length: 110  
 Offset: 8 (7%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green  
 Natural Cycle: 75  
 Control Type: Pretimed  
 Maximum v/c Ratio: 0.81  
 Intersection Signal Delay: 22.5  
 Intersection LOS: C  
 Intersection Capacity Utilization 78.3%  
 ICU Level of Service D  
 Analysis Period (min) 15  
 m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 2: S. Kedzie Ave. & W. 79th St.



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Lane Group	Ø7
Approach LOS	
Queue Length 50th (ft)	
Queue Length 95th (ft)	
Internal Link Dist (ft)	
Turn Bay Length (ft)	
Base Capacity (vph)	
Starvation Cap Reductn	
Spillback Cap Reductn	
Storage Cap Reductn	
Reduced v/c Ratio	
Intersection Summary	

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Lanes, Volumes, Timings  
 3: W. Columbus Ave. & S. Kedzie Ave.

11/27/2017



Lane Group	NBL	NBT	NBR	SBL	SBT	SBR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations		↕↕			↕↕	↗	↖	↕↕		↖	↕↕	
Traffic Volume (vph)	1	452	110	6	348	353	449	602	3	62	258	48
Future Volume (vph)	1	452	110	6	348	353	449	602	3	62	258	48
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Width (ft)	12	11	12	12	10	10	11	11	11	10	11	12
Storage Length (ft)	0		0	0		100	0		0	90		0
Storage Lanes	0		0	0		1	1		0	1		0
Taper Length (ft)	0			0			0			25		
Satd. Flow (prot)	0	2778	0	0	2738	1224	1417	2854	0	1422	2699	0
Flt Permitted		0.955			0.942		0.398			0.402		
Satd. Flow (perm)	0	2653	0	0	2581	1224	594	2854	0	602	2699	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		30				143		1				17
Link Speed (mph)		30			30			30				30
Link Distance (ft)		245			494			414				728
Travel Time (s)		5.6			11.2			9.4				16.5
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	0%	4%	4%	50%	4%	5%	5%	4%	33%	1%	8%	6%
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	612	0	0	385	384	488	657	0	67	332	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			11			11	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.22	1.28	1.22	1.22	1.33	1.33	1.28	1.28	1.28	1.33	1.28	1.22
Turning Speed (mph)	15		9	15		9	15		9	15		9
Turn Type	Perm	NA		Perm	NA	pm+ov	pm+pt	NA		Perm	NA	
Protected Phases		2			6	7	7	4				8
Permitted Phases	2			6		6	4			8		
Minimum Split (s)	28.0	28.0		28.0	28.0	8.0	8.0	26.0		26.0	26.0	
Total Split (s)	45.0	45.0		45.0	45.0	38.0	38.0	65.0		27.0	27.0	
Total Split (%)	40.9%	40.9%		40.9%	40.9%	34.5%	34.5%	59.1%		24.5%	24.5%	
Yellow Time (s)	4.0	4.0		4.0	4.0	3.0	3.0	4.0		4.0	4.0	
All-Red Time (s)	2.0	2.0		2.0	2.0	0.0	0.0	2.0		2.0	2.0	
Lost Time Adjust (s)		1.0			1.0	1.0	1.0	1.0		1.0	1.0	
Total Lost Time (s)		7.0			7.0	4.0	4.0	7.0		7.0	7.0	
Lead/Lag						Lead	Lead			Lag	Lag	
Lead-Lag Optimize?												
Act Effct Green (s)		38.0			38.0	79.0	61.0	58.0		20.0	20.0	
Actuated g/C Ratio		0.35			0.35	0.72	0.55	0.53		0.18	0.18	
v/c Ratio		0.65			0.43	0.42	0.84	0.44		0.61	0.66	
Control Delay		12.5			29.6	5.1	21.8	12.0		67.0	46.7	
Queue Delay		2.0			0.1	0.0	9.9	1.0		0.0	0.0	
Total Delay		14.5			29.6	5.1	31.7	13.0		67.0	46.7	
LOS		B			C	A	C	B		E	D	
Approach Delay		14.5			17.4			21.0			50.1	
Approach LOS		B			B			C			D	

Lanes, Volumes, Timings  
 3: W. Columbus Ave. & S. Kedzie Ave.

11/27/2017

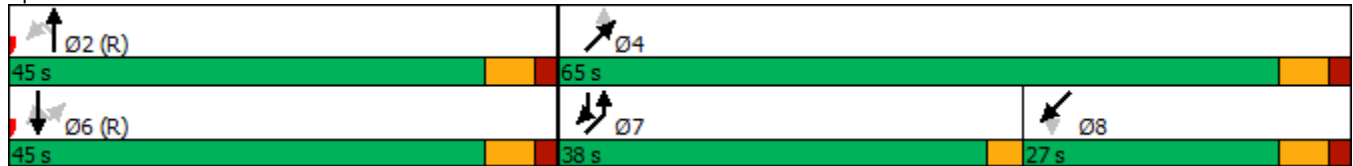


Lane Group	NBL	NBT	NBR	SBL	SBT	SBR	NEL	NET	NER	SWL	SWT	SWR
Queue Length 50th (ft)		30			109	52	288	164		44	110	
Queue Length 95th (ft)		m79			154	100	m325	m200		#111	160	
Internal Link Dist (ft)		165			414			334			648	
Turn Bay Length (ft)						100				90		
Base Capacity (vph)		936			891	919	583	1505		109	504	
Starvation Cap Reductn		185			0	0	75	551		0	0	
Spillback Cap Reductn		0			42	0	0	0		0	0	
Storage Cap Reductn		0			0	0	0	0		0	0	
Reduced v/c Ratio		0.81			0.45	0.42	0.96	0.69		0.61	0.66	

Intersection Summary

Area Type: CBD  
 Cycle Length: 110  
 Actuated Cycle Length: 110  
 Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green  
 Natural Cycle: 75  
 Control Type: Pretimed  
 Maximum v/c Ratio: 0.84  
 Intersection Signal Delay: 22.6 Intersection LOS: C  
 Intersection Capacity Utilization 80.5% ICU Level of Service D  
 Analysis Period (min) 15  
 # 95th percentile volume exceeds capacity, queue may be longer.  
 Queue shown is maximum after two cycles.  
 m Volume for 95th percentile queue is metered by upstream signal.

























Splits and Phases: 3: W. Columbus Ave. & S. Kedzie Ave.





Lanes, Volumes, Timings  
4: Ashland Avenue & 79th Street

11/27/2017

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	95	465	42	35	336	53	51	630	55	34	372	44
Future Volume (vph)	95	465	42	35	336	53	51	630	55	34	372	44
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Width (ft)	9	10	9	9	10	9	10	11	11	10	11	11
Storage Length (ft)	80		30	60		30	100		30	100		30
Storage Lanes	1		1	1		1	1		1	1		1
Taper Length (ft)	25			25			25			25		
Satd. Flow (prot)	1385	1141	1152	1345	1189	1110	1282	2400	880	1355	2394	816
Flt Permitted	0.448			0.298			0.512			0.331		
Satd. Flow (perm)	638	1141	1071	413	1189	1047	638	2400	760	455	2394	691
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			50			50			50			50
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		664			1315			665			670	
Travel Time (s)		15.1			29.9			15.1			15.2	
Confl. Peds. (#/hr)	41		54	54		41	47		41	41		47
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Heavy Vehicles (%)	0%	10%	5%	3%	10%	9%	12%	6%	4%	6%	5%	9%
Bus Blockages (#/hr)	0	0	6	0	0	6	0	0	8	0	0	8
Parking (#/hr)		14			7			38	38		42	42
Shared Lane Traffic (%)												
Lane Group Flow (vph)	104	511	46	38	369	58	56	692	60	37	409	48
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			10			10	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.39	1.67	1.44	1.39	1.59	1.44	1.33	1.54	1.99	1.33	1.57	2.06
Turning Speed (mph)	15		9	15		9	15		9	15		9
Turn Type	Perm	NA	Perm	Perm	NA	Perm	Perm	NA	Perm	Perm	NA	Perm
Protected Phases		4			8			2			6	
Permitted Phases	4		4	8		8	2		2	6		6
Minimum Split (s)	38.0	38.0	38.0	38.0	38.0	38.0	27.0	27.0	27.0	27.0	27.0	27.0
Total Split (s)	54.0	54.0	54.0	54.0	54.0	54.0	56.0	56.0	56.0	56.0	56.0	56.0
Total Split (%)	49.1%	49.1%	49.1%	49.1%	49.1%	49.1%	50.9%	50.9%	50.9%	50.9%	50.9%	50.9%
Yellow Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
All-Red Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Lost Time Adjust (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Total Lost Time (s)	9.0	9.0	9.0	9.0	9.0	9.0	9.0	9.0	9.0	9.0	9.0	9.0
Lead/Lag												
Lead-Lag Optimize?												
Act Effct Green (s)	45.0	45.0	45.0	45.0	45.0	45.0	47.0	47.0	47.0	47.0	47.0	47.0
Actuated g/C Ratio	0.41	0.41	0.41	0.41	0.41	0.41	0.43	0.43	0.43	0.43	0.43	0.43
v/c Ratio	0.40	1.10	0.10	0.23	0.76	0.13	0.21	0.68	0.17	0.19	0.40	0.15
Control Delay	28.7	102.9	5.7	25.7	39.8	7.8	22.4	29.4	8.2	23.0	23.2	6.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	28.7	102.9	5.7	25.7	39.8	7.8	22.4	29.4	8.2	23.0	23.2	6.4

Lanes, Volumes, Timings  
 4: Ashland Avenue & 79th Street

11/27/2017

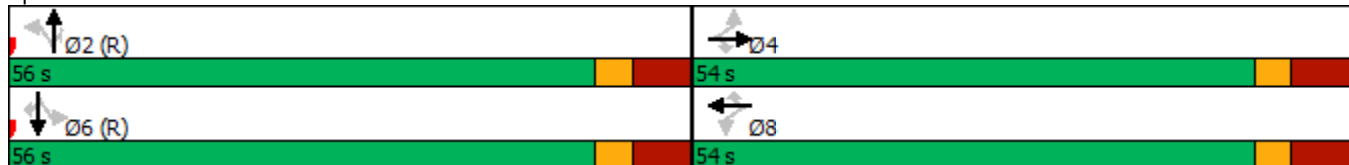


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
LOS	C	F	A	C	D	A	C	C	A	C	C	A
Approach Delay		84.5			34.6			27.4			21.6	
Approach LOS		F			C			C			C	
Queue Length 50th (ft)	51	~409	0	17	219	3	24	202	4	16	102	0
Queue Length 95th (ft)	103	#617	21	45	#358	29	54	272	31	41	145	22
Internal Link Dist (ft)		584			1235			585			590	
Turn Bay Length (ft)	80		30	60		30	100		30	100		30
Base Capacity (vph)	261	466	467	168	486	457	272	1025	353	194	1022	323
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.40	1.10	0.10	0.23	0.76	0.13	0.21	0.68	0.17	0.19	0.40	0.15

Intersection Summary






















Area Type: CBD  
 Cycle Length: 110  
 Actuated Cycle Length: 110  
 Offset: 3 (3%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green  
 Natural Cycle: 90  
 Control Type: Pretimed  
 Maximum v/c Ratio: 1.10  
 Intersection Signal Delay: 43.1  
 Intersection LOS: D  
 Intersection Capacity Utilization 120.0%  
 ICU Level of Service H  
 Analysis Period (min) 15  
 ~ Volume exceeds capacity, queue is theoretically infinite.  
 Queue shown is maximum after two cycles.  
 # 95th percentile volume exceeds capacity, queue may be longer.  
 Queue shown is maximum after two cycles.

Splits and Phases: 4: Ashland Avenue & 79th Street



Lanes, Volumes, Timings  
5: Loomis Blvd & 79th Street

11/27/2017

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	25	504	25	25	374	25	25	100	25	25	100	25
Future Volume (vph)	25	504	25	25	374	25	25	100	25	25	100	25
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (ft)	60		30	60		30	0		0	0		0
Storage Lanes	1		1	1		1	0		0	0		0
Taper Length (ft)	25			25			0			0		
Satd. Flow (prot)	1509	1429	1318	1509	1429	1350	0	1541	0	0	1541	0
Flt Permitted	0.438			0.320				0.946			0.946	
Satd. Flow (perm)	696	1429	1318	508	1429	1350	0	1469	0	0	1469	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			12			16		17			17	
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		1315			357			644			631	
Travel Time (s)		29.9			8.1			14.6			14.3	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Bus Blockages (#/hr)	0	0	6	0	0	0	0	0	0	0	0	0
Parking (#/hr)		0			0							
Shared Lane Traffic (%)												
Lane Group Flow (vph)	27	548	27	27	407	27	0	163	0	0	163	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.22	1.39	1.26	1.22	1.39	1.22	1.22	1.22	1.22	1.22	1.22	1.22
Turning Speed (mph)	15		9	15		9	15		9	15		9
Turn Type	Perm	NA	Perm	Perm	NA	Perm	Perm	NA		Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4		4	8		8	2			6		
Minimum Split (s)	17.0	17.0	17.0	17.0	17.0	17.0	18.0	18.0		18.0	18.0	
Total Split (s)	37.0	37.0	37.0	37.0	37.0	37.0	28.0	28.0		28.0	28.0	
Total Split (%)	56.9%	56.9%	56.9%	56.9%	56.9%	56.9%	43.1%	43.1%		43.1%	43.1%	
Yellow Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	
All-Red Time (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Lost Time Adjust (s)	1.0	1.0	1.0	1.0	1.0	1.0		1.0			1.0	
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0		4.0			4.0	
Lead/Lag												
Lead-Lag Optimize?												
Act Effect Green (s)	33.0	33.0	33.0	33.0	33.0	33.0		24.0			24.0	
Actuated g/C Ratio	0.51	0.51	0.51	0.51	0.51	0.51		0.37			0.37	
v/c Ratio	0.08	0.76	0.04	0.11	0.56	0.04		0.29			0.29	
Control Delay	9.0	21.5	6.1	9.7	14.8	5.4		14.7			14.7	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0		0.0			0.0	
Total Delay	9.0	21.5	6.1	9.7	14.8	5.4		14.7			14.7	
LOS	A	C	A	A	B	A		B			B	
Approach Delay		20.2			13.9			14.7			14.7	
Approach LOS		C			B			B			B	

Lanes, Volumes, Timings  
5: Loomis Blvd & 79th Street

11/27/2017

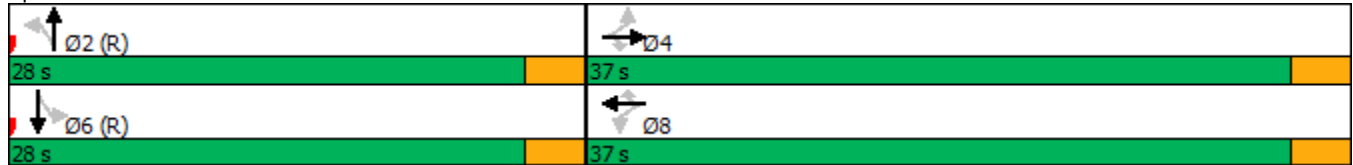


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Queue Length 50th (ft)	5	161	3	5	103	2		39			39	
Queue Length 95th (ft)	17	#330	13	18	181	13		81			81	
Internal Link Dist (ft)		1235			277			564			551	
Turn Bay Length (ft)	60		30	60		30						
Base Capacity (vph)	353	725	675	257	725	693		553			553	
Starvation Cap Reductn	0	0	0	0	0	0		0			0	
Spillback Cap Reductn	0	0	0	0	0	0		0			0	
Storage Cap Reductn	0	0	0	0	0	0		0			0	
Reduced v/c Ratio	0.08	0.76	0.04	0.11	0.56	0.04		0.29			0.29	

Intersection Summary






















Area Type: CBD  
 Cycle Length: 65  
 Actuated Cycle Length: 65  
 Offset: 32 (49%), Referenced to phase 2:NBT and 6:SBTL, Start of Green  
 Natural Cycle: 50  
 Control Type: Pretimed  
 Maximum v/c Ratio: 0.76  
 Intersection Signal Delay: 16.8  
 Intersection LOS: B  
 Intersection Capacity Utilization 50.6%  
 ICU Level of Service A  
 Analysis Period (min) 15  
 # 95th percentile volume exceeds capacity, queue may be longer.  
 Queue shown is maximum after two cycles.

Splits and Phases: 5: Loomis Blvd & 79th Street



Lanes, Volumes, Timings  
6: Morgan Street & 79th Street

11/27/2017

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	25	511	25	25	398	25	25	100	25	25	100	25
Future Volume (vph)	25	511	25	25	398	25	25	100	25	25	100	25
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (ft)	100		30	100		30	0		0	0		0
Storage Lanes	1		1	1		1	0		0	0		0
Taper Length (ft)	25			25			0			0		
Satd. Flow (prot)	1509	1429	1350	1509	1414	1350	0	1541	0	0	1541	0
Flt Permitted	0.424			0.326				0.940			0.940	
Satd. Flow (perm)	673	1429	1350	518	1414	1350	0	1460	0	0	1460	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			13			13		13			13	
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		323			1321			593			659	
Travel Time (s)		7.3			30.0			13.5			15.0	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Parking (#/hr)		0			2							
Shared Lane Traffic (%)												
Lane Group Flow (vph)	27	555	27	27	433	27	0	163	0	0	163	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.22	1.39	1.22	1.22	1.41	1.22	1.22	1.22	1.22	1.22	1.22	1.22
Turning Speed (mph)	15		9	15		9	15		9	15		9
Turn Type	Perm	NA	Perm	Perm	NA	Perm	Perm	NA		Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4		4	8		8	2			6		
Minimum Split (s)	17.0	17.0	17.0	17.0	17.0	17.0	21.0	21.0		21.0	21.0	
Total Split (s)	50.0	50.0	50.0	50.0	50.0	50.0	35.0	35.0		35.0	35.0	
Total Split (%)	58.8%	58.8%	58.8%	58.8%	58.8%	58.8%	41.2%	41.2%		41.2%	41.2%	
Yellow Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0		1.0	1.0	
Lost Time Adjust (s)	1.0	1.0	1.0	1.0	1.0	1.0		1.0			1.0	
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0	5.0		5.0			5.0	
Lead/Lag												
Lead-Lag Optimize?												
Act Effect Green (s)	45.0	45.0	45.0	45.0	45.0	45.0		30.0			30.0	
Actuated g/C Ratio	0.53	0.53	0.53	0.53	0.53	0.53		0.35			0.35	
v/c Ratio	0.08	0.73	0.04	0.10	0.58	0.04		0.31			0.31	
Control Delay	10.6	22.6	6.7	3.4	5.0	0.9		20.4			20.4	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0		0.0			0.0	
Total Delay	10.6	22.6	6.7	3.4	5.0	0.9		20.4			20.4	
LOS	B	C	A	A	A	A		C			C	
Approach Delay		21.4			4.6			20.4			20.4	
Approach LOS		C			A			C			C	
Queue Length 50th (ft)	7	214	3	1	25	0		57			57	

Lanes, Volumes, Timings  
6: Morgan Street & 79th Street

11/27/2017

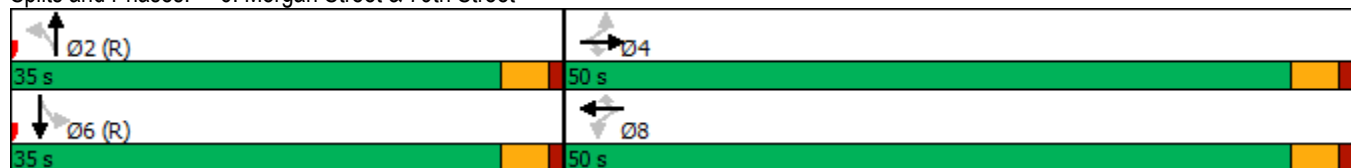


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Queue Length 95th (ft)	20	349	15	m3	m38	m1		107			107	
Internal Link Dist (ft)		243			1241			513			579	
Turn Bay Length (ft)	100		30	100		30						
Base Capacity (vph)	356	756	720	274	748	720		523			523	
Starvation Cap Reductn	0	0	0	0	0	0		0			0	
Spillback Cap Reductn	0	0	0	0	0	0		0			0	
Storage Cap Reductn	0	0	0	0	0	0		0			0	
Reduced v/c Ratio	0.08	0.73	0.04	0.10	0.58	0.04		0.31			0.31	

Intersection Summary

























Area Type: CBD  
 Cycle Length: 85  
 Actuated Cycle Length: 85  
 Offset: 7 (8%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green  
 Natural Cycle: 60  
 Control Type: Pretimed  
 Maximum v/c Ratio: 0.73  
 Intersection Signal Delay: 15.4  
 Intersection LOS: B  
 Intersection Capacity Utilization 54.0%  
 ICU Level of Service A  
 Analysis Period (min) 15  
 m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 6: Morgan Street & 79th Street



Lanes, Volumes, Timings  
7: Halsted Street & 79th Street

11/27/2017

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	38	462	61	28	349	33	62	462	53	29	220	37
Future Volume (vph)	38	462	61	28	349	33	62	462	53	29	220	37
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Width (ft)	9	10	9	9	10	9	10	11	13	10	10	13
Storage Length (ft)	100		30	60		30	100		100	100		100
Storage Lanes	1		1	1		1	1		1	1		1
Taper Length (ft)	25			25			25			25		
Satd. Flow (prot)	1385	1237	1215	1385	1221	1203	1436	1520	1368	1395	1426	1355
Flt Permitted	0.399			0.239			0.610			0.374		
Satd. Flow (perm)	582	1237	1215	348	1221	1203	922	1520	1368	549	1426	1355
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			51			51			51			51
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		1321			665			631			665	
Travel Time (s)		30.0			15.1			14.3			15.1	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	0%	10%	2%	0%	9%	3%	0%	3%	4%	3%	6%	5%
Parking (#/hr)		0			4							
Shared Lane Traffic (%)												
Lane Group Flow (vph)	41	502	66	30	379	36	67	502	58	32	239	40
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			10			10	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.39	1.52	1.39	1.39	1.56	1.39	1.33	1.28	1.18	1.33	1.33	1.18
Turning Speed (mph)	15		9	15		9	15		9	15		9
Turn Type	Perm	NA	Perm	Perm	NA	Perm	Perm	NA	Perm	Perm	NA	Perm
Protected Phases		4			8			2			6	
Permitted Phases	4		4	8		8	2		2	6		6
Minimum Split (s)	30.0	30.0	30.0	30.0	30.0	30.0	27.0	27.0	27.0	27.0	27.0	27.0
Total Split (s)	36.0	36.0	36.0	36.0	36.0	36.0	49.0	49.0	49.0	49.0	49.0	49.0
Total Split (%)	42.4%	42.4%	42.4%	42.4%	42.4%	42.4%	57.6%	57.6%	57.6%	57.6%	57.6%	57.6%
Yellow Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
All-Red Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lost Time Adjust (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Total Lost Time (s)	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0
Lead/Lag												
Lead-Lag Optimize?												
Act Effct Green (s)	28.0	28.0	28.0	28.0	28.0	28.0	41.0	41.0	41.0	41.0	41.0	41.0
Actuated g/C Ratio	0.33	0.33	0.33	0.33	0.33	0.33	0.48	0.48	0.48	0.48	0.48	0.48
v/c Ratio	0.21	1.23	0.15	0.26	0.94	0.08	0.15	0.68	0.08	0.12	0.35	0.06
Control Delay	17.3	145.7	9.0	28.4	62.9	4.4	13.5	23.0	4.7	13.7	15.5	3.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	17.3	145.7	9.0	28.4	62.9	4.4	13.5	23.0	4.7	13.7	15.5	3.1
LOS	B	F	A	C	E	A	B	C	A	B	B	A
Approach Delay		122.2			55.8			20.3			13.7	

Lanes, Volumes, Timings  
 7: Halsted Street & 79th Street

11/27/2017

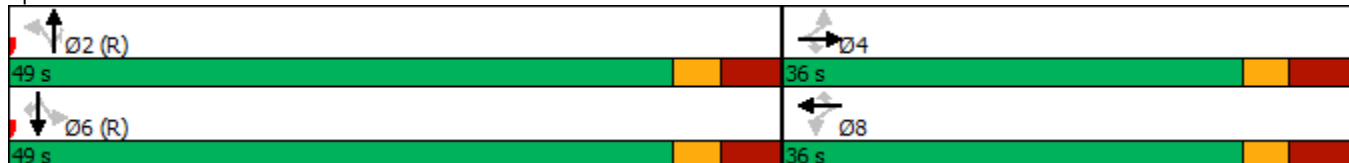


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Approach LOS	F			E			C			B		
Queue Length 50th (ft)	18	~346	18	12	195	0	19	198	2	9	76	0
Queue Length 95th (ft)	m22	#541	m21	37	#368	14	44	315	21	26	130	13
Internal Link Dist (ft)	1241			585			551			585		
Turn Bay Length (ft)	100		30	60		30	100		100	100		100
Base Capacity (vph)	191	407	434	114	402	430	444	733	686	264	687	679
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.21	1.23	0.15	0.26	0.94	0.08	0.15	0.68	0.08	0.12	0.35	0.06

Intersection Summary

Area Type: CBD  
 Cycle Length: 85  
 Actuated Cycle Length: 85  
 Offset: 53 (62%), Referenced to phase 2:NBT and 6:SBT, Start of Green  
 Natural Cycle: 90  
 Control Type: Pretimed  
 Maximum v/c Ratio: 1.23  
 Intersection Signal Delay: 58.4 Intersection LOS: E  
 Intersection Capacity Utilization 102.2% ICU Level of Service G  
 Analysis Period (min) 15  
 ~ Volume exceeds capacity, queue is theoretically infinite.  
 Queue shown is maximum after two cycles.  
 # 95th percentile volume exceeds capacity, queue may be longer.  
 Queue shown is maximum after two cycles.  
 m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 7: Halsted Street & 79th Street





Lanes, Volumes, Timings  
8: 79th Street & 150 W.

11/27/2017



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Volume (vph)	10	733	10	10	424	10	10	10	10	10	10	10
Future Volume (vph)	10	733	10	10	424	10	10	10	10	10	10	10
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Satd. Flow (prot)	0	1425	0	0	1424	0	0	1492	0	0	1492	0
Flt Permitted		0.994			0.982			0.932			0.932	
Satd. Flow (perm)	0	1418	0	0	1399	0	0	1414	0	0	1414	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		2			3			11			11	
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		558			495			173			227	
Travel Time (s)		12.7			11.3			3.9			5.2	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Parking (#/hr)		0			0							
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	819	0	0	483	0	0	33	0	0	33	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			0			0	
Link Offset(ft)		0			0			0			-30	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.22	1.39	1.22	1.22	1.39	1.22	1.22	1.22	1.22	1.22	1.22	1.22
Turning Speed (mph)	15		9	15		9	15		9	15		9
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Minimum Split (s)	9.0	9.0		9.0	9.0		21.0	21.0		21.0	21.0	
Total Split (s)	62.0	62.0		62.0	62.0		23.0	23.0		23.0	23.0	
Total Split (%)	72.9%	72.9%		72.9%	72.9%		27.1%	27.1%		27.1%	27.1%	
Yellow Time (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
All-Red Time (s)	1.0	1.0		1.0	1.0		1.0	1.0		1.0	1.0	
Lost Time Adjust (s)		1.0			1.0			1.0			1.0	
Total Lost Time (s)		5.0			5.0			5.0			5.0	
Lead/Lag												
Lead-Lag Optimize?												
Act Effct Green (s)		57.0			57.0			18.0			18.0	
Actuated g/C Ratio		0.67			0.67			0.21			0.21	
v/c Ratio		0.86			0.51			0.11			0.11	
Control Delay		22.7			6.3			21.4			21.4	
Queue Delay		0.0			0.0			0.0			0.0	
Total Delay		22.7			6.3			21.4			21.4	
LOS		C			A			C			C	
Approach Delay		22.7			6.3			21.4			21.4	
Approach LOS		C			A			C			C	
Queue Length 50th (ft)		296			62			9			9	
Queue Length 95th (ft)		#606			113			33			33	
Internal Link Dist (ft)		478			415			93			147	
Turn Bay Length (ft)												

Lanes, Volumes, Timings  
 8: 79th Street & 150 W.

11/27/2017



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Base Capacity (vph)		951			939			308			308	
Starvation Cap Reductn		0			0			0			0	
Spillback Cap Reductn		0			0			0			0	
Storage Cap Reductn		0			0			0			0	
Reduced v/c Ratio		0.86			0.51			0.11			0.11	

Intersection Summary

Area Type:	CBD
Cycle Length:	85
Actuated Cycle Length:	85
Offset:	17 (20%), Referenced to phase 2:NBT and 6:SBTL, Start of Green
Natural Cycle:	70
Control Type:	Pretimed
Maximum v/c Ratio:	0.86
Intersection Signal Delay:	16.9
Intersection LOS:	B
Intersection Capacity Utilization	74.1%
ICU Level of Service	D
Analysis Period (min)	15
# 95th percentile volume exceeds capacity, queue may be longer. Queue shown is maximum after two cycles.	

Splits and Phases: 8: 79th Street & 150 W.



Lanes, Volumes, Timings  
 9: Lafayette Avenue & 79th Street

11/27/2017



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑↑↑		↖	↑↑					↘	↑↑↑↑	↗
Traffic Volume (vph)	0	576	177	187	327	0	0	0	0	244	185	117
Future Volume (vph)	0	576	177	187	327	0	0	0	0	244	185	117
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Width (ft)	11	11	11	12	12	12	12	12	12	12	10	8
Storage Length (ft)	100		0	0		0	0		0	0		0
Storage Lanes	2		0	1		0	0		0	1		1
Taper Length (ft)	25			0			0			0		
Satd. Flow (prot)	0	4359	0	1494	2509	0	0	0	0	1203	3553	978
Flt Permitted				0.241						0.950	0.980	
Satd. Flow (perm)	0	4359	0	353	2509	0	0	0	0	1203	3553	949
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		83										127
Link Speed (mph)		30			30			30				30
Link Distance (ft)		330			322			703				664
Travel Time (s)		7.5			7.3			16.0				15.1
Confl. Peds. (#/hr)	5		130	130		5	20					20
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	2%	9%	19%	3%	8%	2%	2%	2%	2%	10%	6%	22%
Bus Blockages (#/hr)	0	0	0	0	15	0	0	0	0	0	0	0
Parking (#/hr)					17							
Shared Lane Traffic (%)										50%		
Lane Group Flow (vph)	0	818	0	203	355	0	0	0	0	132	334	127
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			12				12
Link Offset(ft)		0			0			0				0
Crosswalk Width(ft)		16			16			16				16
Two way Left Turn Lane												
Headway Factor	1.28	1.28	1.28	1.22	1.43	1.22	1.22	1.22	1.22	1.22	1.33	1.46
Turning Speed (mph)	15		9	15		9	15		9	15		9
Turn Type		NA		pm+pt	NA					Perm	NA	Perm
Protected Phases		4		3	8						6	
Permitted Phases				8						6		6
Minimum Split (s)		20.0		8.0	26.0					33.0	33.0	33.0
Total Split (s)		27.0		23.0	50.0					35.0	35.0	35.0
Total Split (%)		31.8%		27.1%	58.8%					41.2%	41.2%	41.2%
Yellow Time (s)		3.0		3.0	3.0					3.0	3.0	3.0
All-Red Time (s)		5.0		0.0	5.0					2.0	2.0	2.0
Lost Time Adjust (s)		1.0		1.0	1.0					1.0	1.0	1.0
Total Lost Time (s)		9.0		4.0	9.0					6.0	6.0	6.0
Lead/Lag		Lag		Lead								
Lead-Lag Optimize?												
Act Effct Green (s)		18.0		46.0	41.0					29.0	29.0	29.0
Actuated g/C Ratio		0.21		0.54	0.48					0.34	0.34	0.34
v/c Ratio		0.83		0.46	0.29					0.32	0.28	0.31
Control Delay		36.7		9.5	8.2					23.5	21.1	6.3
Queue Delay		0.0		0.0	0.0					0.0	0.0	0.0
Total Delay		36.7		9.5	8.2					23.5	21.1	6.3

Lanes, Volumes, Timings  
 9: Lafayette Avenue & 79th Street

11/27/2017

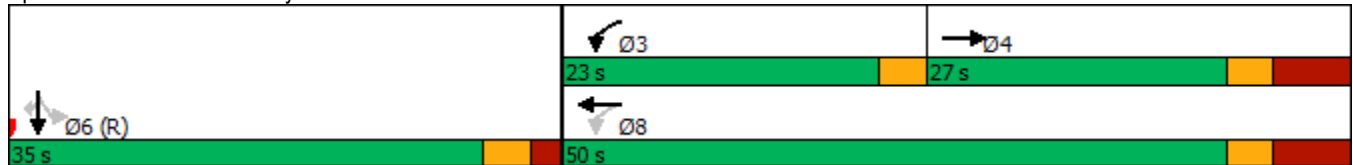


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
LOS		D		A	A					C	C	A
Approach Delay		36.7			8.7						18.5	
Approach LOS		D			A						B	
Queue Length 50th (ft)		82		70	65					60	49	0
Queue Length 95th (ft)		m105		m86	m76					115	74	37
Internal Link Dist (ft)		250			242			623			584	
Turn Bay Length (ft)												
Base Capacity (vph)		988		446	1210					410	1212	407
Starvation Cap Reductn		0		0	0					0	0	0
Spillback Cap Reductn		0		0	0					0	0	0
Storage Cap Reductn		0		0	0					0	0	0
Reduced v/c Ratio		0.83		0.46	0.29					0.32	0.28	0.31

Intersection Summary



















Area Type: CBD  
 Cycle Length: 85  
 Actuated Cycle Length: 85  
 Offset: 0 (0%), Referenced to phase 6:SBTL, Start of Green  
 Natural Cycle: 65  
 Control Type: Pretimed  
 Maximum v/c Ratio: 0.83  
 Intersection Signal Delay: 23.3  
 Intersection LOS: C  
 Intersection Capacity Utilization 71.0%  
 ICU Level of Service C  
 Analysis Period (min) 15  
 m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 9: Lafayette Avenue & 79th Street



Lanes, Volumes, Timings  
10: State Street & 79th Street

11/27/2017

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	422	398	0	0	313	144	201	892	84	0	0	0
Future Volume (vph)	422	398	0	0	313	144	201	892	84	0	0	0
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Width (ft)	12	12	12	12	12	12	12	11	16	12	12	12
Satd. Flow (prot)	2927	2583	0	0	2703	0	1373	2791	1530	0	0	0
Flt Permitted	0.278						0.950	0.999				
Satd. Flow (perm)	783	2583	0	0	2703	0	1363	2791	1314	0	0	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)					49				103			
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		322			463			683			659	
Travel Time (s)		7.3			10.5			15.5			15.0	
Confl. Peds. (#/hr)	82		240	240		82	8		145	145		8
Peak Hour Factor	0.89	0.90	0.92	0.92	0.90	0.78	0.91	0.95	0.78	0.92	0.92	0.92
Bus Blockages (#/hr)	0	15	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)		27										
Shared Lane Traffic (%)							10%					
Lane Group Flow (vph)	474	442	0	0	533	0	199	961	108	0	0	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		24			24			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.22	1.48	1.22	1.22	1.22	1.22	1.22	1.28	1.05	1.22	1.22	1.22
Turning Speed (mph)	15		9	15		9	15		9	15		9
Turn Type	pm+pt	NA			NA		Perm	NA	Perm			
Protected Phases	7	4			8			2				
Permitted Phases	4						2		2			
Minimum Split (s)	8.0	26.0			22.0		33.0	33.0	33.0			
Total Split (s)	21.0	46.0			25.0		39.0	39.0	39.0			
Total Split (%)	24.7%	54.1%			29.4%		45.9%	45.9%	45.9%			
Yellow Time (s)	3.0	3.0			3.0		3.0	3.0	3.0			
All-Red Time (s)	0.0	5.0			5.0		2.0	2.0	2.0			
Lost Time Adjust (s)	1.0	1.0			1.0		1.0	1.0	1.0			
Total Lost Time (s)	4.0	9.0			9.0		6.0	6.0	6.0			
Lead/Lag	Lead				Lag							
Lead-Lag Optimize?												
Act Effct Green (s)	42.0	37.0			16.0		33.0	33.0	33.0			
Actuated g/C Ratio	0.49	0.44			0.19		0.39	0.39	0.39			
v/c Ratio	0.58	0.39			0.97		0.38	0.89	0.19			
Control Delay	9.5	9.0			65.3		21.3	36.1	5.1			
Queue Delay	0.0	0.0			0.0		0.0	0.0	0.0			
Total Delay	9.5	9.0			65.3		21.3	36.1	5.1			
LOS	A	A			E		C	D	A			
Approach Delay		9.2			65.3			31.1				
Approach LOS		A			E			C				
Queue Length 50th (ft)	88	89			137		81	257	2			

Lanes, Volumes, Timings  
 10: State Street & 79th Street

11/27/2017

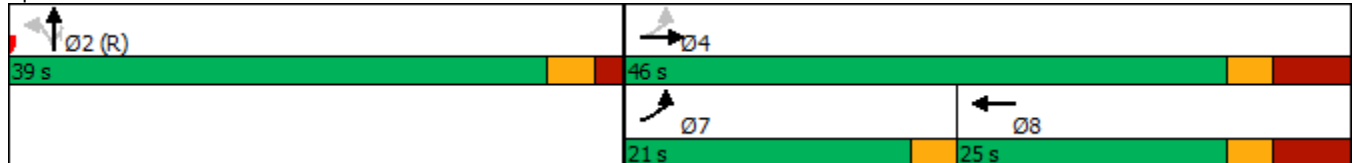


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Queue Length 95th (ft)	m98	m117			#243		143	#384	23			
Internal Link Dist (ft)		242			383			603			579	
Turn Bay Length (ft)												
Base Capacity (vph)	815	1124			548		529	1083	573			
Starvation Cap Reductn	0	0			0		0	0	0			
Spillback Cap Reductn	0	0			0		0	0	0			
Storage Cap Reductn	0	0			0		0	0	0			
Reduced v/c Ratio	0.58	0.39			0.97		0.38	0.89	0.19			

Intersection Summary

Area Type: CBD  
 Cycle Length: 85  
 Actuated Cycle Length: 85  
 Offset: 37 (44%), Referenced to phase 2:NBT, Start of Green  
 Natural Cycle: 65  
 Control Type: Pretimed  
 Maximum v/c Ratio: 0.97  
 Intersection Signal Delay: 30.4 Intersection LOS: C  
 Intersection Capacity Utilization 71.0% ICU Level of Service C  
 Analysis Period (min) 15  
 # 95th percentile volume exceeds capacity, queue may be longer.  
 Queue shown is maximum after two cycles.  
 m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 10: State Street & 79th Street



Lanes, Volumes, Timings  
11: Indiana Avenue & 79th Street

11/27/2017



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑	↗		↖						↕	
Traffic Volume (vph)	0	394	88	25	388	0	0	0	0	25	25	69
Future Volume (vph)	0	394	88	25	388	0	0	0	0	25	25	69
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (ft)	0		30	0		0	0		0	0		0
Storage Lanes	0		1	0		0	0		0	0		0
Taper Length (ft)	0			0			0			0		
Satd. Flow (prot)	0	1429	1339	0	1425	0	0	0	0	0	1450	0
Flt Permitted					0.964						0.990	
Satd. Flow (perm)	0	1429	1339	0	1378	0	0	0	0	0	1450	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			63									75
Link Speed (mph)		30			30			30				30
Link Distance (ft)		869			1306			672				662
Travel Time (s)		19.8			29.7			15.3				15.0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Bus Blockages (#/hr)	0	0	2	0	0	0	0	0	0	0	0	0
Parking (#/hr)		0			0							
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	428	96	0	449	0	0	0	0	0	129	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		10			10			0				0
Link Offset(ft)		0			0			0				0
Crosswalk Width(ft)		16			16			16				16
Two way Left Turn Lane												
Headway Factor	1.22	1.39	1.24	1.22	1.39	1.22	1.22	1.22	1.22	1.22	1.22	1.22
Turning Speed (mph)	15		9	15		9	15		9	15		9
Turn Type		NA	Perm	Perm	NA					Perm	NA	
Protected Phases		4			8							6
Permitted Phases			4	8						6		
Minimum Split (s)		18.0	18.0	18.0	18.0					19.0	19.0	
Total Split (s)		43.0	43.0	43.0	43.0					22.0	22.0	
Total Split (%)		66.2%	66.2%	66.2%	66.2%					33.8%	33.8%	
Yellow Time (s)		3.0	3.0	3.0	3.0					3.0	3.0	
All-Red Time (s)		2.0	2.0	2.0	2.0					1.0	1.0	
Lost Time Adjust (s)		1.0	1.0		1.0							1.0
Total Lost Time (s)		6.0	6.0		6.0							5.0
Lead/Lag												
Lead-Lag Optimize?												
Act Effct Green (s)		37.0	37.0		37.0							17.0
Actuated g/C Ratio		0.57	0.57		0.57							0.26
v/c Ratio		0.53	0.12		0.57							0.30
Control Delay		11.6	3.4		5.9							11.5
Queue Delay		0.0	0.0		0.0							0.0
Total Delay		11.6	3.4		5.9							11.5
LOS		B	A		A							B
Approach Delay		10.1			5.9							11.5
Approach LOS		B			A							B

Lanes, Volumes, Timings  
 11: Indiana Avenue & 79th Street

11/27/2017



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Queue Length 50th (ft)		94	5		22							16
Queue Length 95th (ft)		164	22		m30							55
Internal Link Dist (ft)		789			1226			592				582
Turn Bay Length (ft)			30									
Base Capacity (vph)		813	789		784							434
Starvation Cap Reductn		0	0		0							0
Spillback Cap Reductn		0	0		0							0
Storage Cap Reductn		0	0		0							0
Reduced v/c Ratio		0.53	0.12		0.57							0.30

Intersection Summary

Area Type: CBD  
 Cycle Length: 65  
 Actuated Cycle Length: 65  
 Offset: 32 (49%), Referenced to phase 6:SBTL, Start of Green  
 Natural Cycle: 50  
 Control Type: Pretimed  
 Maximum v/c Ratio: 0.57  
 Intersection Signal Delay: 8.6  
 Intersection LOS: A  
 Intersection Capacity Utilization 69.7%  
 ICU Level of Service C  
 Analysis Period (min) 15  
 m Volume for 95th percentile queue is metered by upstream signal.

























Splits and Phases: 11: Indiana Avenue & 79th Street





Lanes, Volumes, Timings  
12: King Dr & 79th Street

11/27/2017

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	36	312	71	50	295	43	87	308	54	45	243	31
Future Volume (vph)	36	312	71	50	295	43	87	308	54	45	243	31
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Width (ft)	10	10	10	10	10	10	10	10	10	10	10	10
Storage Length (ft)	75		30	60		30	60		30	50		50
Storage Lanes	1		1	1		1	1		1	1		1
Taper Length (ft)	25			25			25			25		
Satd. Flow (prot)	1408	1282	1260	1408	1275	1260	1408	1482	1260	1408	1482	1260
Flt Permitted	0.470			0.445			0.429			0.559		
Satd. Flow (perm)	651	1282	1086	615	1275	1095	614	1482	1116	779	1482	1163
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			67			67			44			84
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		1306			1324			671			675	
Travel Time (s)		29.7			30.1			15.3			15.3	
Confl. Peds. (#/hr)	73		78	78		73	36		59	59		36
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Parking (#/hr)		7			8							
Shared Lane Traffic (%)												
Lane Group Flow (vph)	39	339	77	54	321	47	95	335	59	49	264	34
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		10			10			10			10	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.33	1.59	1.33	1.33	1.60	1.33	1.33	1.33	1.33	1.33	1.33	1.33
Turning Speed (mph)	15		9	15		9	15		9	15		9
Turn Type	Perm	NA	Perm	Perm	NA	Perm	pm+pt	NA	Perm	Perm	NA	Perm
Protected Phases		4			8		5	2			6	
Permitted Phases	4		4	8		8	2		2	6		6
Minimum Split (s)	26.0	26.0	26.0	26.0	26.0	26.0	8.0	24.0	24.0	24.0	24.0	24.0
Total Split (s)	27.0	27.0	27.0	27.0	27.0	27.0	13.0	38.0	38.0	25.0	25.0	25.0
Total Split (%)	41.5%	41.5%	41.5%	41.5%	41.5%	41.5%	20.0%	58.5%	58.5%	38.5%	38.5%	38.5%
Yellow Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	0.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Total Lost Time (s)	6.0	6.0	6.0	6.0	6.0	6.0	4.0	5.0	5.0	5.0	5.0	5.0
Lead/Lag							Lead			Lag	Lag	Lag
Lead-Lag Optimize?												
Act Effct Green (s)	21.0	21.0	21.0	21.0	21.0	21.0	34.0	33.0	33.0	20.0	20.0	20.0
Actuated g/C Ratio	0.32	0.32	0.32	0.32	0.32	0.32	0.52	0.51	0.51	0.31	0.31	0.31
v/c Ratio	0.19	0.82	0.19	0.27	0.78	0.12	0.22	0.45	0.10	0.21	0.58	0.08
Control Delay	10.1	29.8	2.4	13.1	28.2	1.3	9.4	12.6	4.4	19.4	25.0	0.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	10.1	29.8	2.4	13.1	28.2	1.3	9.4	12.6	4.4	19.4	25.0	0.9
LOS	B	C	A	B	C	A	A	B	A	B	C	A
Approach Delay		23.4			23.3			11.0			21.9	

Lanes, Volumes, Timings  
12: King Dr & 79th Street

11/27/2017

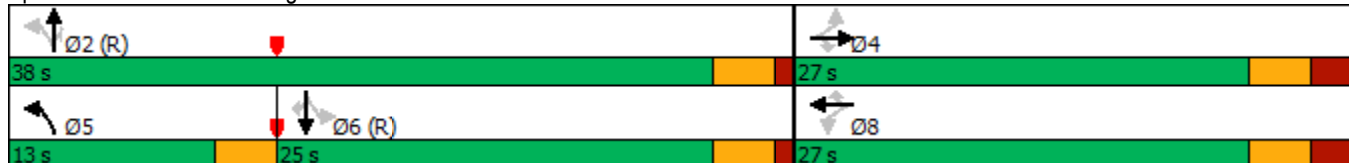


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Approach LOS	C			C			B			C		
Queue Length 50th (ft)	4	123	1	7	116	0	18	78	3	14	87	0
Queue Length 95th (ft)	m9	#259	m2	m20	#241	m1	39	137	19	39	157	3
Internal Link Dist (ft)	1226			1244			591			595		
Turn Bay Length (ft)	75		30	60		30	60		30	50		50
Base Capacity (vph)	210	414	396	198	411	399	431	752	588	239	456	416
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.19	0.82	0.19	0.27	0.78	0.12	0.22	0.45	0.10	0.21	0.58	0.08

Intersection Summary

Area Type: CBD  
 Cycle Length: 65  
 Actuated Cycle Length: 65  
 Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green  
 Natural Cycle: 60  
 Control Type: Pretimed  
 Maximum v/c Ratio: 0.82  
 Intersection Signal Delay: 19.5  
 Intersection LOS: B  
 Intersection Capacity Utilization 90.8%  
 ICU Level of Service E  
 Analysis Period (min) 15  
 # 95th percentile volume exceeds capacity, queue may be longer.  
 Queue shown is maximum after two cycles.  
 m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 12: King Dr & 79th Street



Lanes, Volumes, Timings  
13: St Lawrence Avenue & 79th Street

11/27/2017



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↑	↗		↕				
Traffic Volume (vph)	25	386	0	0	363	25	25	100	25	0	0	0
Future Volume (vph)	25	386	0	0	363	25	25	100	25	0	0	0
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (ft)	0		30	0		30	0		0	0		0
Storage Lanes	0		0	0		1	0		0	0		0
Taper Length (ft)	0			0			0			0		
Satd. Flow (prot)	0	1425	0	0	1429	1350	0	1541	0	0	0	0
Flt Permitted		0.967						0.992				
Satd. Flow (perm)	0	1382	0	0	1429	1350	0	1541	0	0	0	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)						20		15				
Link Speed (mph)		30			30			30				30
Link Distance (ft)		1324			660			692				656
Travel Time (s)		30.1			15.0			15.7				14.9
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Parking (#/hr)		0			0							
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	447	0	0	395	27	0	163	0	0	0	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		10			10			0				0
Link Offset(ft)		0			0			0				0
Crosswalk Width(ft)		16			16			16				16
Two way Left Turn Lane												
Headway Factor	1.22	1.39	1.22	1.22	1.39	1.22	1.22	1.22	1.22	1.22	1.22	1.22
Turning Speed (mph)	15		9	15		9	15		9	15		9
Turn Type	Perm	NA			NA	Perm	Perm	NA				
Protected Phases		4			8			2				
Permitted Phases	4					8	2					
Minimum Split (s)	16.0	16.0			16.0	16.0	17.0	17.0				
Total Split (s)	43.0	43.0			43.0	43.0	22.0	22.0				
Total Split (%)	66.2%	66.2%			66.2%	66.2%	33.8%	33.8%				
Yellow Time (s)	3.0	3.0			3.0	3.0	3.0	3.0				
All-Red Time (s)	1.0	1.0			1.0	1.0	1.0	1.0				
Lost Time Adjust (s)		1.0			1.0	1.0		1.0				
Total Lost Time (s)		5.0			5.0	5.0		5.0				
Lead/Lag												
Lead-Lag Optimize?												
Act Effct Green (s)		38.0			38.0	38.0		17.0				
Actuated g/C Ratio		0.58			0.58	0.58		0.26				
v/c Ratio		0.55			0.47	0.03		0.39				
Control Delay		7.2			10.1	3.4		21.3				
Queue Delay		0.0			0.0	0.0		0.0				
Total Delay		7.2			10.1	3.4		21.3				
LOS		A			B	A		C				
Approach Delay		7.2			9.7			21.3				
Approach LOS		A			A			C				
Queue Length 50th (ft)		33			80	1		48				

Lanes, Volumes, Timings  
 13: St Lawrence Avenue & 79th Street

11/27/2017



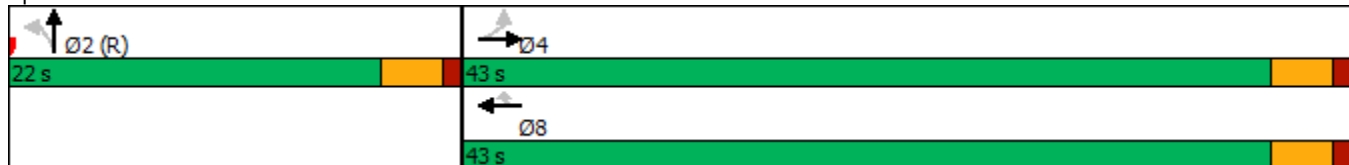
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Queue Length 95th (ft)		m41			140	10		97				
Internal Link Dist (ft)		1244			580			612			576	
Turn Bay Length (ft)						30						
Base Capacity (vph)		807			835	797		414				
Starvation Cap Reductn		0			0	0		0				
Spillback Cap Reductn		0			0	0		0				
Storage Cap Reductn		0			0	0		0				
Reduced v/c Ratio		0.55			0.47	0.03		0.39				

Intersection Summary

Area Type: CBD  
 Cycle Length: 65  
 Actuated Cycle Length: 65  
 Offset: 32 (49%), Referenced to phase 2:NBTL, Start of Green  
 Natural Cycle: 45  
 Control Type: Pretimed  
 Maximum v/c Ratio: 0.55  
 Intersection Signal Delay: 10.4  
 Intersection Capacity Utilization 67.0%  
 Analysis Period (min) 15  
 Intersection LOS: B  
 ICU Level of Service C

m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 13: St Lawrence Avenue & 79th Street



Lanes, Volumes, Timings  
14: Kenwood Avenue & 79th Street

11/27/2017



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	165	25	25	210	0	0	0	0	25	100	25
Future Volume (vph)	0	165	25	25	210	0	0	0	0	25	100	25
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Satd. Flow (prot)	0	1404	0	0	1580	0	0	0	0	0	1541	0
Flt Permitted					0.962						0.992	
Satd. Flow (perm)	0	1404	0	0	1528	0	0	0	0	0	1541	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		19									15	
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		351			1665			668			659	
Travel Time (s)		8.0			37.8			15.2			15.0	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Parking (#/hr)		0										
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	206	0	0	255	0	0	0	0	0	163	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.22	1.39	1.22	1.22	1.22	1.22	1.22	1.22	1.22	1.22	1.22	1.22
Turning Speed (mph)	15		9	15		9	15		9	15		9
Turn Type		NA		Perm	NA					Perm	NA	
Protected Phases		4			8						6	
Permitted Phases				8						6		
Minimum Split (s)		16.0		16.0	16.0					17.0	17.0	
Total Split (s)		42.0		42.0	42.0					23.0	23.0	
Total Split (%)		64.6%		64.6%	64.6%					35.4%	35.4%	
Yellow Time (s)		3.0		3.0	3.0					3.0	3.0	
All-Red Time (s)		1.0		1.0	1.0					1.0	1.0	
Lost Time Adjust (s)		1.0			1.0						1.0	
Total Lost Time (s)		5.0			5.0						5.0	
Lead/Lag												
Lead-Lag Optimize?												
Act Effct Green (s)		37.0			37.0						18.0	
Actuated g/C Ratio		0.57			0.57						0.28	
v/c Ratio		0.26			0.29						0.37	
Control Delay		7.4			20.5						20.2	
Queue Delay		0.0			0.0						0.0	
Total Delay		7.4			20.5						20.2	
LOS		A			C						C	
Approach Delay		7.4			20.5						20.2	
Approach LOS		A			C						C	
Queue Length 50th (ft)		33			149						47	
Queue Length 95th (ft)		65			m181						94	
Internal Link Dist (ft)		271			1585			588			579	
Turn Bay Length (ft)												

Lanes, Volumes, Timings  
 14: Kenwood Avenue & 79th Street

11/27/2017



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Base Capacity (vph)		807			869							437
Starvation Cap Reductn		0			0							0
Spillback Cap Reductn		0			0							0
Storage Cap Reductn		0			0							0
Reduced v/c Ratio		0.26			0.29							0.37

Intersection Summary

Area Type:	CBD
Cycle Length:	65
Actuated Cycle Length:	65
Offset:	32 (49%), Referenced to phase 6:SBTL, Start of Green
Natural Cycle:	40
Control Type:	Pretimed
Maximum v/c Ratio:	0.37
Intersection Signal Delay:	16.1
Intersection LOS:	B
Intersection Capacity Utilization	49.9%
ICU Level of Service	A
Analysis Period (min)	15
m Volume for 95th percentile queue is metered by upstream signal.	

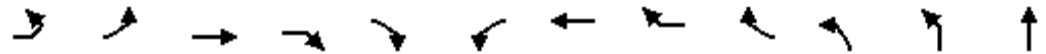
Splits and Phases: 14: Kenwood Avenue & 79th Street



Lanes, Volumes, Timings

15: Stony Island Avenue & South Chicago Avenue & 79th Street

11/27/2017



Lane Group	EBL2	EBL	EBT	EBR	EBR2	WBL	WBT	WBR	WBR2	NBL2	NBL	NBT
Lane Configurations												
Traffic Volume (vph)	1	23	136	22	8	100	161	52	30	11	126	1134
Future Volume (vph)	1	23	136	22	8	100	161	52	30	11	126	1134
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (ft)		100		100		175		150			90	
Storage Lanes		1		1		1		1			1	
Taper Length (ft)		25				25					25	
Satd. Flow (prot)	0	1509	1588	1350	0	1509	1588	1350	0	0	1509	4336
Flt Permitted		0.394				0.492					0.950	
Satd. Flow (perm)	0	626	1588	1350	0	781	1588	1350	0	0	1509	4336
Right Turn on Red					Yes				Yes			
Satd. Flow (RTOR)				134				134				
Link Speed (mph)			30				30					30
Link Distance (ft)			1665				377					254
Travel Time (s)			37.8				8.6					5.8
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	25	143	31	0	105	169	87	0	0	145	1194
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Right	Left	Left	Right	Right	Left	Left	Left
Median Width(ft)			12				12					12
Link Offset(ft)			0				0					0
Crosswalk Width(ft)			16				16					16
Two way Left Turn Lane												
Headway Factor	1.22	1.22	1.22	1.22	1.22	1.22	1.22	1.22	1.22	1.22	1.22	1.22
Turning Speed (mph)	15	15		9	9	15		9	9	15	15	
Turn Type	Perm	Perm	NA	Perm		Perm	NA	Perm		Prot	Prot	NA
Protected Phases			4				8			5	5	2
Permitted Phases	4	4		4		8		8				
Minimum Split (s)	21.0	21.0	21.0	21.0		21.0	21.0	21.0		8.0	8.0	34.0
Total Split (s)	21.0	21.0	21.0	21.0		21.0	21.0	21.0		26.0	26.0	67.0
Total Split (%)	16.2%	16.2%	16.2%	16.2%		16.2%	16.2%	16.2%		20.0%	20.0%	51.5%
Yellow Time (s)	3.0	3.0	3.0	3.0		3.0	3.0	3.0		3.0	3.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0		2.0	2.0	2.0		0.0	0.0	3.0
Lost Time Adjust (s)		1.0	1.0	1.0		1.0	1.0	1.0			1.0	1.0
Total Lost Time (s)		6.0	6.0	6.0		6.0	6.0	6.0			4.0	8.0
Lead/Lag										Lead	Lead	Lag
Lead-Lag Optimize?												
Act Effct Green (s)		15.0	15.0	15.0		15.0	15.0	15.0			22.0	59.0
Actuated g/C Ratio		0.12	0.12	0.12		0.12	0.12	0.12			0.17	0.45
v/c Ratio		0.35	0.78	0.11		1.17	0.92	0.32			0.57	0.61
Control Delay		66.9	82.5	2.1		197.7	109.9	14.0			59.4	28.4
Queue Delay		0.0	0.0	0.0		0.0	0.0	0.0			0.0	0.0
Total Delay		66.9	82.5	2.1		197.7	109.9	14.0			59.4	28.4
LOS		E	F	A		F	F	B			E	C
Approach Delay			68.1				112.3					30.0
Approach LOS			E				F					C
Queue Length 50th (ft)		20	123	0		~109	152	4			114	272
Queue Length 95th (ft)		52	#234	2		#233	#293	36			186	321

Lanes, Volumes, Timings

15: Stony Island Avenue & South Chicago Avenue & 79th Street

11/27/2017



Lane Group	NBR	NBR2	SBL2	SBL	SBT	SBR	SBR2	SET	SER	SER2	NWT	NWR
Lane Configurations												
Traffic Volume (vph)	73	14	18	58	712	61	9	187	73	2	200	65
Future Volume (vph)	73	14	18	58	712	61	9	187	73	2	200	65
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (ft)	130			0		0			0			0
Storage Lanes	2			1		1			0			0
Taper Length (ft)				0								
Satd. Flow (prot)	1350	0	0	1509	4336	1350	0	2888	0	0	2903	0
Flt Permitted				0.950								
Satd. Flow (perm)	1350	0	0	1509	4336	1350	0	2888	0	0	2903	0
Right Turn on Red		Yes					Yes			Yes		
Satd. Flow (RTOR)	92					117						1
Link Speed (mph)					30			30				30
Link Distance (ft)					690			712				889
Travel Time (s)					15.7			16.2				20.2
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Shared Lane Traffic (%)												
Lane Group Flow (vph)	92	0	0	80	749	73	0	276	0	0	282	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Right	Right	Left	Left	Left	Right	Right	Left	Right	Right	Left	Right
Median Width(ft)					12			0				0
Link Offset(ft)					0			0				0
Crosswalk Width(ft)					16			16				16
Two way Left Turn Lane												
Headway Factor	1.22	1.22	1.22	1.22	1.22	1.22	1.22	1.22	1.22	1.22	1.22	1.22
Turning Speed (mph)	9	9	15	15		9	9		9	9		9
Turn Type	Perm		Prot	Prot	NA	Perm		NA				NA
Protected Phases			1	1	6			10				14
Permitted Phases	2					6						
Minimum Split (s)	34.0		8.0	8.0	45.0	45.0		31.0				31.0
Total Split (s)	67.0		11.0	11.0	52.0	52.0		31.0				31.0
Total Split (%)	51.5%		8.5%	8.5%	40.0%	40.0%		23.8%				23.8%
Yellow Time (s)	4.0		3.0	3.0	4.0	4.0		4.0				4.0
All-Red Time (s)	3.0		0.0	0.0	3.0	3.0		2.0				2.0
Lost Time Adjust (s)	1.0			1.0	1.0	1.0		1.0				1.0
Total Lost Time (s)	8.0			4.0	8.0	8.0		7.0				7.0
Lead/Lag	Lag		Lead	Lead	Lag	Lag						
Lead-Lag Optimize?												
Act Effct Green (s)	59.0			7.0	44.0	44.0		24.0				24.0
Actuated g/C Ratio	0.45			0.05	0.34	0.34		0.18				0.18
v/c Ratio	0.14			0.99	0.51	0.14		0.52				0.53
Control Delay	4.4			157.5	35.9	1.6		51.8				51.8
Queue Delay	0.0			0.0	0.0	0.0		0.0				0.0
Total Delay	4.4			157.5	35.9	1.6		51.8				51.8
LOS	A			F	D	A		D				D
Approach Delay					43.9			51.8				51.8
Approach LOS					D			D				D
Queue Length 50th (ft)	0			69	184	0		111				113
Queue Length 95th (ft)	31			#176	227	8		158				161



Lanes, Volumes, Timings  
 15: Stony Island Avenue & South Chicago Avenue & 79th Street

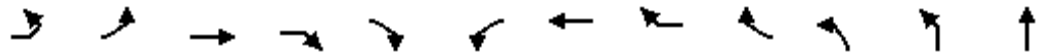
11/27/2017



Lane Group	NWR2
Lane Configurations	
Traffic Volume (vph)	3
Future Volume (vph)	3
Ideal Flow (vphpl)	1800
Storage Length (ft)	
Storage Lanes	
Taper Length (ft)	
Satd. Flow (prot)	0
Flt Permitted	
Satd. Flow (perm)	0
Right Turn on Red	Yes
Satd. Flow (RTOR)	
Link Speed (mph)	
Link Distance (ft)	
Travel Time (s)	
Peak Hour Factor	0.95
Shared Lane Traffic (%)	
Lane Group Flow (vph)	0
Enter Blocked Intersection	No
Lane Alignment	Right
Median Width(ft)	
Link Offset(ft)	
Crosswalk Width(ft)	
Two way Left Turn Lane	
Headway Factor	1.22
Turning Speed (mph)	9
Turn Type	
Protected Phases	
Permitted Phases	
Minimum Split (s)	
Total Split (s)	
Total Split (%)	
Yellow Time (s)	
All-Red Time (s)	
Lost Time Adjust (s)	
Total Lost Time (s)	
Lead/Lag	
Lead-Lag Optimize?	
Act Effct Green (s)	
Actuated g/C Ratio	
v/c Ratio	
Control Delay	
Queue Delay	
Total Delay	
LOS	
Approach Delay	
Approach LOS	
Queue Length 50th (ft)	
Queue Length 95th (ft)	

Lanes, Volumes, Timings  
 15: Stony Island Avenue & South Chicago Avenue & 79th Street

11/27/2017

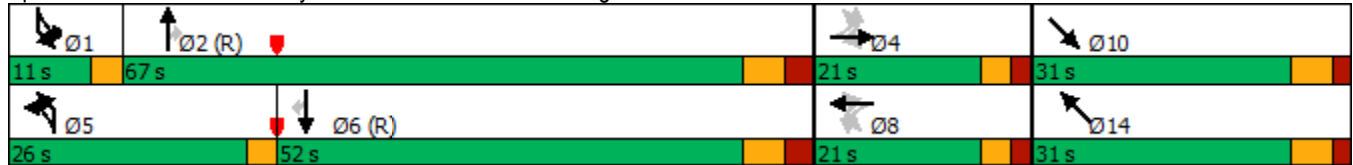


Lane Group	EBL2	EBL	EBT	EBR	EBR2	WBL	WBT	WBR	WBR2	NBL2	NBL	NBT
Internal Link Dist (ft)			1585				297					174
Turn Bay Length (ft)		100		100		175		150			90	
Base Capacity (vph)		72	183	274		90	183	274			255	1967
Starvation Cap Reductn		0	0	0		0	0	0			0	0
Spillback Cap Reductn		0	0	0		0	0	0			0	0
Storage Cap Reductn		0	0	0		0	0	0			0	0
Reduced v/c Ratio		0.35	0.78	0.11		1.17	0.92	0.32			0.57	0.61

Intersection Summary

Area Type: CBD  
 Cycle Length: 130  
 Actuated Cycle Length: 130  
 Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBT, Start of Green  
 Natural Cycle: 105  
 Control Type: Pretimed  
 Maximum v/c Ratio: 1.17  
 Intersection Signal Delay: 48.0  
 Intersection LOS: D  
 Intersection Capacity Utilization 113.9%  
 ICU Level of Service H  
 Analysis Period (min) 15  
 ~ Volume exceeds capacity, queue is theoretically infinite.  
 Queue shown is maximum after two cycles.  
 # 95th percentile volume exceeds capacity, queue may be longer.  
 Queue shown is maximum after two cycles.

Splits and Phases: 15: Stony Island Avenue & South Chicago Avenue & 79th Street



Lanes, Volumes, Timings

15: Stony Island Avenue & South Chicago Avenue & 79th Street

11/27/2017



Lane Group	NBR	NBR2	SBL2	SBL	SBT	SBR	SBR2	SET	SER	SER2	NWT	NWR
Internal Link Dist (ft)					610			632			809	
Turn Bay Length (ft)	130											
Base Capacity (vph)	662			81	1467	534		533			536	
Starvation Cap Reductn	0			0	0	0		0			0	
Spillback Cap Reductn	0			0	0	0		0			0	
Storage Cap Reductn	0			0	0	0		0			0	
Reduced v/c Ratio	0.14			0.99	0.51	0.14		0.52			0.53	

Intersection Summary



Lane Group	NWR2
Internal Link Dist (ft)	
Turn Bay Length (ft)	
Base Capacity (vph)	
Starvation Cap Reductn	
Spillback Cap Reductn	
Storage Cap Reductn	
Reduced v/c Ratio	
Intersection Summary	

Lanes, Volumes, Timings  
16: 79th Street & Cregier Avenue

11/27/2017



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	25	205	0	0	318	25	25	100	25	0	0	0
Future Volume (vph)	25	205	0	0	318	25	25	100	25	0	0	0
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Satd. Flow (prot)	0	1417	0	0	1572	0	0	1541	0	0	0	0
Flt Permitted		0.947						0.992				
Satd. Flow (perm)	0	1348	0	0	1572	0	0	1541	0	0	0	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)					6			24				
Link Speed (mph)		30			30			30				30
Link Distance (ft)		946			328			89				657
Travel Time (s)		21.5			7.5			2.0				14.9
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Bus Blockages (#/hr)	0	1	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)		0										
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	250	0	0	373	0	0	163	0	0	0	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			0				0
Link Offset(ft)		0			0			0				0
Crosswalk Width(ft)		16			16			16				16
Two way Left Turn Lane												
Headway Factor	1.22	1.40	1.22	1.22	1.22	1.22	1.22	1.22	1.22	1.22	1.22	1.22
Turning Speed (mph)	15		9	15		9	15		9	15		9
Turn Type	Perm	NA			NA		Perm	NA				
Protected Phases		4			8			2				
Permitted Phases	4						2					
Detector Phase	4	4			8		2	2				
Switch Phase												
Minimum Initial (s)	15.0	15.0			15.0		19.0	19.0				
Minimum Split (s)	19.0	19.0			19.0		23.0	23.0				
Total Split (s)	25.0	25.0			25.0		40.0	40.0				
Total Split (%)	38.5%	38.5%			38.5%		61.5%	61.5%				
Yellow Time (s)	3.0	3.0			3.0		3.0	3.0				
All-Red Time (s)	1.0	1.0			1.0		1.0	1.0				
Lost Time Adjust (s)		1.0			1.0			1.0				
Total Lost Time (s)		5.0			5.0			5.0				
Lead/Lag												
Lead-Lag Optimize?												
Recall Mode	C-Max	C-Max			C-Max		None	None				
Act Effct Green (s)		42.6			42.6			18.0				
Actuated g/C Ratio		0.66			0.66			0.28				
v/c Ratio		0.28			0.36			0.37				
Control Delay		16.1			8.4			18.9				
Queue Delay		0.0			0.0			0.0				
Total Delay		16.1			8.4			18.9				
LOS		B			A			B				
Approach Delay		16.1			8.4			18.9				

Lanes, Volumes, Timings  
 16: 79th Street & Cregier Avenue

11/27/2017



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Approach LOS		B			A			B				
Queue Length 50th (ft)		127			73			44				
Queue Length 95th (ft)		m164			127			91				
Internal Link Dist (ft)		866			248			9			577	
Turn Bay Length (ft)												
Base Capacity (vph)		883			1032			840				
Starvation Cap Reductn		0			0			0				
Spillback Cap Reductn		0			0			0				
Storage Cap Reductn		0			0			0				
Reduced v/c Ratio		0.28			0.36			0.19				

Intersection Summary

Area Type: CBD  
 Cycle Length: 65  
 Actuated Cycle Length: 65  
 Offset: 0 (0%), Referenced to phase 4:EBTL and 8:WBT, Start of Green  
 Natural Cycle: 45  
 Control Type: Actuated-Coordinated  
 Maximum v/c Ratio: 0.37  
 Intersection Signal Delay: 13.0  
 Intersection LOS: B  
 Intersection Capacity Utilization 61.4%  
 ICU Level of Service B  
 Analysis Period (min) 15  
 m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 16: 79th Street & Cregier Avenue



Lanes, Volumes, Timings  
58: Paulina Street & 79th Street

11/27/2017


















Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑			↑			↕			↕	
Traffic Volume (vph)	0	540	0	0	419	0	8	0	28	29	0	5
Future Volume (vph)	0	540	0	0	419	0	8	0	28	29	0	5
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Satd. Flow (prot)	0	1306	0	0	1274	0	0	1393	0	0	1434	0
Flt Permitted								0.989			0.962	
Satd. Flow (perm)	0	1306	0	0	1274	0	0	1393	0	0	1434	0
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		664			664			657			669	
Travel Time (s)		15.1			15.1			14.9			15.2	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.67	0.92	0.70	0.66	0.92	0.42
Heavy Vehicles (%)	2%	11%	2%	2%	10%	2%	0%	2%	4%	7%	2%	0%
Bus Blockages (#/hr)	0	0	0	0	0	6	0	0	0	0	0	0
Parking (#/hr)		1			7							
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	587	0	0	455	0	0	52	0	0	56	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		9			9			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.22	1.40	1.22	1.22	1.46	1.22	1.22	1.22	1.22	1.22	1.22	1.22
Turning Speed (mph)	15		9	15		9	15		9	15		9
Sign Control		Stop			Stop			Stop			Stop	

Intersection Summary

Area Type:	CBD
Control Type:	Unsignalized
Intersection Capacity Utilization	48.5%
ICU Level of Service	A
Analysis Period (min)	15

Lanes, Volumes, Timings  
69: Union Avenue & 79th Street

11/27/2017

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	25	519	0	0	408	16	2	8	8	0	0	0
Future Volume (vph)	25	519	0	0	408	16	2	8	8	0	0	0
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Satd. Flow (prot)	0	1311	0	0	1322	0	0	1515	0	0	0	0
Flt Permitted		0.996						0.993				
Satd. Flow (perm)	0	1311	0	0	1322	0	0	1515	0	0	0	0
Link Speed (mph)		30			30			30				30
Link Distance (ft)		665			358			654				664
Travel Time (s)		15.1			8.1			14.9				15.1
Peak Hour Factor	0.52	0.95	0.92	0.92	0.96	0.50	0.50	0.67	0.67	0.92	0.92	0.92
Heavy Vehicles (%)	8%	11%	2%	2%	10%	0%	0%	0%	0%	2%	2%	2%
Parking (#/hr)		0			0							
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	594	0	0	457	0	0	28	0	0	0	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		9			9			0				0
Link Offset(ft)		0			0			0				0
Crosswalk Width(ft)		16			16			16				16
Two way Left Turn Lane												
Headway Factor	1.22	1.39	1.22	1.22	1.39	1.22	1.22	1.22	1.22	1.22	1.22	1.22
Turning Speed (mph)	15		9	15		9	15		9	15		9
Sign Control		Stop			Stop			Stop				Stop

Intersection Summary

Area Type:	CBD
Control Type:	Unsignalized
Intersection Capacity Utilization	67.6%
ICU Level of Service	C
Analysis Period (min)	15



# **PM Reports**

# Lanes, Volumes, Timings

1: W. Columbus Ave. & W. 79th St. & S. Sawyer Ave.

11/22/2017



Lane Group	EBL	EBT	EBR	WBL	WBT	SBR2	NEL2	NET	NER	SWT	SWR	Ø1
Lane Configurations												
Traffic Volume (vph)	211	523	5	135	476	3	21	511	147	669	22	
Future Volume (vph)	211	523	5	135	476	3	21	511	147	669	22	
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	
Lane Width (ft)	9	11	9	10	12	12	12	12	12	11	11	
Storage Length (ft)	180		100	0					0		0	
Storage Lanes	1		0	1					0		0	
Taper Length (ft)	75			0								
Satd. Flow (prot)	1248	3645	0	1306	2577	1401	1539	2880	0	2865	0	
Flt Permitted	0.322			0.426			0.334					
Satd. Flow (perm)	423	3645	0	586	2577	1401	541	2880	0	2865	0	
Right Turn on Red			Yes			Yes			Yes			
Satd. Flow (RTOR)		1				103		37				
Link Speed (mph)		30			30			30		30		
Link Distance (ft)		317			345			672		414		
Travel Time (s)		7.2			7.8			15.3		9.4		
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	
Heavy Vehicles (%)	11%	13%	0%	10%	18%	0%	0%	3%	4%	3%	13%	
Bus Blockages (#/hr)	0	0	6	0	6	0	0	0	0	0	0	
Parking (#/hr)		2										
Shared Lane Traffic (%)												
Lane Group Flow (vph)	229	573	0	147	517	3	23	715	0	751	0	
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Right	
Median Width(ft)		10			10			12		12		
Link Offset(ft)		0			0			0		0		
Crosswalk Width(ft)		16			16			16		16		
Two way Left Turn Lane												
Headway Factor	1.39	1.34	1.39	1.33	1.24	1.22	1.22	1.22	1.22	1.28	1.28	
Turning Speed (mph)	15		9	15		9	15		9		9	
Turn Type	pm+pt	NA		Perm	NA	Perm	Perm	NA		NA		
Protected Phases	7	4			8			2		6		
Permitted Phases	4			8		6 7	2					
Minimum Split (s)	8.0	33.0		33.0	33.0		44.0	44.0		45.0		5.0
Total Split (s)	19.0	58.0		39.0	39.0		44.0	44.0		52.0		8.0
Total Split (%)	17.3%	52.7%		35.5%	35.5%		40.0%	40.0%		47.3%		7%
Yellow Time (s)	3.0	4.0		4.0	4.0		4.0	4.0		4.0		3.0
All-Red Time (s)	0.0	2.0		2.0	2.0		2.0	2.0		2.0		0.0
Lost Time Adjust (s)	1.0	1.0		1.0	1.0		1.0	1.0		1.0		
Total Lost Time (s)	4.0	7.0		7.0	7.0		7.0	7.0		7.0		
Lead/Lag	Lead			Lag	Lag		Lag	Lag				Lead
Lead-Lag Optimize?												
Act Effect Green (s)	54.0	51.0		32.0	32.0	64.0	37.0	37.0		45.0		
Actuated g/C Ratio	0.49	0.46		0.29	0.29	0.58	0.34	0.34		0.41		
v/c Ratio	0.72	0.34		0.86	0.69	0.00	0.13	0.72		0.64		
Control Delay	32.0	19.4		52.8	18.3	0.0	27.7	35.1		24.0		
Queue Delay	0.5	0.0		0.0	0.3	0.0	0.0	0.0		1.2		
Total Delay	32.5	19.4		52.8	18.5	0.0	27.7	35.1		25.2		
LOS	C	B		D	B	A	C	D		C		

Lanes, Volumes, Timings

1: W. Columbus Ave. & W. 79th St. & S. Sawyer Ave.

11/22/2017

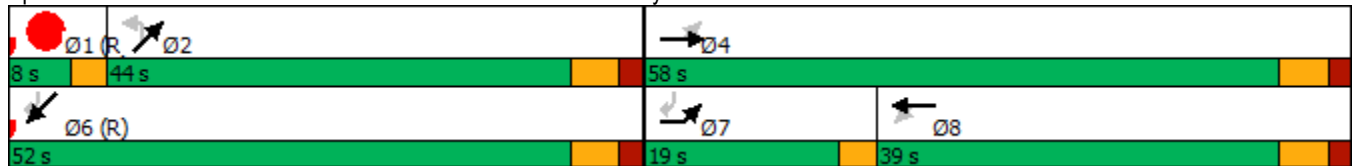


Lane Group	EBL	EBT	EBR	WBL	WBT	SBR2	NEL2	NET	NER	SWT	SWR	Ø1
Approach Delay		23.2			26.1			34.9		25.2		
Approach LOS		C			C			C		C		
Queue Length 50th (ft)	97	91		101	84	0	11	219		224		
Queue Length 95th (ft)	#171	120		m#192	m117	0	32	291		291		
Internal Link Dist (ft)		237			265			592		334		
Turn Bay Length (ft)	180						115					
Base Capacity (vph)	320	1690		170	749	858	181	993		1172		
Starvation Cap Reductn	0	0		0	28	0	0	0		215		
Spillback Cap Reductn	9	0		0	0	0	0	0		0		
Storage Cap Reductn	0	0		0	0	0	0	0		0		
Reduced v/c Ratio	0.74	0.34		0.86	0.72	0.00	0.13	0.72		0.78		

Intersection Summary

Area Type: CBD  
 Cycle Length: 110  
 Actuated Cycle Length: 110  
 Offset: 109 (99%), Referenced to phase 1:Hold and 6:SWT, Start of Green  
 Natural Cycle: 90  
 Control Type: Pretimed  
 Maximum v/c Ratio: 0.86  
 Intersection Signal Delay: 27.3  
 Intersection LOS: C  
 Intersection Capacity Utilization 105.0%  
 ICU Level of Service G  
 Analysis Period (min) 15  
 # 95th percentile volume exceeds capacity, queue may be longer.  
 Queue shown is maximum after two cycles.  
 m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 1: W. Columbus Ave. & W. 79th St. & S. Sawyer Ave.



Lanes, Volumes, Timings  
2: S. Kedzie Ave. & W. 79th St.

11/22/2017



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑	↑	↑	↑↑			↑↑			↑↑	
Traffic Volume (vph)	0	522	148	26	500	45	107	433	32	25	619	4
Future Volume (vph)	0	522	148	26	500	45	107	433	32	25	619	4
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Width (ft)	12	12	10	9	11	12	12	11	12	12	11	12
Storage Length (ft)	0		0	40		0	0		0	0		0
Storage Lanes	0		1	1		0	0		0	0		0
Taper Length (ft)	0			25			0			0		
Satd. Flow (prot)	0	2773	1206	1074	2541	0	0	2829	0	0	2849	0
Flt Permitted				0.439				0.581			0.906	
Satd. Flow (perm)	0	2773	1206	496	2541	0	0	1659	0	0	2587	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			161		9			7			1	
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		345			652			563			245	
Travel Time (s)		7.8			14.8			12.8			5.6	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	2%	11%	4%	29%	16%	12%	3%	3%	10%	0%	3%	0%
Bus Blockages (#/hr)	0	0	6	0	0	6	0	0	0	0	6	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	567	161	28	592	0	0	622	0	0	704	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		9			9			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.22	1.22	1.37	1.39	1.28	1.22	1.22	1.28	1.22	1.22	1.30	1.22
Turning Speed (mph)	15		9	15		9	15		9	15		9
Turn Type		NA	Perm	Perm	NA		pm+pt	NA		Perm	NA	
Protected Phases		4			8		5	2			6	
Permitted Phases			4	8			2			6		
Minimum Split (s)		23.0	23.0	23.0	23.0		9.0	34.0		34.0	34.0	
Total Split (s)		54.0	54.0	44.0	44.0		11.0	56.0		45.0	45.0	
Total Split (%)		49.1%	49.1%	40.0%	40.0%		10.0%	50.9%		40.9%	40.9%	
Yellow Time (s)		4.0	4.0	4.0	4.0		3.0	4.0		4.0	4.0	
All-Red Time (s)		1.0	1.0	1.0	1.0		0.0	2.0		2.0	2.0	
Lost Time Adjust (s)		1.0	1.0	1.0	1.0			1.0			1.0	
Total Lost Time (s)		6.0	6.0	6.0	6.0			7.0			7.0	
Lead/Lag				Lag	Lag		Lead			Lag	Lag	
Lead-Lag Optimize?												
Act Effect Green (s)		48.0	48.0	38.0	38.0			49.0			38.0	
Actuated g/C Ratio		0.44	0.44	0.35	0.35			0.45			0.35	
v/c Ratio		0.47	0.26	0.16	0.67			0.79			0.79	
Control Delay		11.8	1.1	28.2	34.7			33.5			10.1	
Queue Delay		0.2	0.0	0.0	0.0			0.0			0.2	
Total Delay		12.0	1.1	28.2	34.7			33.5			10.3	
LOS		B	A	C	C			C			B	
Approach Delay		9.6			34.4			33.5			10.3	

Lane Group	Ø7
Lane Configurations	
Traffic Volume (vph)	
Future Volume (vph)	
Ideal Flow (vphpl)	
Lane Width (ft)	
Storage Length (ft)	
Storage Lanes	
Taper Length (ft)	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Right Turn on Red	
Satd. Flow (RTOR)	
Link Speed (mph)	
Link Distance (ft)	
Travel Time (s)	
Peak Hour Factor	
Heavy Vehicles (%)	
Bus Blockages (#/hr)	
Shared Lane Traffic (%)	
Lane Group Flow (vph)	
Enter Blocked Intersection	
Lane Alignment	
Median Width(ft)	
Link Offset(ft)	
Crosswalk Width(ft)	
Two way Left Turn Lane	
Headway Factor	
Turning Speed (mph)	
Turn Type	
Protected Phases	7
Permitted Phases	
Minimum Split (s)	5.0
Total Split (s)	10.0
Total Split (%)	9%
Yellow Time (s)	3.0
All-Red Time (s)	0.0
Lost Time Adjust (s)	
Total Lost Time (s)	
Lead/Lag	Lead
Lead-Lag Optimize?	
Act Effct Green (s)	
Actuated g/C Ratio	
v/c Ratio	
Control Delay	
Queue Delay	
Total Delay	
LOS	
Approach Delay	

Lanes, Volumes, Timings  
 2: S. Kedzie Ave. & W. 79th St.

11/22/2017

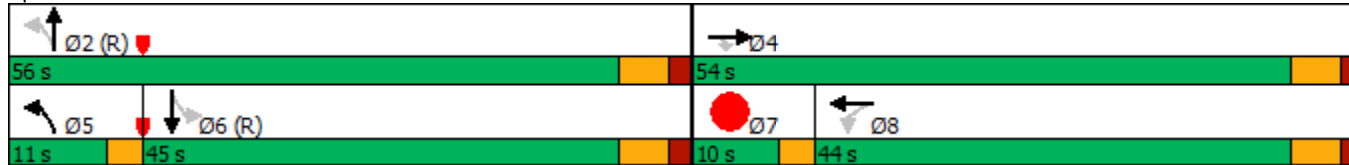


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Approach LOS		A			C			C			B	
Queue Length 50th (ft)		68	0	14	183			158			38	
Queue Length 95th (ft)		87	m2	37	247			211			46	
Internal Link Dist (ft)		265			572			483			165	
Turn Bay Length (ft)				40								
Base Capacity (vph)		1210	617	171	883			785			894	
Starvation Cap Reductn		171	0	0	0			0			17	
Spillback Cap Reductn		0	0	0	3			0			0	
Storage Cap Reductn		0	0	0	0			0			0	
Reduced v/c Ratio		0.55	0.26	0.16	0.67			0.79			0.80	

Intersection Summary

Area Type: CBD  
 Cycle Length: 110  
 Actuated Cycle Length: 110  
 Offset: 4 (4%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green  
 Natural Cycle: 75  
 Control Type: Pretimed  
 Maximum v/c Ratio: 0.79  
 Intersection Signal Delay: 21.1  
 Intersection LOS: C  
 Intersection Capacity Utilization 88.7%  
 ICU Level of Service E  
 Analysis Period (min) 15  
 m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 2: S. Kedzie Ave. & W. 79th St.



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Lane Group	Ø7
Approach LOS	
Queue Length 50th (ft)	
Queue Length 95th (ft)	
Internal Link Dist (ft)	
Turn Bay Length (ft)	
Base Capacity (vph)	
Starvation Cap Reductn	
Spillback Cap Reductn	
Storage Cap Reductn	
Reduced v/c Ratio	
Intersection Summary	

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Lanes, Volumes, Timings  
3: W. Columbus Ave. & S. Kedzie Ave.

11/22/2017



Lane Group	NBL	NBT	NBR	SBL	SBT	SBR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Traffic Volume (vph)	0	401	77	8	559	481	354	365	3	86	410	11
Future Volume (vph)	0	401	77	8	559	481	354	365	3	86	410	11
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Width (ft)	12	11	12	12	10	10	11	11	11	10	11	12
Storage Length (ft)	0		0	0		100	0		0	90		0
Storage Lanes	0		0	0		1	1		0	1		0
Taper Length (ft)	0			0			0			25		
Satd. Flow (prot)	0	2792	0	0	2742	1224	1417	2852	0	1422	2745	0
Flt Permitted					0.945		0.299			0.516		
Satd. Flow (perm)	0	2792	0	0	2594	1224	446	2852	0	772	2745	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		22				63		1			2	
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		245			494			414			680	
Travel Time (s)		5.6			11.2			9.4			15.5	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	0%	4%	4%	50%	4%	5%	5%	4%	33%	1%	8%	6%
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	520	0	0	617	523	385	400	0	93	458	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			11			11	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.22	1.28	1.22	1.22	1.33	1.33	1.28	1.28	1.28	1.33	1.28	1.22
Turning Speed (mph)	15		9	15		9	15		9	15		9
Turn Type		NA		Perm	NA	pm+ov	pm+pt	NA		Perm	NA	
Protected Phases		2			6	7	7	4				8
Permitted Phases	2			6		6	4			8		
Minimum Split (s)	28.0	28.0		28.0	28.0	8.0	8.0	26.0		26.0	26.0	
Total Split (s)	43.0	43.0		43.0	43.0	37.0	37.0	67.0		30.0	30.0	
Total Split (%)	39.1%	39.1%		39.1%	39.1%	33.6%	33.6%	60.9%		27.3%	27.3%	
Yellow Time (s)	4.0	4.0		4.0	4.0	3.0	3.0	4.0		4.0	4.0	
All-Red Time (s)	2.0	2.0		2.0	2.0	0.0	0.0	2.0		2.0	2.0	
Lost Time Adjust (s)		1.0			1.0	1.0	1.0	1.0		1.0	1.0	
Total Lost Time (s)		7.0			7.0	4.0	4.0	7.0		7.0	7.0	
Lead/Lag						Lead	Lead			Lag	Lag	
Lead-Lag Optimize?												
Act Effct Green (s)		36.0			36.0	76.0	63.0	60.0		23.0	23.0	
Actuated g/C Ratio		0.33			0.33	0.69	0.57	0.55		0.21	0.21	
v/c Ratio		0.56			0.73	0.60	0.71	0.26		0.58	0.80	
Control Delay		14.0			38.6	11.3	23.7	14.6		55.0	52.6	
Queue Delay		2.8			0.8	0.0	1.8	0.0		0.0	0.0	
Total Delay		16.8			39.4	11.3	25.5	14.6		55.0	52.6	
LOS		B			D	B	C	B		E	D	
Approach Delay		16.8			26.5			19.9			53.0	
Approach LOS		B			C			B			D	



Lanes, Volumes, Timings  
 3: W. Columbus Ave. & S. Kedzie Ave.

11/22/2017

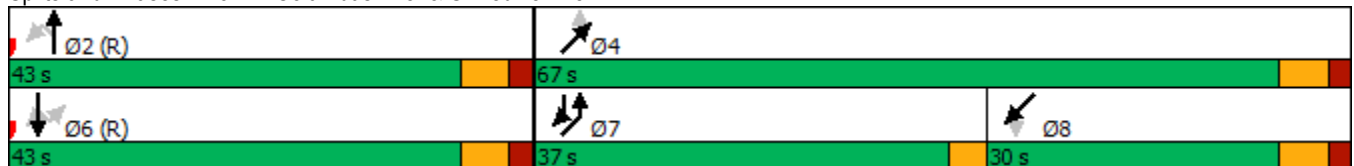


Lane Group	NBL	NBT	NBR	SBL	SBT	SBR	NEL	NET	NER	SWL	SWT	SWR
Queue Length 50th (ft)		35			201	152	210	110		60	162	
Queue Length 95th (ft)		m73			270	250	326	154		#126	#236	
Internal Link Dist (ft)		165			414			334			600	
Turn Bay Length (ft)						100				90		
Base Capacity (vph)		928			848	865	546	1556		161	575	
Starvation Cap Reductn		288			0	0	62	0		0	0	
Spillback Cap Reductn		0			63	0	0	0		0	0	
Storage Cap Reductn		0			0	0	0	0		0	0	
Reduced v/c Ratio		0.81			0.79	0.60	0.80	0.26		0.58	0.80	

Intersection Summary

























Area Type: CBD  
 Cycle Length: 110  
 Actuated Cycle Length: 110  
 Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green  
 Natural Cycle: 65  
 Control Type: Pretimed  
 Maximum v/c Ratio: 0.80  
 Intersection Signal Delay: 28.0 Intersection LOS: C  
 Intersection Capacity Utilization 84.9% ICU Level of Service E  
 Analysis Period (min) 15  
 # 95th percentile volume exceeds capacity, queue may be longer.  
 Queue shown is maximum after two cycles.  
 m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 3: W. Columbus Ave. & S. Kedzie Ave.



Lanes, Volumes, Timings  
4: Ashland Avenue & 79th Street

11/22/2017

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	75	379	30	63	439	67	62	368	57	48	826	96
Future Volume (vph)	75	379	30	63	439	67	62	368	57	48	826	96
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Width (ft)	9	10	9	9	10	9	10	11	11	10	11	11
Storage Length (ft)	80		30	60		30	100		30	100		30
Storage Lanes	1		1	1		1	1		1	1		1
Taper Length (ft)	25			25			25			25		
Satd. Flow (prot)	1385	1072	1152	1345	1189	1110	1282	2400	880	1355	2394	816
Flt Permitted	0.328			0.397			0.222			0.514		
Satd. Flow (perm)	470	1072	1071	547	1189	1047	292	2400	760	684	2394	691
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			50			50			50			50
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		666			1315			665			670	
Travel Time (s)		15.1			29.9			15.1			15.2	
Confl. Peds. (#/hr)	41		54	54		41	47		41	41		47
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Heavy Vehicles (%)	0%	10%	5%	3%	10%	9%	12%	6%	4%	6%	5%	9%
Bus Blockages (#/hr)	0	0	6	0	0	6	0	0	8	0	0	8
Parking (#/hr)		24			7			38	38		42	42
Shared Lane Traffic (%)												
Lane Group Flow (vph)	82	416	33	69	482	74	68	404	63	53	908	105
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			10			10	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.39	1.79	1.44	1.39	1.59	1.44	1.33	1.54	1.99	1.33	1.57	2.06
Turning Speed (mph)	15		9	15		9	15		9	15		9
Turn Type	Perm	NA	Perm	Perm	NA	Perm	Perm	NA	Perm	Perm	NA	Perm
Protected Phases		4			8			2			6	
Permitted Phases	4		4	8		8	2		2	6		6
Minimum Split (s)	38.0	38.0	38.0	38.0	38.0	38.0	27.0	27.0	27.0	27.0	27.0	27.0
Total Split (s)	54.0	54.0	54.0	54.0	54.0	54.0	56.0	56.0	56.0	56.0	56.0	56.0
Total Split (%)	49.1%	49.1%	49.1%	49.1%	49.1%	49.1%	50.9%	50.9%	50.9%	50.9%	50.9%	50.9%
Yellow Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
All-Red Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Lost Time Adjust (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Total Lost Time (s)	9.0	9.0	9.0	9.0	9.0	9.0	9.0	9.0	9.0	9.0	9.0	9.0
Lead/Lag												
Lead-Lag Optimize?												
Act Effct Green (s)	45.0	45.0	45.0	45.0	45.0	45.0	47.0	47.0	47.0	47.0	47.0	47.0
Actuated g/C Ratio	0.41	0.41	0.41	0.41	0.41	0.41	0.43	0.43	0.43	0.43	0.43	0.43
v/c Ratio	0.43	0.95	0.07	0.31	0.99	0.16	0.55	0.39	0.18	0.18	0.89	0.33
Control Delay	31.9	65.0	3.1	26.9	72.5	9.7	43.5	23.1	8.6	21.7	41.3	14.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	31.9	65.0	3.1	26.9	72.5	9.7	43.5	23.1	8.6	21.7	41.3	14.6

Lanes, Volumes, Timings  
 4: Ashland Avenue & 79th Street

11/22/2017

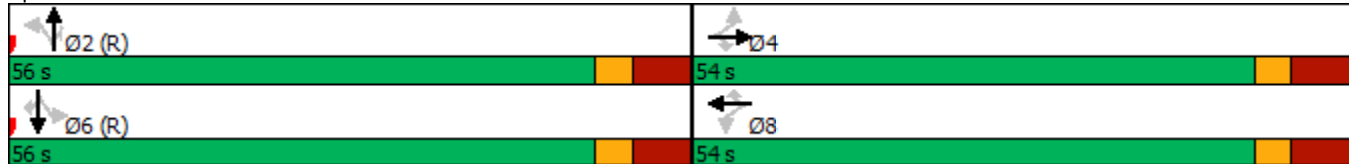


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
LOS	C	E	A	C	E	A	D	C	A	C	D	B
Approach Delay		56.1			60.0			24.0			37.7	
Approach LOS		E			E			C			D	
Queue Length 50th (ft)	41	279	0	32	333	10	35	101	5	23	304	24
Queue Length 95th (ft)	90	#483	12	71	#555	40	#101	143	33	52	#435	67
Internal Link Dist (ft)		586			1235			585			590	
Turn Bay Length (ft)	80		30	60		30	100		30	100		30
Base Capacity (vph)	192	438	467	223	486	457	124	1025	353	292	1022	323
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.43	0.95	0.07	0.31	0.99	0.16	0.55	0.39	0.18	0.18	0.89	0.33

Intersection Summary

Area Type: CBD  
 Cycle Length: 110  
 Actuated Cycle Length: 110  
 Offset: 65 (59%), Referenced to phase 2:NBT and 6:SBTL, Start of Green  
 Natural Cycle: 90  
 Control Type: Pretimed  
 Maximum v/c Ratio: 0.99  
 Intersection Signal Delay: 43.6  
 Intersection LOS: D  
 Intersection Capacity Utilization 124.7%  
 ICU Level of Service H  
 Analysis Period (min) 15  
 # 95th percentile volume exceeds capacity, queue may be longer.  
 Queue shown is maximum after two cycles.

Splits and Phases: 4: Ashland Avenue & 79th Street



# Lanes, Volumes, Timings

## 5: Loomis Blvd & 79th Street

11/22/2017

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	25	504	25	25	374	25	25	100	25	25	100	25
Future Volume (vph)	25	504	25	25	374	25	25	100	25	25	100	25
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (ft)	60		30	60		30	0		0	0		0
Storage Lanes	1		1	1		1	0		0	0		0
Taper Length (ft)	25			25			0			0		
Satd. Flow (prot)	1509	1429	1318	1509	1429	1350	0	1541	0	0	1541	0
Flt Permitted	0.438			0.320				0.946			0.946	
Satd. Flow (perm)	696	1429	1318	508	1429	1350	0	1469	0	0	1469	0
Right Turn on Red			Yes				Yes		Yes			Yes
Satd. Flow (RTOR)			12				16		17			17
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		1315			357			644			631	
Travel Time (s)		29.9			8.1			14.6			14.3	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Bus Blockages (#/hr)	0	0	6	0	0	0	0	0	0	0	0	0
Parking (#/hr)		0			0							
Shared Lane Traffic (%)												
Lane Group Flow (vph)	27	548	27	27	407	27	0	163	0	0	163	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.22	1.39	1.26	1.22	1.39	1.22	1.22	1.22	1.22	1.22	1.22	1.22
Turning Speed (mph)	15		9	15		9	15		9	15		9
Turn Type	Perm	NA	Perm	Perm	NA	Perm	Perm	NA		Perm	NA	
Protected Phases		4			8			2				6
Permitted Phases	4		4	8		8	2			6		
Minimum Split (s)	17.0	17.0	17.0	17.0	17.0	17.0	18.0	18.0		18.0	18.0	
Total Split (s)	37.0	37.0	37.0	37.0	37.0	37.0	28.0	28.0		28.0	28.0	
Total Split (%)	56.9%	56.9%	56.9%	56.9%	56.9%	56.9%	43.1%	43.1%		43.1%	43.1%	
Yellow Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	
All-Red Time (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Lost Time Adjust (s)	1.0	1.0	1.0	1.0	1.0	1.0		1.0			1.0	
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0		4.0			4.0	
Lead/Lag												
Lead-Lag Optimize?												
Act Effct Green (s)	33.0	33.0	33.0	33.0	33.0	33.0		24.0			24.0	
Actuated g/C Ratio	0.51	0.51	0.51	0.51	0.51	0.51		0.37			0.37	
v/c Ratio	0.08	0.76	0.04	0.11	0.56	0.04		0.29			0.29	
Control Delay	9.0	21.5	6.1	9.7	14.8	5.4		14.7			14.7	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0		0.0			0.0	
Total Delay	9.0	21.5	6.1	9.7	14.8	5.4		14.7			14.7	
LOS	A	C	A	A	B	A		B			B	
Approach Delay		20.2			13.9			14.7			14.7	
Approach LOS		C			B			B			B	

Lanes, Volumes, Timings  
5: Loomis Blvd & 79th Street

11/22/2017

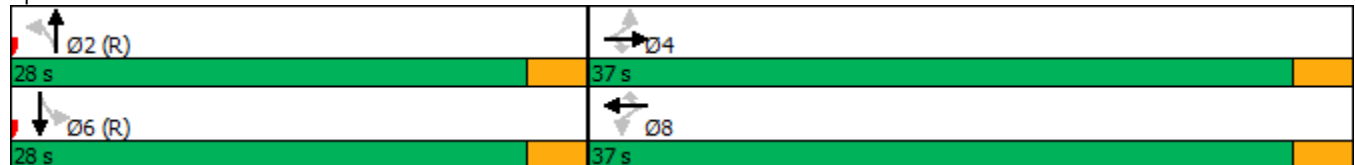


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Queue Length 50th (ft)	5	161	3	5	103	2		39			39	
Queue Length 95th (ft)	17	#330	13	18	181	13		81			81	
Internal Link Dist (ft)		1235			277			564			551	
Turn Bay Length (ft)	60		30	60		30						
Base Capacity (vph)	353	725	675	257	725	693		553			553	
Starvation Cap Reductn	0	0	0	0	0	0		0			0	
Spillback Cap Reductn	0	0	0	0	0	0		0			0	
Storage Cap Reductn	0	0	0	0	0	0		0			0	
Reduced v/c Ratio	0.08	0.76	0.04	0.11	0.56	0.04		0.29			0.29	

Intersection Summary

Area Type: CBD  
 Cycle Length: 65  
 Actuated Cycle Length: 65  
 Offset: 32 (49%), Referenced to phase 2:NBT and 6:SBTL, Start of Green  
 Natural Cycle: 50  
 Control Type: Pretimed  
 Maximum v/c Ratio: 0.76  
 Intersection Signal Delay: 16.8  
 Intersection LOS: B  
 Intersection Capacity Utilization 50.6%  
 ICU Level of Service A  
 Analysis Period (min) 15  
 # 95th percentile volume exceeds capacity, queue may be longer.  
 Queue shown is maximum after two cycles.

Splits and Phases: 5: Loomis Blvd & 79th Street



Lanes, Volumes, Timings  
6: Morgan Street & 79th Street

11/22/2017

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	25	511	25	25	398	25	25	100	25	25	100	25
Future Volume (vph)	25	511	25	25	398	25	25	100	25	25	100	25
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (ft)	100		30	100		30	0		0	0		0
Storage Lanes	1		1	1		1	0		0	0		0
Taper Length (ft)	25			25			0			0		
Satd. Flow (prot)	1509	1429	1350	1509	1414	1350	0	1541	0	0	1541	0
Flt Permitted	0.424			0.326				0.940			0.940	
Satd. Flow (perm)	673	1429	1350	518	1414	1350	0	1460	0	0	1460	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			13			13		13			13	
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		323			1321			593			659	
Travel Time (s)		7.3			30.0			13.5			15.0	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Parking (#/hr)		0			2							
Shared Lane Traffic (%)												
Lane Group Flow (vph)	27	555	27	27	433	27	0	163	0	0	163	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.22	1.39	1.22	1.22	1.41	1.22	1.22	1.22	1.22	1.22	1.22	1.22
Turning Speed (mph)	15		9	15		9	15		9	15		9
Turn Type	Perm	NA	Perm	Perm	NA	Perm	Perm	NA		Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4		4	8		8	2			6		
Minimum Split (s)	17.0	17.0	17.0	17.0	17.0	17.0	21.0	21.0		21.0	21.0	
Total Split (s)	50.0	50.0	50.0	50.0	50.0	50.0	35.0	35.0		35.0	35.0	
Total Split (%)	58.8%	58.8%	58.8%	58.8%	58.8%	58.8%	41.2%	41.2%		41.2%	41.2%	
Yellow Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0		1.0	1.0	
Lost Time Adjust (s)	1.0	1.0	1.0	1.0	1.0	1.0		1.0			1.0	
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0	5.0		5.0			5.0	
Lead/Lag												
Lead-Lag Optimize?												
Act Effct Green (s)	45.0	45.0	45.0	45.0	45.0	45.0		30.0			30.0	
Actuated g/C Ratio	0.53	0.53	0.53	0.53	0.53	0.53		0.35			0.35	
v/c Ratio	0.08	0.73	0.04	0.10	0.58	0.04		0.31			0.31	
Control Delay	10.6	22.6	6.7	5.0	8.4	1.7		20.4			20.4	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0		0.0			0.0	
Total Delay	10.6	22.6	6.7	5.0	8.4	1.7		20.4			20.4	
LOS	B	C	A	A	A	A		C			C	
Approach Delay		21.4			7.8			20.4			20.4	
Approach LOS		C			A			C			C	
Queue Length 50th (ft)	7	214	3	3	43	0		57			57	

Lanes, Volumes, Timings  
6: Morgan Street & 79th Street

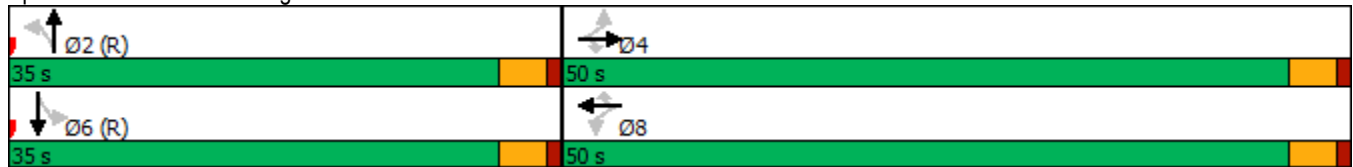
11/22/2017

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Queue Length 95th (ft)	20	349	15	m4	m66	m1		107			107	
Internal Link Dist (ft)		243			1241			513			579	
Turn Bay Length (ft)	100		30	100		30						
Base Capacity (vph)	356	756	720	274	748	720		523			523	
Starvation Cap Reductn	0	0	0	0	0	0		0			0	
Spillback Cap Reductn	0	0	0	0	0	0		0			0	
Storage Cap Reductn	0	0	0	0	0	0		0			0	
Reduced v/c Ratio	0.08	0.73	0.04	0.10	0.58	0.04		0.31			0.31	

Intersection Summary

Area Type: CBD  
 Cycle Length: 85  
 Actuated Cycle Length: 85  
 Offset: 80 (94%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green  
 Natural Cycle: 60  
 Control Type: Pretimed  
 Maximum v/c Ratio: 0.73  
 Intersection Signal Delay: 16.5 Intersection LOS: B  
 Intersection Capacity Utilization 54.0% ICU Level of Service A  
 Analysis Period (min) 15  
 m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 6: Morgan Street & 79th Street



Lanes, Volumes, Timings  
 7: Halsted Street & 79th Street

11/22/2017



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖	↑	↗	↖	↑	↗	↖	↑	↗	↖	↑	↗
Traffic Volume (vph)	53	463	70	74	382	38	78	313	83	73	594	53
Future Volume (vph)	53	463	70	74	382	38	78	313	83	73	594	53
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Width (ft)	9	10	9	9	10	9	10	11	13	10	10	13
Storage Length (ft)	100		30	60		30	100		100	100		100
Storage Lanes	1		1	1		1	1		1	1		1
Taper Length (ft)	25			25			25			25		
Satd. Flow (prot)	1385	1155	1215	1385	1221	1203	1436	1520	1368	1395	1426	1355
Flt Permitted	0.400			0.302			0.193			0.504		
Satd. Flow (perm)	583	1155	1215	440	1221	1203	292	1520	1368	740	1426	1355
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			51			51			90			51
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		1321			667			631			665	
Travel Time (s)		30.0			15.2			14.3			15.1	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	0%	10%	2%	0%	9%	3%	0%	3%	4%	3%	6%	5%
Parking (#/hr)		12			4							
Shared Lane Traffic (%)												
Lane Group Flow (vph)	58	503	76	80	415	41	85	340	90	79	646	58
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			10			10	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.39	1.64	1.39	1.39	1.56	1.39	1.33	1.28	1.18	1.33	1.33	1.18
Turning Speed (mph)	15		9	15		9	15		9	15		9
Turn Type	Perm	NA	Perm	Perm	NA	Perm	Perm	NA	Perm	Perm	NA	Perm
Protected Phases		4			8			2			6	
Permitted Phases	4		4	8		8	2		2	6		6
Minimum Split (s)	30.0	30.0	30.0	30.0	30.0	30.0	27.0	27.0	27.0	27.0	27.0	27.0
Total Split (s)	41.0	41.0	41.0	41.0	41.0	41.0	44.0	44.0	44.0	44.0	44.0	44.0
Total Split (%)	48.2%	48.2%	48.2%	48.2%	48.2%	48.2%	51.8%	51.8%	51.8%	51.8%	51.8%	51.8%
Yellow Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
All-Red Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lost Time Adjust (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Total Lost Time (s)	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0
Lead/Lag												
Lead-Lag Optimize?												
Act Effct Green (s)	33.0	33.0	33.0	33.0	33.0	33.0	36.0	36.0	36.0	36.0	36.0	36.0
Actuated g/C Ratio	0.39	0.39	0.39	0.39	0.39	0.39	0.42	0.42	0.42	0.42	0.42	0.42
v/c Ratio	0.26	1.12	0.15	0.47	0.88	0.08	0.69	0.53	0.14	0.25	1.07	0.10
Control Delay	14.0	99.6	6.3	30.7	46.0	4.5	52.8	21.9	4.1	18.6	83.7	5.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	14.0	99.6	6.3	30.7	46.0	4.5	52.8	21.9	4.1	18.6	83.7	5.8
LOS	B	F	A	C	D	A	D	C	A	B	F	A
Approach Delay		80.7			40.5			23.9			71.4	



Lanes, Volumes, Timings  
7: Halsted Street & 79th Street

11/22/2017



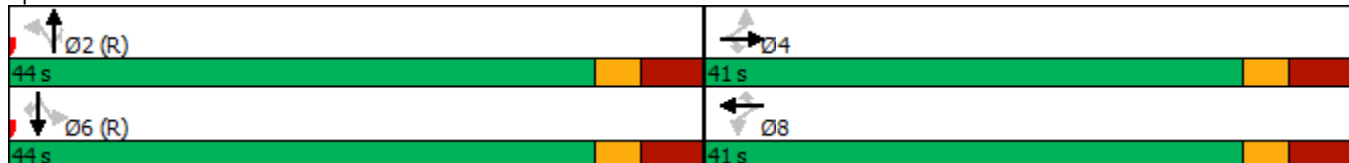
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Approach LOS	F			D			C			E		
Queue Length 50th (ft)	23	~320	17	31	201	0	36	131	0	26	~387	2
Queue Length 95th (ft)	m28	#514	m19	79	#375	16	#117	212	26	60	#590	24
Internal Link Dist (ft)	1241			587			551			585		
Turn Bay Length (ft)	100		30	60		30	100		100	100		100
Base Capacity (vph)	226	448	502	170	474	498	123	643	631	313	603	603
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.26	1.12	0.15	0.47	0.88	0.08	0.69	0.53	0.14	0.25	1.07	0.10

Intersection Summary

Area Type:	CBD
Cycle Length:	85
Actuated Cycle Length:	85
Offset:	40 (47%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
Natural Cycle:	130
Control Type:	Pretimed
Maximum v/c Ratio:	1.12
Intersection Signal Delay:	57.2
Intersection LOS:	E
Intersection Capacity Utilization:	127.7%
ICU Level of Service:	H
Analysis Period (min):	15

- ~ Volume exceeds capacity, queue is theoretically infinite.  
Queue shown is maximum after two cycles.
- # 95th percentile volume exceeds capacity, queue may be longer.  
Queue shown is maximum after two cycles.
- m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 7: Halsted Street & 79th Street



Lanes, Volumes, Timings  
8: 79th Street & 150 W.

11/22/2017



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Volume (vph)	10	733	10	10	424	10	10	10	10	10	10	10
Future Volume (vph)	10	733	10	10	424	10	10	10	10	10	10	10
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Satd. Flow (prot)	0	1425	0	0	1424	0	0	1492	0	0	1492	0
Flt Permitted		0.994			0.982			0.932			0.932	
Satd. Flow (perm)	0	1418	0	0	1399	0	0	1414	0	0	1414	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		2			3			11			11	
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		558			495			173			227	
Travel Time (s)		12.7			11.3			3.9			5.2	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Parking (#/hr)		0			0							
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	819	0	0	483	0	0	33	0	0	33	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			0			0	
Link Offset(ft)		0			0			0			-30	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.22	1.39	1.22	1.22	1.39	1.22	1.22	1.22	1.22	1.22	1.22	1.22
Turning Speed (mph)	15		9	15		9	15		9	15		9
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Minimum Split (s)	9.0	9.0		9.0	9.0		21.0	21.0		21.0	21.0	
Total Split (s)	62.0	62.0		62.0	62.0		23.0	23.0		23.0	23.0	
Total Split (%)	72.9%	72.9%		72.9%	72.9%		27.1%	27.1%		27.1%	27.1%	
Yellow Time (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
All-Red Time (s)	1.0	1.0		1.0	1.0		1.0	1.0		1.0	1.0	
Lost Time Adjust (s)		1.0			1.0			1.0			1.0	
Total Lost Time (s)		5.0			5.0			5.0			5.0	
Lead/Lag												
Lead-Lag Optimize?												
Act Effct Green (s)		57.0			57.0			18.0			18.0	
Actuated g/C Ratio		0.67			0.67			0.21			0.21	
v/c Ratio		0.86			0.51			0.11			0.11	
Control Delay		22.7			4.7			21.4			21.4	
Queue Delay		0.0			0.0			0.0			0.0	
Total Delay		22.7			4.7			21.4			21.4	
LOS		C			A			C			C	
Approach Delay		22.7			4.7			21.4			21.4	
Approach LOS		C			A			C			C	
Queue Length 50th (ft)		296			44			9			9	
Queue Length 95th (ft)		#606			68			33			33	
Internal Link Dist (ft)		478			415			93			147	
Turn Bay Length (ft)												

Lanes, Volumes, Timings  
8: 79th Street & 150 W.

11/22/2017

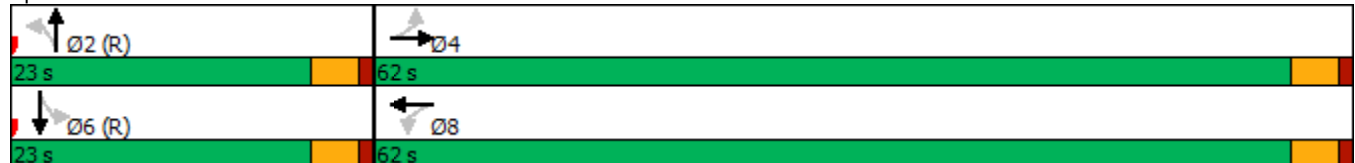


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Base Capacity (vph)		951			939			308			308	
Starvation Cap Reductn		0			0			0			0	
Spillback Cap Reductn		0			0			0			0	
Storage Cap Reductn		0			0			0			0	
Reduced v/c Ratio		0.86			0.51			0.11			0.11	

Intersection Summary

Area Type: CBD  
 Cycle Length: 85  
 Actuated Cycle Length: 85  
 Offset: 17 (20%), Referenced to phase 2:NBT and 6:SBTL, Start of Green  
 Natural Cycle: 70  
 Control Type: Pretimed  
 Maximum v/c Ratio: 0.86  
 Intersection Signal Delay: 16.3  
 Intersection LOS: B  
 Intersection Capacity Utilization 74.1%  
 ICU Level of Service D  
 Analysis Period (min) 15  
 # 95th percentile volume exceeds capacity, queue may be longer.  
 Queue shown is maximum after two cycles.

Splits and Phases: 8: 79th Street & 150 W.



Lanes, Volumes, Timings  
9: Lafayette Avenue & 79th Street

11/22/2017



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑↑↑		↔	↑↑					↔	↑↑↑↑	↔
Traffic Volume (vph)	0	577	193	239	439	0	0	0	0	165	1110	77
Future Volume (vph)	0	577	193	239	439	0	0	0	0	165	1110	77
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Width (ft)	11	11	11	12	12	12	12	12	12	12	10	8
Storage Length (ft)	100		0	0		0	0		0	0		0
Storage Lanes	2		0	1		0	0		0	1		1
Taper Length (ft)	25			0			0			0		
Satd. Flow (prot)	0	4318	0	1494	2557	0	0	0	0	1203	3674	978
Flt Permitted				0.237						0.950	0.999	
Satd. Flow (perm)	0	4318	0	348	2557	0	0	0	0	1203	3674	949
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		92										103
Link Speed (mph)		30			30			30				30
Link Distance (ft)		330			322			676				495
Travel Time (s)		7.5			7.3			15.4				11.3
Confl. Peds. (#/hr)	5		130	130		5	20					20
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	2%	9%	19%	3%	8%	2%	2%	2%	2%	10%	6%	22%
Bus Blockages (#/hr)	0	0	0	0	15	0	0	0	0	0	0	0
Parking (#/hr)					10							
Shared Lane Traffic (%)										10%		
Lane Group Flow (vph)	0	837	0	260	477	0	0	0	0	161	1225	84
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.28	1.28	1.28	1.22	1.40	1.22	1.22	1.22	1.22	1.22	1.33	1.46
Turning Speed (mph)	15		9	15		9	15		9	15		9
Turn Type		NA		pm+pt	NA					Perm	NA	Perm
Protected Phases		4		3	8						6	
Permitted Phases				8						6		6
Minimum Split (s)		20.0		8.0	26.0					33.0	33.0	33.0
Total Split (s)		28.0		23.0	51.0					34.0	34.0	34.0
Total Split (%)		32.9%		27.1%	60.0%					40.0%	40.0%	40.0%
Yellow Time (s)		3.0		3.0	3.0					3.0	3.0	3.0
All-Red Time (s)		5.0		0.0	5.0					2.0	2.0	2.0
Lost Time Adjust (s)		1.0		1.0	1.0					1.0	1.0	1.0
Total Lost Time (s)		9.0		4.0	9.0					6.0	6.0	6.0
Lead/Lag		Lag		Lead								
Lead-Lag Optimize?												
Act Effect Green (s)		19.0		47.0	42.0					28.0	28.0	28.0
Actuated g/C Ratio		0.22		0.55	0.49					0.33	0.33	0.33
v/c Ratio		0.81		0.58	0.38					0.41	1.01	0.22
Control Delay		35.2		11.9	5.8					25.9	58.8	4.7
Queue Delay		0.0		0.2	0.0					0.0	0.0	0.0
Total Delay		35.2		12.0	5.8					25.9	58.8	4.7

Lanes, Volumes, Timings  
 9: Lafayette Avenue & 79th Street

11/22/2017

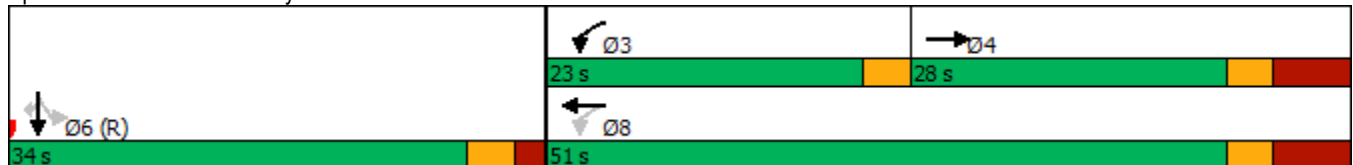


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
LOS		D		B	A					C	E	A
Approach Delay		35.2			8.0						52.1	
Approach LOS		D			A						D	
Queue Length 50th (ft)		83		52	56					76	~256	0
Queue Length 95th (ft)		m107		m83	m69					141	#364	23
Internal Link Dist (ft)		250			242			596			415	
Turn Bay Length (ft)												
Base Capacity (vph)		1036		448	1263					396	1210	381
Starvation Cap Reductn		0		14	0					0	0	0
Spillback Cap Reductn		0		0	0					0	0	0
Storage Cap Reductn		0		0	0					0	0	0
Reduced v/c Ratio		0.81		0.60	0.38					0.41	1.01	0.22

Intersection Summary

Area Type: CBD  
 Cycle Length: 85  
 Actuated Cycle Length: 85  
 Offset: 0 (0%), Referenced to phase 6:SBTL, Start of Green  
 Natural Cycle: 65  
 Control Type: Pretimed  
 Maximum v/c Ratio: 1.01  
 Intersection Signal Delay: 36.8 Intersection LOS: D  
 Intersection Capacity Utilization 70.0% ICU Level of Service C  
 Analysis Period (min) 15  
 ~ Volume exceeds capacity, queue is theoretically infinite.  
 Queue shown is maximum after two cycles.  
 # 95th percentile volume exceeds capacity, queue may be longer.  
 Queue shown is maximum after two cycles.  
 m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 9: Lafayette Avenue & 79th Street



Lanes, Volumes, Timings  
10: State Street & 79th Street

11/22/2017

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	330	412	0	0	386	152	292	212	214	0	0	0
Future Volume (vph)	330	412	0	0	386	152	292	212	214	0	0	0
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Width (ft)	12	12	12	12	12	12	12	11	16	12	12	12
Satd. Flow (prot)	2927	2649	0	0	2733	0	1373	2741	1530	0	0	0
Flt Permitted	0.240						0.950	0.981				
Satd. Flow (perm)	689	2649	0	0	2733	0	1363	2733	1314	0	0	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)					80				103			
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		322			463			632			634	
Travel Time (s)		7.3			10.5			14.4			14.4	
Confl. Peds. (#/hr)	82		240	240		82	8		145	145		8
Peak Hour Factor	0.89	0.90	0.92	0.92	0.90	0.78	0.91	0.95	0.78	0.92	0.92	0.92
Bus Blockages (#/hr)	0	15	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)		18										
Shared Lane Traffic (%)							45%					
Lane Group Flow (vph)	371	458	0	0	624	0	177	367	274	0	0	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		24			24			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.22	1.44	1.22	1.22	1.22	1.22	1.22	1.28	1.05	1.22	1.22	1.22
Turning Speed (mph)	15		9	15		9	15		9	15		9
Turn Type	pm+pt	NA			NA		Perm	NA	Perm			
Protected Phases	7	4			8			2				
Permitted Phases	4						2		2			
Minimum Split (s)	8.0	26.0			22.0		33.0	33.0	33.0			
Total Split (s)	24.0	52.0			28.0		33.0	33.0	33.0			
Total Split (%)	28.2%	61.2%			32.9%		38.8%	38.8%	38.8%			
Yellow Time (s)	3.0	3.0			3.0		3.0	3.0	3.0			
All-Red Time (s)	0.0	5.0			5.0		2.0	2.0	2.0			
Lost Time Adjust (s)	1.0	1.0			1.0		1.0	1.0	1.0			
Total Lost Time (s)	4.0	9.0			9.0		6.0	6.0	6.0			
Lead/Lag	Lead				Lag							
Lead-Lag Optimize?												
Act Effct Green (s)	48.0	43.0			19.0		27.0	27.0	27.0			
Actuated g/C Ratio	0.56	0.51			0.22		0.32	0.32	0.32			
v/c Ratio	0.41	0.34			0.93		0.41	0.42	0.56			
Control Delay	7.3	8.5			50.4		26.3	24.7	19.9			
Queue Delay	0.0	0.0			0.0		0.0	0.0	0.0			
Total Delay	7.3	8.5			50.4		26.3	24.7	19.9			
LOS	A	A			D		C	C	B			
Approach Delay		7.9			50.4			23.4				
Approach LOS		A			D			C				
Queue Length 50th (ft)	65	98			152		80	84	73			

Lanes, Volumes, Timings  
 10: State Street & 79th Street

11/22/2017

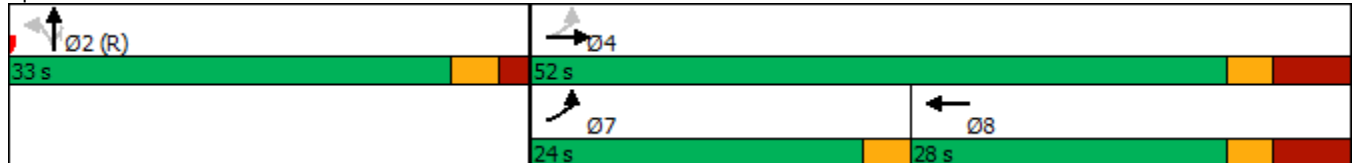


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Queue Length 95th (ft)	m71	m134			#258		143	125	117			
Internal Link Dist (ft)		242			383			552			554	
Turn Bay Length (ft)												
Base Capacity (vph)	915	1340			673		432	868	487			
Starvation Cap Reductn	0	0			0		0	0	0			
Spillback Cap Reductn	0	0			0		0	0	0			
Storage Cap Reductn	0	0			0		0	0	0			
Reduced v/c Ratio	0.41	0.34			0.93		0.41	0.42	0.56			

Intersection Summary

Area Type: CBD  
 Cycle Length: 85  
 Actuated Cycle Length: 85  
 Offset: 43 (51%), Referenced to phase 2:NBTL, Start of Green  
 Natural Cycle: 65  
 Control Type: Pretimed  
 Maximum v/c Ratio: 0.93  
 Intersection Signal Delay: 25.2 Intersection LOS: C  
 Intersection Capacity Utilization 70.0% ICU Level of Service C  
 Analysis Period (min) 15  
 # 95th percentile volume exceeds capacity, queue may be longer.  
 Queue shown is maximum after two cycles.  
 m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 10: State Street & 79th Street



Lanes, Volumes, Timings  
11: Indiana Avenue & 79th Street

11/22/2017

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑	↗		↖						↕	
Traffic Volume (vph)	0	394	88	25	388	0	0	0	0	25	25	69
Future Volume (vph)	0	394	88	25	388	0	0	0	0	25	25	69
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (ft)	0		30	0		0	0		0	0		0
Storage Lanes	0		1	0		0	0		0	0		0
Taper Length (ft)	0			0		0	0		0			0
Satd. Flow (prot)	0	1429	1339	0	1425	0	0	0	0	0	1450	0
Flt Permitted					0.963						0.990	
Satd. Flow (perm)	0	1429	1339	0	1377	0	0	0	0	0	1450	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			61									75
Link Speed (mph)		30			30			30				30
Link Distance (ft)		869			1306			665				683
Travel Time (s)		19.8			29.7			15.1				15.5
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Bus Blockages (#/hr)	0	0	2	0	0	0	0	0	0	0	0	0
Parking (#/hr)		0			0							
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	428	96	0	449	0	0	0	0	0	129	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		10			10			0				0
Link Offset(ft)		0			0			0				0
Crosswalk Width(ft)		16			16			16				16
Two way Left Turn Lane												
Headway Factor	1.22	1.39	1.24	1.22	1.39	1.22	1.22	1.22	1.22	1.22	1.22	1.22
Turning Speed (mph)	15		9	15		9	15		9	15		9
Turn Type		NA	Perm	Perm	NA					Perm	NA	
Protected Phases		4			8							6
Permitted Phases			4	8						6		
Minimum Split (s)		18.0	18.0	18.0	18.0					19.0	19.0	
Total Split (s)		42.0	42.0	42.0	42.0					23.0	23.0	
Total Split (%)		64.6%	64.6%	64.6%	64.6%					35.4%	35.4%	
Yellow Time (s)		3.0	3.0	3.0	3.0					3.0	3.0	
All-Red Time (s)		2.0	2.0	2.0	2.0					1.0	1.0	
Lost Time Adjust (s)		1.0	1.0		1.0							1.0
Total Lost Time (s)		6.0	6.0		6.0							5.0
Lead/Lag												
Lead-Lag Optimize?												
Act Effct Green (s)		36.0	36.0		36.0							18.0
Actuated g/C Ratio		0.55	0.55		0.55							0.28
v/c Ratio		0.54	0.12		0.59							0.28
Control Delay		12.5	3.8		4.6							10.9
Queue Delay		0.0	0.0		0.0							0.0
Total Delay		12.5	3.8		4.6							10.9
LOS		B	A		A							B
Approach Delay		10.9			4.6							10.9
Approach LOS		B			A							B



Lanes, Volumes, Timings  
 11: Indiana Avenue & 79th Street

11/22/2017



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Queue Length 50th (ft)		98	6		27							16
Queue Length 95th (ft)		171	24		m34							54
Internal Link Dist (ft)		789			1226			585				603
Turn Bay Length (ft)			30									
Base Capacity (vph)		791	768		762							455
Starvation Cap Reductn		0	0		0							0
Spillback Cap Reductn		0	0		0							0
Storage Cap Reductn		0	0		0							0
Reduced v/c Ratio		0.54	0.13		0.59							0.28

Intersection Summary

Area Type: CBD  
 Cycle Length: 65  
 Actuated Cycle Length: 65  
 Offset: 32 (49%), Referenced to phase 6:SBTL, Start of Green  
 Natural Cycle: 50  
 Control Type: Pretimed  
 Maximum v/c Ratio: 0.59  
 Intersection Signal Delay: 8.3  
 Intersection LOS: A  
 Intersection Capacity Utilization 69.7%  
 ICU Level of Service C  
 Analysis Period (min) 15  
 m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 11: Indiana Avenue & 79th Street



# Lanes, Volumes, Timings

## 12: King Dr & 79th Street

11/22/2017



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	29	337	48	56	404	41	59	282	52	58	525	18
Future Volume (vph)	29	337	48	56	404	41	59	282	52	58	525	18
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Width (ft)	10	10	10	10	10	10	10	10	10	10	10	10
Storage Length (ft)	75		30	60		30	60		30	50		50
Storage Lanes	1		1	1		1	1		1	1		1
Taper Length (ft)	25			25			25			25		
Satd. Flow (prot)	1408	1156	1260	1408	1275	1260	1408	1482	1260	1408	1482	1260
Flt Permitted	0.400			0.476			0.223			0.507		
Satd. Flow (perm)	562	1156	1086	659	1275	1095	325	1482	1116	708	1482	1163
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			30			22			38			34
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		1306			1333			676			668	
Travel Time (s)		29.7			30.3			15.4			15.2	
Confl. Peds. (#/hr)	73		78	78		73	36		59	59		36
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Parking (#/hr)		24			8							
Shared Lane Traffic (%)												
Lane Group Flow (vph)	32	366	52	61	439	45	64	307	57	63	571	20
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		10			10			10			10	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.33	1.79	1.33	1.33	1.60	1.33	1.33	1.33	1.33	1.33	1.33	1.33
Turning Speed (mph)	15		9	15		9	15		9	15		9
Turn Type	Perm	NA	Perm	Perm	NA	Perm	Perm	NA	Perm	Perm	NA	Perm
Protected Phases		4			8			2			6	
Permitted Phases	4		4	8		8	2		2	6		6
Minimum Split (s)	26.0	26.0	26.0	26.0	26.0	26.0	24.0	24.0	24.0	24.0	24.0	24.0
Total Split (s)	34.0	34.0	34.0	34.0	34.0	34.0	31.0	31.0	31.0	31.0	31.0	31.0
Total Split (%)	52.3%	52.3%	52.3%	52.3%	52.3%	52.3%	47.7%	47.7%	47.7%	47.7%	47.7%	47.7%
Yellow Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Total Lost Time (s)	6.0	6.0	6.0	6.0	6.0	6.0	5.0	5.0	5.0	5.0	5.0	5.0
Lead/Lag												
Lead-Lag Optimize?												
Act Effct Green (s)	28.0	28.0	28.0	28.0	28.0	28.0	26.0	26.0	26.0	26.0	26.0	26.0
Actuated g/C Ratio	0.43	0.43	0.43	0.43	0.43	0.43	0.40	0.40	0.40	0.40	0.40	0.40
v/c Ratio	0.13	0.74	0.11	0.22	0.80	0.09	0.49	0.52	0.12	0.22	0.96	0.04
Control Delay	5.9	20.0	3.0	9.7	25.8	3.8	31.0	18.6	7.1	15.5	51.7	3.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	5.9	20.0	3.0	9.7	25.8	3.8	31.0	18.6	7.1	15.5	51.7	3.3
LOS	A	B	A	A	C	A	C	B	A	B	D	A
Approach Delay		17.0			22.2			19.0			46.7	

Lanes, Volumes, Timings  
12: King Dr & 79th Street

11/22/2017

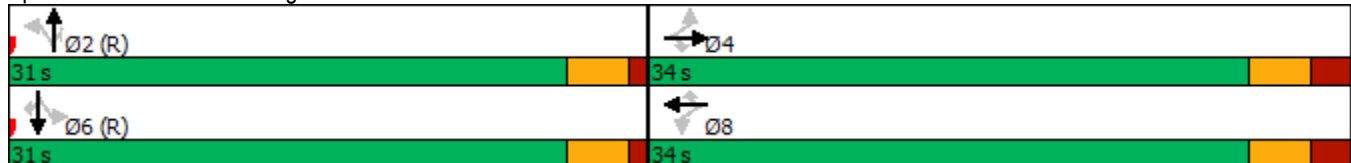


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Approach LOS	B			C			B			D		
Queue Length 50th (ft)	5	129	6	15	154	5	18	89	4	16	213	0
Queue Length 95th (ft)	m8	#260	m8	m31	#307	m11	#69	158	24	41	#408	8
Internal Link Dist (ft)	1226			1253			596			588		
Turn Bay Length (ft)	75		30	60		30	60		30	50		50
Base Capacity (vph)	242	497	484	283	549	484	130	592	469	283	592	485
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.13	0.74	0.11	0.22	0.80	0.09	0.49	0.52	0.12	0.22	0.96	0.04

Intersection Summary

Area Type: CBD  
 Cycle Length: 65  
 Actuated Cycle Length: 65  
 Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green  
 Natural Cycle: 70  
 Control Type: Pretimed  
 Maximum v/c Ratio: 0.96  
 Intersection Signal Delay: 28.1 Intersection LOS: C  
 Intersection Capacity Utilization 109.8% ICU Level of Service H  
 Analysis Period (min) 15  
 # 95th percentile volume exceeds capacity, queue may be longer.  
 Queue shown is maximum after two cycles.  
 m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 12: King Dr & 79th Street



Lanes, Volumes, Timings  
 13: St Lawrence Avenue & 79th Street

11/22/2017



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↑	↗		↕				
Traffic Volume (vph)	25	386	0	0	363	25	25	100	25	0	0	0
Future Volume (vph)	25	386	0	0	363	25	25	100	25	0	0	0
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (ft)	0		30	0		30	0		0	0		0
Storage Lanes	0		0	0		1	0		0	0		0
Taper Length (ft)	0			0			0			0		
Satd. Flow (prot)	0	1425	0	0	1429	1350	0	1541	0	0	0	0
Flt Permitted		0.967						0.992				
Satd. Flow (perm)	0	1382	0	0	1429	1350	0	1541	0	0	0	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)						20		15				
Link Speed (mph)		30			30			30				30
Link Distance (ft)		1333			660			688				650
Travel Time (s)		30.3			15.0			15.6				14.8
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Parking (#/hr)		0			0							
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	447	0	0	395	27	0	163	0	0	0	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		10			10			0				0
Link Offset(ft)		0			0			0				0
Crosswalk Width(ft)		16			16			16				16
Two way Left Turn Lane												
Headway Factor	1.22	1.39	1.22	1.22	1.39	1.22	1.22	1.22	1.22	1.22	1.22	1.22
Turning Speed (mph)	15		9	15		9	15		9	15		9
Turn Type	Perm	NA			NA	Perm	Perm	NA				
Protected Phases		4			8			2				
Permitted Phases	4					8	2					
Minimum Split (s)	16.0	16.0			16.0	16.0	17.0	17.0				
Total Split (s)	43.0	43.0			43.0	43.0	22.0	22.0				
Total Split (%)	66.2%	66.2%			66.2%	66.2%	33.8%	33.8%				
Yellow Time (s)	3.0	3.0			3.0	3.0	3.0	3.0				
All-Red Time (s)	1.0	1.0			1.0	1.0	1.0	1.0				
Lost Time Adjust (s)		1.0			1.0	1.0		1.0				
Total Lost Time (s)		5.0			5.0	5.0		5.0				
Lead/Lag												
Lead-Lag Optimize?												
Act Effct Green (s)		38.0			38.0	38.0		17.0				
Actuated g/C Ratio		0.58			0.58	0.58		0.26				
v/c Ratio		0.55			0.47	0.03		0.39				
Control Delay		6.0			10.1	3.4		21.3				
Queue Delay		0.0			0.0	0.0		0.0				
Total Delay		6.0			10.1	3.4		21.3				
LOS		A			B	A		C				
Approach Delay		6.0			9.7			21.3				
Approach LOS		A			A			C				
Queue Length 50th (ft)		38			80	1		48				

Lanes, Volumes, Timings  
 13: St Lawrence Avenue & 79th Street

11/22/2017



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Queue Length 95th (ft)		m61			140	10		97				
Internal Link Dist (ft)		1253			580			608			570	
Turn Bay Length (ft)						30						
Base Capacity (vph)		807			835	797		414				
Starvation Cap Reductn		0			0	0		0				
Spillback Cap Reductn		0			0	0		0				
Storage Cap Reductn		0			0	0		0				
Reduced v/c Ratio		0.55			0.47	0.03		0.39				

Intersection Summary

Area Type: CBD  
 Cycle Length: 65  
 Actuated Cycle Length: 65  
 Offset: 32 (49%), Referenced to phase 2:NBTL, Start of Green  
 Natural Cycle: 45  
 Control Type: Pretimed  
 Maximum v/c Ratio: 0.55  
 Intersection Signal Delay: 9.9  
 Intersection Capacity Utilization 67.0%  
 Analysis Period (min) 15  
 Intersection LOS: A  
 ICU Level of Service C  
 m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 13: St Lawrence Avenue & 79th Street



Lanes, Volumes, Timings  
 14: Kenwood Avenue & 79th Street

11/22/2017



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	165	25	25	210	0	0	0	0	25	100	25
Future Volume (vph)	0	165	25	25	210	0	0	0	0	25	100	25
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Satd. Flow (prot)	0	1404	0	0	1580	0	0	0	0	0	1541	0
Flt Permitted					0.962						0.992	
Satd. Flow (perm)	0	1404	0	0	1528	0	0	0	0	0	1541	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		19										16
Link Speed (mph)		30			30			30				30
Link Distance (ft)		344			1665			665				649
Travel Time (s)		7.8			37.8			15.1				14.8
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Parking (#/hr)		0										
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	206	0	0	255	0	0	0	0	0	163	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			0				0
Link Offset(ft)		0			0			0				0
Crosswalk Width(ft)		16			16			16				16
Two way Left Turn Lane												
Headway Factor	1.22	1.39	1.22	1.22	1.22	1.22	1.22	1.22	1.22	1.22	1.22	1.22
Turning Speed (mph)	15		9	15		9	15		9	15		9
Turn Type		NA		Perm	NA					Perm		NA
Protected Phases		4			8							6
Permitted Phases				8						6		
Minimum Split (s)		16.0		16.0	16.0					17.0	17.0	
Total Split (s)		41.0		41.0	41.0					24.0	24.0	
Total Split (%)		63.1%		63.1%	63.1%					36.9%	36.9%	
Yellow Time (s)		3.0		3.0	3.0					3.0	3.0	
All-Red Time (s)		1.0		1.0	1.0					1.0	1.0	
Lost Time Adjust (s)		1.0			1.0							1.0
Total Lost Time (s)		5.0			5.0							5.0
Lead/Lag												
Lead-Lag Optimize?												
Act Effct Green (s)		36.0			36.0							19.0
Actuated g/C Ratio		0.55			0.55							0.29
v/c Ratio		0.26			0.30							0.35
Control Delay		7.9			13.1							19.0
Queue Delay		0.0			0.0							0.0
Total Delay		7.9			13.1							19.0
LOS		A			B							B
Approach Delay		7.9			13.1							19.0
Approach LOS		A			B							B
Queue Length 50th (ft)		35			89							45
Queue Length 95th (ft)		68			m93							92
Internal Link Dist (ft)		264			1585			585				569
Turn Bay Length (ft)												

Lanes, Volumes, Timings  
 14: Kenwood Avenue & 79th Street

11/22/2017



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Base Capacity (vph)		786			846							461
Starvation Cap Reductn		0			0							0
Spillback Cap Reductn		0			0							0
Storage Cap Reductn		0			0							0
Reduced v/c Ratio		0.26			0.30							0.35

Intersection Summary

Area Type:	CBD
Cycle Length:	65
Actuated Cycle Length:	65
Offset:	32 (49%), Referenced to phase 6:SBTL, Start of Green
Natural Cycle:	40
Control Type:	Pretimed
Maximum v/c Ratio:	0.35
Intersection Signal Delay:	12.9
Intersection LOS:	B
Intersection Capacity Utilization:	49.9%
ICU Level of Service:	A
Analysis Period (min):	15
m Volume for 95th percentile queue is metered by upstream signal.	

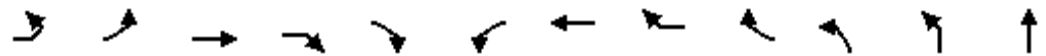
Splits and Phases: 14: Kenwood Avenue & 79th Street



Lanes, Volumes, Timings

15: Stony Island Avenue & South Chicago Avenue & 79th Street

11/22/2017




Lane Group	EBL2	EBL	EBT	EBR	EBR2	WBL	WBT	WBR	WBR2	NBL2	NBL	NBT
Lane Configurations												
Traffic Volume (vph)	3	30	157	29	15	79	176	55	33	13	82	825
Future Volume (vph)	3	30	157	29	15	79	176	55	33	13	82	825
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (ft)		100		100		175		150			90	
Storage Lanes		1		1		1		1			1	
Taper Length (ft)		25				25					25	
Satd. Flow (prot)	0	1509	1588	1350	0	1509	1342	1350	0	0	1509	4336
Flt Permitted		0.334				0.409					0.950	
Satd. Flow (perm)	0	530	1588	1350	0	650	1342	1350	0	0	1509	4336
Right Turn on Red					Yes				Yes			
Satd. Flow (RTOR)				134				134				
Link Speed (mph)			30				30					30
Link Distance (ft)			1665				377					254
Travel Time (s)			37.8				8.6					5.8
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Parking (#/hr)							11					
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	35	165	47	0	83	185	93	0	0	100	868
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Right	Left	Left	Right	Right	Left	Left	Left
Median Width(ft)			12				12					12
Link Offset(ft)			0				0					0
Crosswalk Width(ft)			16				16					16
Two way Left Turn Lane												
Headway Factor	1.22	1.22	1.22	1.22	1.22	1.22	1.50	1.22	1.22	1.22	1.22	1.22
Turning Speed (mph)	15	15		9	9	15		9	9	15	15	
Turn Type	Perm	Perm	NA	Perm		Perm	NA	Perm		Prot	Prot	NA
Protected Phases			4				8			5	5	2
Permitted Phases	4	4		4		8		8				
Minimum Split (s)	21.0	21.0	21.0	21.0		21.0	21.0	21.0		8.0	8.0	34.0
Total Split (s)	21.0	21.0	21.0	21.0		21.0	21.0	21.0		11.0	11.0	49.0
Total Split (%)	16.2%	16.2%	16.2%	16.2%		16.2%	16.2%	16.2%		8.5%	8.5%	37.7%
Yellow Time (s)	3.0	3.0	3.0	3.0		3.0	3.0	3.0		3.0	3.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0		2.0	2.0	2.0		0.0	0.0	3.0
Lost Time Adjust (s)		1.0	1.0	1.0		1.0	1.0	1.0			1.0	1.0
Total Lost Time (s)		6.0	6.0	6.0		6.0	6.0	6.0			4.0	8.0
Lead/Lag										Lead	Lead	Lag
Lead-Lag Optimize?												
Act Effct Green (s)		15.0	15.0	15.0		15.0	15.0	15.0			7.0	41.0
Actuated g/C Ratio		0.12	0.12	0.12		0.12	0.12	0.12			0.05	0.32
v/c Ratio		0.57	0.90	0.17		1.11	1.20	0.34			1.23	0.63
Control Delay		87.3	98.8	3.5		164.7	168.8	14.7			225.1	40.6
Queue Delay		0.0	0.0	0.0		0.0	0.0	0.0			0.0	0.0
Total Delay		87.3	98.8	3.5		164.7	168.8	14.7			225.1	40.6
LOS		F	F	A		F	F	B			F	D
Approach Delay			79.1				128.2					54.9
Approach LOS			E				F					D
Queue Length 50th (ft)		28	140	0		~82	~194	15			~104	228



Lanes, Volumes, Timings  
 15: Stony Island Avenue & South Chicago Avenue & 79th Street

11/22/2017

															
Lane Group	NBR	NBR2	SBL2	SBL	SBT	SBR	SBR2	SET	SER	SER2	NWT	NWR			
Lane Configurations	←←		←←		↓	→→		→→		→→		→			
Traffic Volume (vph)	83	3	26	152	1643	161	13	389	181	5	225	38			
Future Volume (vph)	83	3	26	152	1643	161	13	389	181	5	225	38			
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800			
Storage Length (ft)	130			0			0			0					
Storage Lanes	2			1			1			0					
Taper Length (ft)				0											
Satd. Flow (prot)	1350	0	0	1509	4336	1350	0	2870	0	0	2948	0			
Flt Permitted				0.950											
Satd. Flow (perm)	1350	0	0	1509	4336	1350	0	2870	0	0	2948	0			
Right Turn on Red	Yes						Yes			Yes					
Satd. Flow (RTOR)	117						92			1					
Link Speed (mph)				30			30			30					
Link Distance (ft)				675			738			886					
Travel Time (s)				15.3			16.8			20.1					
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95			
Parking (#/hr)															
Shared Lane Traffic (%)															
Lane Group Flow (vph)	90	0	0	187	1729	183	0	605	0	0	279	0			
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No			
Lane Alignment	Right	Right	Left	Left	Left	Right	Right	Left	Right	Right	Left	Right			
Median Width(ft)				12			0			0					
Link Offset(ft)				0			0			0					
Crosswalk Width(ft)				16			16			16					
Two way Left Turn Lane															
Headway Factor	1.22	1.22	1.22	1.22	1.22	1.22	1.22	1.22	1.22	1.22	1.22	1.22			
Turning Speed (mph)	9	9	15	15		9	9		9	9		9			
Turn Type	Perm		Prot		Prot		NA		Perm		NA				
Protected Phases			1		1		6				10				
Permitted Phases	2						6								
Minimum Split (s)	34.0		8.0		8.0		45.0		45.0		31.0				
Total Split (s)	49.0		29.0		29.0		67.0		67.0		31.0				
Total Split (%)	37.7%		22.3%		22.3%		51.5%		51.5%		23.8%				
Yellow Time (s)	4.0		3.0		3.0		4.0		4.0		4.0				
All-Red Time (s)	3.0		0.0		0.0		3.0		3.0		2.0				
Lost Time Adjust (s)	1.0				1.0		1.0		1.0		1.0				
Total Lost Time (s)	8.0				4.0		8.0		8.0		7.0				
Lead/Lag	Lag		Lead		Lead		Lag		Lag						
Lead-Lag Optimize?															
Act Effct Green (s)	41.0			25.0			59.0			59.0			24.0		
Actuated g/C Ratio	0.32			0.19			0.45			0.45			0.18		
v/c Ratio	0.18			0.64			0.88			0.28			1.14		
Control Delay	3.3			59.8			38.6			11.8			131.4		
Queue Delay	0.0			0.0			0.0			0.0			0.0		
Total Delay	3.3			59.8			38.6			11.8			131.4		
LOS	A			E			D			B			F		
Approach Delay				38.2			131.4			51.6					
Approach LOS				D			F			D					
Queue Length 50th (ft)	0			147			475			44			~313		

Lanes, Volumes, Timings  
 15: Stony Island Avenue & South Chicago Avenue & 79th Street

11/22/2017

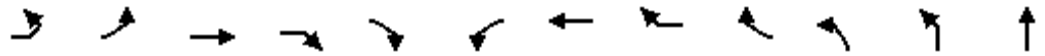


Lane Group	NWR2
Lane Configurations	
Traffic Volume (vph)	2
Future Volume (vph)	2
Ideal Flow (vphpl)	1800
Storage Length (ft)	
Storage Lanes	
Taper Length (ft)	
Satd. Flow (prot)	0
Flt Permitted	
Satd. Flow (perm)	0
Right Turn on Red	Yes
Satd. Flow (RTOR)	
Link Speed (mph)	
Link Distance (ft)	
Travel Time (s)	
Peak Hour Factor	0.95
Parking (#/hr)	
Shared Lane Traffic (%)	
Lane Group Flow (vph)	0
Enter Blocked Intersection	No
Lane Alignment	Right
Median Width(ft)	
Link Offset(ft)	
Crosswalk Width(ft)	
Two way Left Turn Lane	
Headway Factor	1.22
Turning Speed (mph)	9
Turn Type	
Protected Phases	
Permitted Phases	
Minimum Split (s)	
Total Split (s)	
Total Split (%)	
Yellow Time (s)	
All-Red Time (s)	
Lost Time Adjust (s)	
Total Lost Time (s)	
Lead/Lag	
Lead-Lag Optimize?	
Act Effct Green (s)	
Actuated g/C Ratio	
v/c Ratio	
Control Delay	
Queue Delay	
Total Delay	
LOS	
Approach Delay	
Approach LOS	
Queue Length 50th (ft)	

Lanes, Volumes, Timings

15: Stony Island Avenue & South Chicago Avenue & 79th Street

11/22/2017

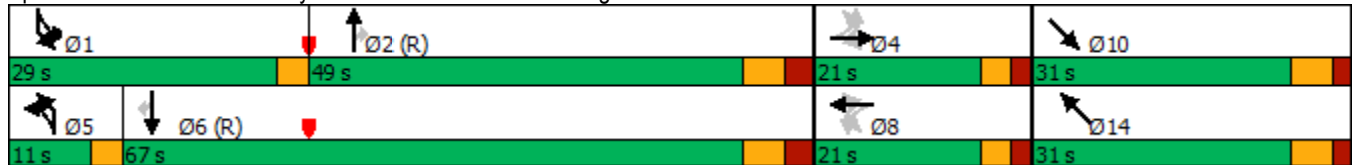


Lane Group	EBL2	EBL	EBT	EBR	EBR2	WBL	WBT	WBR	WBR2	NBL2	NBL	NBT
Queue Length 95th (ft)		#82	#277	4		m#134	m#302	m28			#223	278
Internal Link Dist (ft)			1585				297					174
Turn Bay Length (ft)		100		100		175		150			90	
Base Capacity (vph)		61	183	274		75	154	274			81	1367
Starvation Cap Reductn		0	0	0		0	0	0			0	0
Spillback Cap Reductn		0	0	0		0	0	0			0	0
Storage Cap Reductn		0	0	0		0	0	0			0	0
Reduced v/c Ratio		0.57	0.90	0.17		1.11	1.20	0.34			1.23	0.63

Intersection Summary

Area Type: CBD  
 Cycle Length: 130  
 Actuated Cycle Length: 130  
 Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBT, Start of Green  
 Natural Cycle: 125  
 Control Type: Pretimed  
 Maximum v/c Ratio: 1.23  
 Intersection Signal Delay: 64.1 Intersection LOS: E  
 Intersection Capacity Utilization 116.7% ICU Level of Service H  
 Analysis Period (min) 15  
 ~ Volume exceeds capacity, queue is theoretically infinite.  
 Queue shown is maximum after two cycles.  
 # 95th percentile volume exceeds capacity, queue may be longer.  
 Queue shown is maximum after two cycles.  
 m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 15: Stony Island Avenue & South Chicago Avenue & 79th Street



Lanes, Volumes, Timings

15: Stony Island Avenue & South Chicago Avenue & 79th Street

11/22/2017



Lane Group	NBR	NBR2	SBL2	SBL	SBT	SBR	SBR2	SET	SER	SER2	NWT	NWR
Queue Length 95th (ft)	23			231	548	96		#436			160	
Internal Link Dist (ft)					595			658			806	
Turn Bay Length (ft)	130											
Base Capacity (vph)	505			290	1967	662		530			544	
Starvation Cap Reductn	0			0	0	0		0			0	
Spillback Cap Reductn	0			0	0	0		0			0	
Storage Cap Reductn	0			0	0	0		0			0	
Reduced v/c Ratio	0.18			0.64	0.88	0.28		1.14			0.51	
Intersection Summary												



Lane Group	NWR2
Queue Length 95th (ft)	
Internal Link Dist (ft)	
Turn Bay Length (ft)	
Base Capacity (vph)	
Starvation Cap Reductn	
Spillback Cap Reductn	
Storage Cap Reductn	
Reduced v/c Ratio	
Intersection Summary	

Lanes, Volumes, Timings  
 16: 79th Street & Cregier Avenue

11/22/2017



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	25	205	0	0	318	25	25	100	25	0	0	0
Future Volume (vph)	25	205	0	0	318	25	25	100	25	0	0	0
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Satd. Flow (prot)	0	1417	0	0	1572	0	0	1541	0	0	0	0
Flt Permitted		0.936						0.992				
Satd. Flow (perm)	0	1333	0	0	1572	0	0	1541	0	0	0	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)					6			24				
Link Speed (mph)		30			30			30				30
Link Distance (ft)		946			328			89				655
Travel Time (s)		21.5			7.5			2.0				14.9
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Bus Blockages (#/hr)	0	1	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)		0										
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	250	0	0	373	0	0	163	0	0	0	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			0				0
Link Offset(ft)		0			0			0				0
Crosswalk Width(ft)		16			16			16				16
Two way Left Turn Lane												
Headway Factor	1.22	1.40	1.22	1.22	1.22	1.22	1.22	1.22	1.22	1.22	1.22	1.22
Turning Speed (mph)	15		9	15		9	15		9	15		9
Turn Type	Perm	NA			NA		Perm	NA				
Protected Phases		4			8			2				
Permitted Phases	4						2					
Minimum Split (s)	19.0	19.0			19.0		23.0	23.0				
Total Split (s)	25.0	25.0			25.0		40.0	40.0				
Total Split (%)	38.5%	38.5%			38.5%		61.5%	61.5%				
Yellow Time (s)	3.0	3.0			3.0		3.0	3.0				
All-Red Time (s)	1.0	1.0			1.0		1.0	1.0				
Lost Time Adjust (s)		1.0			1.0			1.0				
Total Lost Time (s)		5.0			5.0			5.0				
Lead/Lag												
Lead-Lag Optimize?												
Act Effct Green (s)		20.0			20.0			35.0				
Actuated g/C Ratio		0.31			0.31			0.54				
v/c Ratio		0.61			0.77			0.19				
Control Delay		30.6			32.9			7.3				
Queue Delay		0.0			0.0			0.0				
Total Delay		30.6			32.9			7.3				
LOS		C			C			A				
Approach Delay		30.6			32.9			7.3				
Approach LOS		C			C			A				
Queue Length 50th (ft)		117			130			26				
Queue Length 95th (ft)		m149			#258			53				
Internal Link Dist (ft)		866			248			9				575

Lanes, Volumes, Timings  
 16: 79th Street & Cregier Avenue

11/22/2017

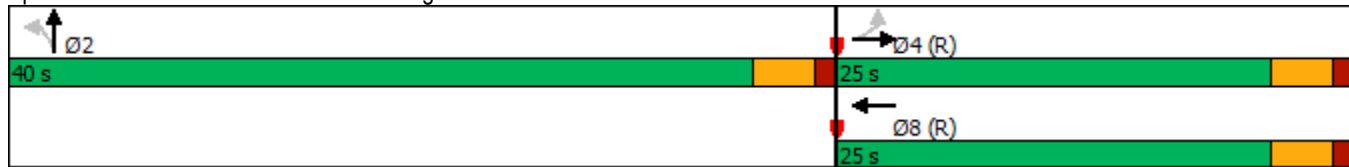


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Bay Length (ft)												
Base Capacity (vph)		410			487			840				
Starvation Cap Reductn		0			0			0				
Spillback Cap Reductn		0			0			0				
Storage Cap Reductn		0			0			0				
Reduced v/c Ratio		0.61			0.77			0.19				

Intersection Summary

Area Type: CBD  
 Cycle Length: 65  
 Actuated Cycle Length: 65  
 Offset: 0 (0%), Referenced to phase 4:EBTL and 8:WBT, Start of Green  
 Natural Cycle: 45  
 Control Type: Pretimed  
 Maximum v/c Ratio: 0.77  
 Intersection Signal Delay: 26.8 Intersection LOS: C  
 Intersection Capacity Utilization 61.4% ICU Level of Service B  
 Analysis Period (min) 15  
 # 95th percentile volume exceeds capacity, queue may be longer.  
 Queue shown is maximum after two cycles.  
 m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 16: 79th Street & Cregier Avenue



Lanes, Volumes, Timings  
 58: Paulina Street & 79th Street

11/22/2017

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑			↑			↕			↕	
Traffic Volume (vph)	0	540	0	0	419	0	8	0	28	29	0	5
Future Volume (vph)	0	540	0	0	419	0	8	0	28	29	0	5
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Satd. Flow (prot)	0	1306	0	0	1274	0	0	1393	0	0	1434	0
Flt Permitted								0.989			0.962	
Satd. Flow (perm)	0	1306	0	0	1274	0	0	1393	0	0	1434	0
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		648			666			663			663	
Travel Time (s)		14.7			15.1			15.1			15.1	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.67	0.92	0.70	0.66	0.92	0.42
Heavy Vehicles (%)	2%	11%	2%	2%	10%	2%	0%	2%	4%	7%	2%	0%
Bus Blockages (#/hr)	0	0	0	0	0	6	0	0	0	0	0	0
Parking (#/hr)		1			7							
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	587	0	0	455	0	0	52	0	0	56	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		9			9			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.22	1.40	1.22	1.22	1.46	1.22	1.22	1.22	1.22	1.22	1.22	1.22
Turning Speed (mph)	15		9	15		9	15		9	15		9
Sign Control		Stop			Stop			Stop			Stop	
<b>Intersection Summary</b>												
Area Type:	CBD											
Control Type:	Unsignalized											
Intersection Capacity Utilization	48.5%						ICU Level of Service A					
Analysis Period (min)	15											



Lanes, Volumes, Timings  
69: Union Avenue & 79th Street

11/22/2017

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	25	518	0	0	523	16	2	8	8	0	0	0
Future Volume (vph)	25	518	0	0	523	16	2	8	8	0	0	0
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Satd. Flow (prot)	0	1311	0	0	1323	0	0	1515	0	0	0	0
Flt Permitted		0.996						0.993				
Satd. Flow (perm)	0	1311	0	0	1323	0	0	1515	0	0	0	0
Link Speed (mph)		30			30			30				30
Link Distance (ft)		667			332			660				661
Travel Time (s)		15.2			7.5			15.0				15.0
Peak Hour Factor	0.52	0.95	0.92	0.92	0.96	0.50	0.50	0.67	0.67	0.92	0.92	0.92
Heavy Vehicles (%)	8%	11%	2%	2%	10%	0%	0%	0%	0%	2%	2%	2%
Parking (#/hr)		0			0							
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	593	0	0	577	0	0	28	0	0	0	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		9			9			0				0
Link Offset(ft)		0			0			0				0
Crosswalk Width(ft)		16			16			16				16
Two way Left Turn Lane												
Headway Factor	1.22	1.39	1.22	1.22	1.39	1.22	1.22	1.22	1.22	1.22	1.22	1.22
Turning Speed (mph)	15		9	15		9	15		9	15		9
Sign Control		Stop			Stop			Stop				Stop

Intersection Summary

Area Type:	CBD
Control Type:	Unsignalized
Intersection Capacity Utilization	67.5%
ICU Level of Service	C
Analysis Period (min)	15

**Synchro Reports -  
Existing Volumes  
Existing Geometry  
Optimized**

# **AM Reports**

Lanes, Volumes, Timings  
 1: W. Columbus Ave. & W. 79th St. & S. Sawyer Ave.

11/22/2017



Lane Group	EBL	EBT	EBR	WBL	WBT	SBR2	NEL2	NET	NER	SWT	SWR	Ø1
Lane Configurations	↙	↑↑↑		↙	↑↑	↙	↙	↑↑		↑↑		
Traffic Volume (vph)	277	424	6	97	314	3	1	777	120	479	133	
Future Volume (vph)	277	424	6	97	314	3	1	777	120	479	133	
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	
Lane Width (ft)	9	11	9	10	12	12	12	12	12	11	11	
Storage Length (ft)	180		100	0					0		0	
Storage Lanes	1		1	1					0		0	
Taper Length (ft)	75			0								
Satd. Flow (prot)	1248	3644	0	1306	2577	1401	1539	2925	0	2736	0	
Flt Permitted	0.416			0.474			0.311					
Satd. Flow (perm)	546	3644	0	652	2577	1401	504	2925	0	2736	0	
Right Turn on Red			Yes			Yes			Yes			
Satd. Flow (RTOR)		3				229		20				
Link Speed (mph)		30			30			30		30		
Link Distance (ft)		965			345			696		414		
Travel Time (s)		21.9			7.8			15.8		9.4		
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	
Heavy Vehicles (%)	11%	13%	0%	10%	18%	0%	0%	3%	4%	3%	13%	
Bus Blockages (#/hr)	0	0	6	0	6	0	0	0	0	0	0	
Parking (#/hr)		2										
Shared Lane Traffic (%)												
Lane Group Flow (vph)	301	468	0	105	341	3	1	975	0	666	0	
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Right	
Median Width(ft)		14			10			12		12		
Link Offset(ft)		0			0			0		0		
Crosswalk Width(ft)		16			16			16		16		
Two way Left Turn Lane												
Headway Factor	1.39	1.34	1.39	1.33	1.24	1.22	1.22	1.22	1.22	1.28	1.28	
Turning Speed (mph)	15		9	15		9	15		9		9	
Turn Type	pm+pt	NA		Perm	NA	Perm	Perm	NA		NA		
Protected Phases	7	4			8			2		6		1
Permitted Phases	4			8		6 7	2					
Minimum Split (s)	8.5	33.0		33.0	33.0		44.0	44.0		45.0		5.5
Total Split (s)	17.0	50.0		33.0	33.0		44.0	44.0		50.0		6.0
Total Split (%)	17.0%	50.0%		33.0%	33.0%		44.0%	44.0%		50.0%		6%
Yellow Time (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0		3.0
All-Red Time (s)	0.5	0.5		0.5	0.5		0.5	0.5		0.5		0.5
Lost Time Adjust (s)	1.0	1.0		1.0	1.0		1.0	1.0		1.0		1.0
Total Lost Time (s)	4.5	4.5		4.5	4.5		4.5	4.5		4.5		4.5
Lead/Lag	Lead			Lag	Lag		Lead	Lead				Lag
Lead-Lag Optimize?	Yes			Yes	Yes		Yes	Yes				Yes
Act Effct Green (s)	45.5	45.5		28.5	28.5	62.5	39.5	39.5		45.5		
Actuated g/C Ratio	0.46	0.46		0.28	0.28	0.62	0.40	0.40		0.46		
v/c Ratio	0.90	0.28		0.57	0.46	0.00	0.01	0.84		0.54		
Control Delay	52.6	17.5		27.5	17.3	0.0	19.0	34.5		13.1		
Queue Delay	6.3	0.0		0.0	0.0	0.0	0.0	0.0		0.4		
Total Delay	58.9	17.5		27.5	17.3	0.0	19.0	34.5		13.5		
LOS	E	B		C	B	A	B	C		B		

Lanes, Volumes, Timings  
 1: W. Columbus Ave. & W. 79th St. & S. Sawyer Ave.

11/22/2017

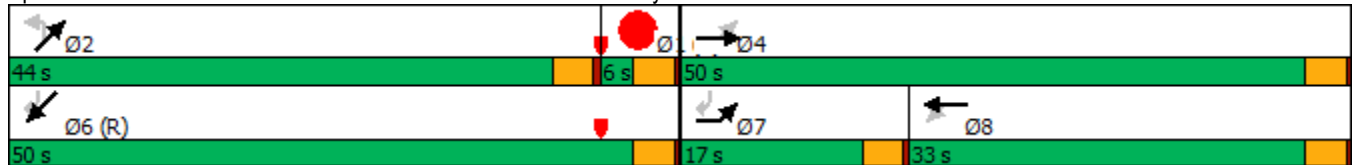


Lane Group	EBL	EBT	EBR	WBL	WBT	SBR2	NEL2	NET	NER	SWT	SWR	Ø1
Approach Delay		33.7			19.7			34.5		13.5		
Approach LOS		C			B			C		B		
Queue Length 50th (ft)	134	65		22	37	0	0	284		84		
Queue Length 95th (ft)	#301	90		#52	61	0	4	372		113		
Internal Link Dist (ft)		885			265			616		334		
Turn Bay Length (ft)	180						115					
Base Capacity (vph)	336	1659		185	734	961	199	1167		1244		
Starvation Cap Reductn	0	0		0	0	0	0	0		194		
Spillback Cap Reductn	18	0		0	0	0	0	0		0		
Storage Cap Reductn	0	0		0	0	0	0	0		0		
Reduced v/c Ratio	0.95	0.28		0.57	0.46	0.00	0.01	0.84		0.63		

Intersection Summary

Area Type: CBD  
 Cycle Length: 100  
 Actuated Cycle Length: 100  
 Offset: 31 (31%), Referenced to phase 1:Hold and 6:SWT, Start of Green  
 Natural Cycle: 95  
 Control Type: Pretimed  
 Maximum v/c Ratio: 0.90  
 Intersection Signal Delay: 27.1  
 Intersection LOS: C  
 Intersection Capacity Utilization 98.8%  
 ICU Level of Service F  
 Analysis Period (min) 15  
 # 95th percentile volume exceeds capacity, queue may be longer.  
 Queue shown is maximum after two cycles.

Splits and Phases: 1: W. Columbus Ave. & W. 79th St. & S. Sawyer Ave.



Lanes, Volumes, Timings  
 2: S. Kedzie Ave. & W. 79th St.

11/22/2017



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑	↗	↖	↑↑			↔			↔	
Traffic Volume (vph)	0	461	83	7	326	36	81	527	21	8	401	4
Future Volume (vph)	0	461	83	7	326	36	81	527	21	8	401	4
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Width (ft)	12	12	10	9	11	12	12	11	12	12	11	12
Storage Length (ft)	0		0	40		0	0		0	0		0
Storage Lanes	0		1	1		0	0		0	0		0
Taper Length (ft)	0			25			0			0		
Satd. Flow (prot)	0	2773	1206	1074	2535	0	0	2851	0	0	2851	0
Flt Permitted				0.446				0.812			0.942	
Satd. Flow (perm)	0	2773	1206	504	2535	0	0	2329	0	0	2688	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			90		12			6			1	
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		345			652			668			245	
Travel Time (s)		7.8			14.8			15.2			5.6	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	2%	11%	4%	29%	16%	12%	3%	3%	10%	0%	3%	0%
Bus Blockages (#/hr)	0	0	6	0	0	6	0	0	0	0	6	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	501	90	8	393	0	0	684	0	0	449	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		9			9			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.22	1.22	1.37	1.39	1.28	1.22	1.22	1.28	1.22	1.22	1.30	1.22
Turning Speed (mph)	15		9	15		9	15		9	15		9
Turn Type		NA	Perm	Perm	NA		pm+pt	NA		Perm	NA	
Protected Phases		4			8		5	2			6	
Permitted Phases			4	8			2			6		
Minimum Split (s)		23.0	23.0	23.0	23.0		9.5	34.0		34.0	34.0	
Total Split (s)		38.5	38.5	33.0	33.0		9.5	61.5		52.0	52.0	
Total Split (%)		38.5%	38.5%	33.0%	33.0%		9.5%	61.5%		52.0%	52.0%	
Yellow Time (s)		3.0	3.0	3.0	3.0		3.0	3.0		3.0	3.0	
All-Red Time (s)		0.5	0.5	0.5	0.5		0.5	0.5		0.5	0.5	
Lost Time Adjust (s)		1.0	1.0	1.0	1.0			1.0			1.0	
Total Lost Time (s)		4.5	4.5	4.5	4.5			4.5			4.5	
Lead/Lag				Lag	Lag		Lead			Lag	Lag	
Lead-Lag Optimize?				Yes	Yes		Yes			Yes	Yes	
Act Effct Green (s)		34.0	34.0	28.5	28.5			57.0			47.5	
Actuated g/C Ratio		0.34	0.34	0.28	0.28			0.57			0.48	
v/c Ratio		0.53	0.19	0.06	0.54			0.50			0.35	
Control Delay		20.5	2.9	27.6	32.5			14.0			1.5	
Queue Delay		0.2	0.0	0.0	0.0			0.8			0.1	
Total Delay		20.7	2.9	27.6	32.5			14.8			1.6	
LOS		C	A	C	C			B			A	
Approach Delay		18.0			32.4			14.8			1.6	

Lane Group	Ø7
Lane Configurations	
Traffic Volume (vph)	
Future Volume (vph)	
Ideal Flow (vphpl)	
Lane Width (ft)	
Storage Length (ft)	
Storage Lanes	
Taper Length (ft)	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Right Turn on Red	
Satd. Flow (RTOR)	
Link Speed (mph)	
Link Distance (ft)	
Travel Time (s)	
Peak Hour Factor	
Heavy Vehicles (%)	
Bus Blockages (#/hr)	
Shared Lane Traffic (%)	
Lane Group Flow (vph)	
Enter Blocked Intersection	
Lane Alignment	
Median Width(ft)	
Link Offset(ft)	
Crosswalk Width(ft)	
Two way Left Turn Lane	
Headway Factor	
Turning Speed (mph)	
Turn Type	
Protected Phases	7
Permitted Phases	
Minimum Split (s)	5.5
Total Split (s)	5.5
Total Split (%)	6%
Yellow Time (s)	3.0
All-Red Time (s)	0.5
Lost Time Adjust (s)	
Total Lost Time (s)	
Lead/Lag	Lead
Lead-Lag Optimize?	Yes
Act Effct Green (s)	
Actuated g/C Ratio	
v/c Ratio	
Control Delay	
Queue Delay	
Total Delay	
LOS	
Approach Delay	

Lanes, Volumes, Timings  
 2: S. Kedzie Ave. & W. 79th St.

11/22/2017



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Approach LOS		B			C			B			A	
Queue Length 50th (ft)		146	7	4	107			120			10	
Queue Length 95th (ft)		m195	m11	16	156			162			6	
Internal Link Dist (ft)		265			572			588			165	
Turn Bay Length (ft)				40								
Base Capacity (vph)		942	469	143	731			1356			1277	
Starvation Cap Reductn		84	0	0	0			0			98	
Spillback Cap Reductn		0	0	0	0			359			0	
Storage Cap Reductn		0	0	0	0			0			0	
Reduced v/c Ratio		0.58	0.19	0.06	0.54			0.69			0.38	

Intersection Summary

Area Type: CBD  
 Cycle Length: 100  
 Actuated Cycle Length: 100  
 Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green  
 Natural Cycle: 75  
 Control Type: Pretimed  
 Maximum v/c Ratio: 0.54  
 Intersection Signal Delay: 16.2  
 Intersection LOS: B  
 Intersection Capacity Utilization 72.9%  
 ICU Level of Service C  
 Analysis Period (min) 15  
 m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 2: S. Kedzie Ave. & W. 79th St.





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Lane Group	Ø7
Approach LOS	
Queue Length 50th (ft)	
Queue Length 95th (ft)	
Internal Link Dist (ft)	
Turn Bay Length (ft)	
Base Capacity (vph)	
Starvation Cap Reductn	
Spillback Cap Reductn	
Storage Cap Reductn	
Reduced v/c Ratio	
Intersection Summary	

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Lanes, Volumes, Timings  
3: W. Columbus Ave. & S. Kedzie Ave.

11/22/2017



Lane Group	NBL	NBT	NBR	SBL	SBT	SBR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations		↕↕			↕↕	↗	↖	↕↕		↖	↕↕	
Traffic Volume (vph)	1	452	110	6	348	353	449	602	3	62	258	48
Future Volume (vph)	1	452	110	6	348	353	449	602	3	62	258	48
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Width (ft)	12	11	12	12	10	10	11	11	11	10	11	12
Storage Length (ft)	0		0	0		100	0		0	90		0
Storage Lanes	0		0	0		1	1		0	1		0
Taper Length (ft)	0			0			0			25		
Satd. Flow (prot)	0	2778	0	0	2738	1224	1417	2854	0	1422	2699	0
Flt Permitted		0.955			0.944		0.381			0.402		
Satd. Flow (perm)	0	2653	0	0	2587	1224	568	2854	0	602	2699	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		30				214		1				20
Link Speed (mph)		30			30			30				30
Link Distance (ft)		245			494			414				728
Travel Time (s)		5.6			11.2			9.4				16.5
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	0%	4%	4%	50%	4%	5%	5%	4%	33%	1%	8%	6%
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	612	0	0	385	384	488	657	0	67	332	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			11			11	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.22	1.28	1.22	1.22	1.33	1.33	1.28	1.28	1.28	1.33	1.28	1.22
Turning Speed (mph)	15		9	15		9	15		9	15		9
Turn Type	Perm	NA		Perm	NA	pm+ov	pm+pt	NA		Perm	NA	
Protected Phases		2			6	7	7	4				8
Permitted Phases	2			6		6	4			8		
Minimum Split (s)	28.0	28.0		28.0	28.0	8.5	8.5	26.0		26.0	26.0	
Total Split (s)	34.0	34.0		34.0	34.0	39.0	39.0	66.0		27.0	27.0	
Total Split (%)	34.0%	34.0%		34.0%	34.0%	39.0%	39.0%	66.0%		27.0%	27.0%	
Yellow Time (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0		3.0	3.0	
All-Red Time (s)	0.5	0.5		0.5	0.5	0.5	0.5	0.5		0.5	0.5	
Lost Time Adjust (s)		1.0			1.0	1.0	1.0	1.0		1.0	1.0	
Total Lost Time (s)		4.5			4.5	4.5	4.5	4.5		4.5	4.5	
Lead/Lag						Lead	Lead			Lag	Lag	
Lead-Lag Optimize?						Yes	Yes			Yes	Yes	
Act Effct Green (s)		29.5			29.5	68.5	61.5	61.5		22.5	22.5	
Actuated g/C Ratio		0.30			0.30	0.68	0.62	0.62		0.22	0.22	
v/c Ratio		0.76			0.50	0.42	0.76	0.37		0.50	0.53	
Control Delay		26.2			32.0	4.3	32.1	16.9		48.2	35.6	
Queue Delay		2.4			0.0	0.0	3.2	0.0		0.0	0.0	
Total Delay		28.6			32.0	4.3	35.3	16.9		48.2	35.6	
LOS		C			C	A	D	B		D	D	
Approach Delay		28.6			18.2			24.8			37.8	
Approach LOS		C			B			C			D	

Lanes, Volumes, Timings  
 3: W. Columbus Ave. & S. Kedzie Ave.

11/22/2017



Lane Group	NBL	NBT	NBR	SBL	SBT	SBR	NEL	NET	NER	SWL	SWT	SWR
Queue Length 50th (ft)		180			106	35	264	133		38	92	
Queue Length 95th (ft)		247			153	78	m321	m178		85	138	
Internal Link Dist (ft)		165			414			334			648	
Turn Bay Length (ft)						100				90		
Base Capacity (vph)		803			763	905	642	1755		135	622	
Starvation Cap Reductn		95			0	0	80	0		0	0	
Spillback Cap Reductn		0			0	0	0	0		0	0	
Storage Cap Reductn		0			0	0	0	0		0	0	
Reduced v/c Ratio		0.86			0.50	0.42	0.87	0.37		0.50	0.53	

Intersection Summary

Area Type:	CBD
Cycle Length:	100
Actuated Cycle Length:	100
Offset:	12 (12%), Referenced to phase 2:NBT and 6:SBTL, Start of Green
Natural Cycle:	80
Control Type:	Pretimed
Maximum v/c Ratio:	0.76
Intersection Signal Delay:	25.6
Intersection LOS:	C
Intersection Capacity Utilization	76.7%
ICU Level of Service	D
Analysis Period (min)	15
m Volume for 95th percentile queue is metered by upstream signal.	

Splits and Phases: 3: W. Columbus Ave. & S. Kedzie Ave.



# Lanes, Volumes, Timings

## 4: Ashland Avenue & 79th Street

11/22/2017



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↙	↑	↗	↙	↑	↗	↙	↑↑	↗	↙	↑↑	↗
Traffic Volume (vph)	95	465	42	35	336	53	51	630	55	34	372	44
Future Volume (vph)	95	465	42	35	336	53	51	630	55	34	372	44
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Width (ft)	9	10	9	9	10	9	10	11	11	10	11	11
Storage Length (ft)	80		30	60		30	100		30	100		30
Storage Lanes	1		1	1		1	1		1	1		1
Taper Length (ft)	25			25			25			25		
Satd. Flow (prot)	1385	1141	1152	1345	1189	1110	1282	2400	880	1355	2394	816
Flt Permitted	0.536			0.389			0.512			0.325		
Satd. Flow (perm)	769	1141	1099	542	1189	1067	660	2400	802	452	2394	735
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			84			84			84			84
Link Speed (mph)		30			30			30				30
Link Distance (ft)		664			1315			665				670
Travel Time (s)		15.1			29.9			15.1				15.2
Confl. Peds. (#/hr)	41		54	54		41	47		41	41		47
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Heavy Vehicles (%)	0%	10%	5%	3%	10%	9%	12%	6%	4%	6%	5%	9%
Bus Blockages (#/hr)	0	0	6	0	0	6	0	0	8	0	0	8
Parking (#/hr)		14			7			38	38		42	42
Shared Lane Traffic (%)												
Lane Group Flow (vph)	104	511	46	38	369	58	56	692	60	37	409	48
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			10				10
Link Offset(ft)		0			0			0				0
Crosswalk Width(ft)		16			16			16				16
Two way Left Turn Lane												
Headway Factor	1.39	1.67	1.44	1.39	1.59	1.44	1.33	1.54	1.99	1.33	1.57	2.06
Turning Speed (mph)	15		9	15		9	15		9	15		9
Turn Type	Perm	NA	Perm	Perm	NA	Perm	Perm	NA	Perm	Perm	NA	Perm
Protected Phases		4			8			2			6	
Permitted Phases	4		4	8		8	2		2	6		6
Minimum Split (s)	38.0	38.0	38.0	38.0	38.0	38.0	27.0	27.0	27.0	27.0	27.0	27.0
Total Split (s)	38.0	38.0	38.0	38.0	38.0	38.0	27.0	27.0	27.0	27.0	27.0	27.0
Total Split (%)	58.5%	58.5%	58.5%	58.5%	58.5%	58.5%	41.5%	41.5%	41.5%	41.5%	41.5%	41.5%
Yellow Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
All-Red Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Lost Time Adjust (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Total Lost Time (s)	9.0	9.0	9.0	9.0	9.0	9.0	9.0	9.0	9.0	9.0	9.0	9.0
Lead/Lag												
Lead-Lag Optimize?												
Act Effct Green (s)	29.0	29.0	29.0	29.0	29.0	29.0	18.0	18.0	18.0	18.0	18.0	18.0
Actuated g/C Ratio	0.45	0.45	0.45	0.45	0.45	0.45	0.28	0.28	0.28	0.28	0.28	0.28
v/c Ratio	0.30	1.00	0.09	0.16	0.70	0.11	0.31	1.04	0.21	0.30	0.62	0.18
Control Delay	14.6	63.0	1.4	12.9	23.3	2.2	24.1	72.9	4.9	26.1	25.3	3.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	14.6	63.0	1.4	12.9	23.3	2.2	24.1	72.9	4.9	26.1	25.3	3.6

Lanes, Volumes, Timings  
 4: Ashland Avenue & 79th Street

11/22/2017

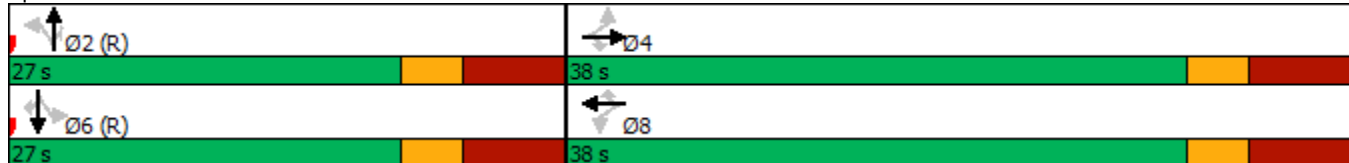


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
LOS	B	E	A	B	C	A	C	E	A	C	C	A
Approach Delay		51.1			19.8			64.4			23.2	
Approach LOS		D			B			E			C	
Queue Length 50th (ft)	25	~194	0	9	112	0	17	~160	0	12	73	0
Queue Length 95th (ft)	59	#385	7	26	#219	11	47	#258	17	37	117	11
Internal Link Dist (ft)		584			1235			585			590	
Turn Bay Length (ft)	80		30	60		30	100		30	100		30
Base Capacity (vph)	343	509	536	241	530	522	182	664	282	125	662	264
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.30	1.00	0.09	0.16	0.70	0.11	0.31	1.04	0.21	0.30	0.62	0.18

Intersection Summary






















Area Type: CBD  
 Cycle Length: 65  
 Actuated Cycle Length: 65  
 Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green  
 Natural Cycle: 90  
 Control Type: Pretimed  
 Maximum v/c Ratio: 1.04  
 Intersection Signal Delay: 43.9 Intersection LOS: D  
 Intersection Capacity Utilization 120.0% ICU Level of Service H  
 Analysis Period (min) 15  
 ~ Volume exceeds capacity, queue is theoretically infinite.  
 Queue shown is maximum after two cycles.  
 # 95th percentile volume exceeds capacity, queue may be longer.  
 Queue shown is maximum after two cycles.

Splits and Phases: 4: Ashland Avenue & 79th Street



Lanes, Volumes, Timings  
5: Loomis Blvd & 79th Street

11/22/2017

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	25	504	25	25	374	25	25	100	25	25	100	25
Future Volume (vph)	25	504	25	25	374	25	25	100	25	25	100	25
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (ft)	60		30	60		30	0		0	0		0
Storage Lanes	1		1	1		1	0		0	0		0
Taper Length (ft)	25			25			0			0		
Satd. Flow (prot)	1509	1429	1318	1509	1429	1350	0	1541	0	0	1541	0
Flt Permitted	0.480			0.381				0.935			0.935	
Satd. Flow (perm)	762	1429	1318	605	1429	1350	0	1452	0	0	1452	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			13			16		11			11	
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		1315			357			644			631	
Travel Time (s)		29.9			8.1			14.6			14.3	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Bus Blockages (#/hr)	0	0	6	0	0	0	0	0	0	0	0	0
Parking (#/hr)		0			0							
Shared Lane Traffic (%)												
Lane Group Flow (vph)	27	548	27	27	407	27	0	163	0	0	163	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.22	1.39	1.26	1.22	1.39	1.22	1.22	1.22	1.22	1.22	1.22	1.22
Turning Speed (mph)	15		9	15		9	15		9	15		9
Turn Type	Perm	NA	Perm	Perm	NA	Perm	Perm	NA		Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4		4	8		8	2			6		
Minimum Split (s)	18.0	18.0	18.0	18.0	18.0	18.0	19.0	19.0		19.0	19.0	
Total Split (s)	58.0	58.0	58.0	58.0	58.0	58.0	27.0	27.0		27.0	27.0	
Total Split (%)	68.2%	68.2%	68.2%	68.2%	68.2%	68.2%	31.8%	31.8%		31.8%	31.8%	
Yellow Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0		1.0	1.0	
Lost Time Adjust (s)	1.0	1.0	1.0	1.0	1.0	1.0		1.0			1.0	
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0	5.0		5.0			5.0	
Lead/Lag												
Lead-Lag Optimize?												
Act Effect Green (s)	53.0	53.0	53.0	53.0	53.0	53.0		22.0			22.0	
Actuated g/C Ratio	0.62	0.62	0.62	0.62	0.62	0.62		0.26			0.26	
v/c Ratio	0.06	0.62	0.03	0.07	0.46	0.03		0.43			0.43	
Control Delay	6.7	13.5	4.3	7.0	10.5	3.9		28.5			28.5	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0		0.0			0.0	
Total Delay	6.7	13.5	4.3	7.0	10.5	3.9		28.5			28.5	
LOS	A	B	A	A	B	A		C			C	
Approach Delay		12.8			9.9			28.5			28.5	
Approach LOS		B			A			C			C	

Lanes, Volumes, Timings  
5: Loomis Blvd & 79th Street

11/22/2017



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Queue Length 50th (ft)	5	161	3	5	103	2		67			67	
Queue Length 95th (ft)	15	262	12	16	167	11		126			126	
Internal Link Dist (ft)		1235			277			564			551	
Turn Bay Length (ft)	60		30	60		30						
Base Capacity (vph)	475	891	826	377	891	847		383			383	
Starvation Cap Reductn	0	0	0	0	0	0		0			0	
Spillback Cap Reductn	0	0	0	0	0	0		0			0	
Storage Cap Reductn	0	0	0	0	0	0		0			0	
Reduced v/c Ratio	0.06	0.62	0.03	0.07	0.46	0.03		0.43			0.43	

Intersection Summary






















Area Type:	CBD
Cycle Length:	85
Actuated Cycle Length:	85
Offset:	0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
Natural Cycle:	55
Control Type:	Pretimed
Maximum v/c Ratio:	0.62
Intersection Signal Delay:	15.5
Intersection LOS:	B
Intersection Capacity Utilization	52.3%
ICU Level of Service	A
Analysis Period (min)	15

Splits and Phases: 5: Loomis Blvd & 79th Street



Lanes, Volumes, Timings  
6: Morgan Street & 79th Street

11/22/2017

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	25	511	25	25	398	25	25	100	25	25	100	25
Future Volume (vph)	25	511	25	25	398	25	25	100	25	25	100	25
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (ft)	100		30	100		30	0		0	0		0
Storage Lanes	1		1	1		1	0		0	0		0
Taper Length (ft)	25			25			0			0		
Satd. Flow (prot)	1509	1429	1350	1509	1414	1350	0	1541	0	0	1541	0
Flt Permitted	0.459			0.368				0.936			0.936	
Satd. Flow (perm)	729	1429	1350	584	1414	1350	0	1454	0	0	1454	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			16			17		14			14	
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		323			1321			593			659	
Travel Time (s)		7.3			30.0			13.5			15.0	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Parking (#/hr)		0			2							
Shared Lane Traffic (%)												
Lane Group Flow (vph)	27	555	27	27	433	27	0	163	0	0	163	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.22	1.39	1.22	1.22	1.41	1.22	1.22	1.22	1.22	1.22	1.22	1.22
Turning Speed (mph)	15		9	15		9	15		9	15		9
Turn Type	Perm	NA	Perm	Perm	NA	Perm	Perm	NA		Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4		4	8		8	2			6		
Minimum Split (s)	17.0	17.0	17.0	17.0	17.0	17.0	21.0	21.0		21.0	21.0	
Total Split (s)	46.0	46.0	46.0	46.0	46.0	46.0	24.0	24.0		24.0	24.0	
Total Split (%)	65.7%	65.7%	65.7%	65.7%	65.7%	65.7%	34.3%	34.3%		34.3%	34.3%	
Yellow Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0		1.0	1.0	
Lost Time Adjust (s)	1.0	1.0	1.0	1.0	1.0	1.0		1.0			1.0	
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0	5.0		5.0			5.0	
Lead/Lag												
Lead-Lag Optimize?												
Act Effect Green (s)	41.0	41.0	41.0	41.0	41.0	41.0		19.0			19.0	
Actuated g/C Ratio	0.59	0.59	0.59	0.59	0.59	0.59		0.27			0.27	
v/c Ratio	0.06	0.66	0.03	0.08	0.52	0.03		0.40			0.40	
Control Delay	6.8	14.7	4.1	2.0	4.3	0.3		22.6			22.6	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0		0.0			0.0	
Total Delay	6.8	14.7	4.1	2.0	4.3	0.3		22.6			22.6	
LOS	A	B	A	A	A	A		C			C	
Approach Delay		13.9			4.0			22.6			22.6	
Approach LOS		B			A			C			C	
Queue Length 50th (ft)	5	145	2	1	15	0		52			52	



Lanes, Volumes, Timings  
6: Morgan Street & 79th Street

11/22/2017

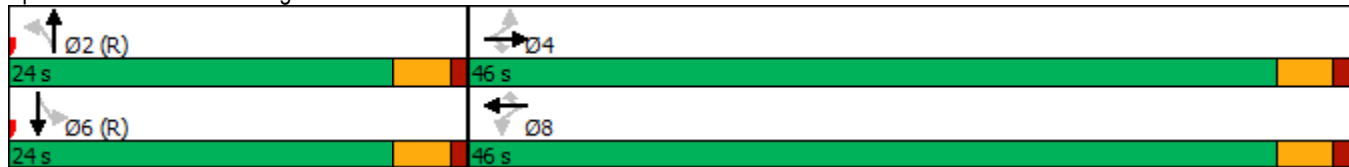


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Queue Length 95th (ft)	14	252	11	m2	m25	m0		104			104	
Internal Link Dist (ft)		243						513			579	
Turn Bay Length (ft)	100		30	100		30						
Base Capacity (vph)	426	836	797	342	828	797		404			404	
Starvation Cap Reductn	0	0	0	0	0	0		0			0	
Spillback Cap Reductn	0	0	0	0	0	0		0			0	
Storage Cap Reductn	0	0	0	0	0	0		0			0	
Reduced v/c Ratio	0.06	0.66	0.03	0.08	0.52	0.03		0.40			0.40	

Intersection Summary

























Area Type: CBD  
 Cycle Length: 70  
 Actuated Cycle Length: 70  
 Offset: 41 (59%), Referenced to phase 2:NBT and 6:SBTL, Start of Green  
 Natural Cycle: 60  
 Control Type: Pretimed  
 Maximum v/c Ratio: 0.66  
 Intersection Signal Delay: 12.5  
 Intersection LOS: B  
 Intersection Capacity Utilization 54.0%  
 ICU Level of Service A  
 Analysis Period (min) 15  
 m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 6: Morgan Street & 79th Street



Lanes, Volumes, Timings  
7: Halsted Street & 79th Street

11/22/2017

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	38	462	61	28	349	33	62	462	53	29	220	37
Future Volume (vph)	38	462	61	28	349	33	62	462	53	29	220	37
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Width (ft)	9	10	9	9	10	9	10	11	13	10	10	13
Storage Length (ft)	100		30	60		30	100		100	100		100
Storage Lanes	1		1	1		1	1		1	1		1
Taper Length (ft)	25			25			25			25		
Satd. Flow (prot)	1385	1237	1215	1385	1221	1203	1436	1520	1368	1395	1426	1355
Flt Permitted	0.475			0.338			0.610			0.313		
Satd. Flow (perm)	693	1237	1215	493	1221	1203	922	1520	1368	459	1426	1355
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			62			62			62			62
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		1321			665			631			665	
Travel Time (s)		30.0			15.1			14.3			15.1	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	0%	10%	2%	0%	9%	3%	0%	3%	4%	3%	6%	5%
Parking (#/hr)		0			4							
Shared Lane Traffic (%)												
Lane Group Flow (vph)	41	502	66	30	379	36	67	502	58	32	239	40
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			10			10	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.39	1.52	1.39	1.39	1.56	1.39	1.33	1.28	1.18	1.33	1.33	1.18
Turning Speed (mph)	15		9	15		9	15		9	15		9
Turn Type	Perm	NA	Perm	Perm	NA	Perm	Perm	NA	Perm	Perm	NA	Perm
Protected Phases		4			8			2			6	
Permitted Phases	4		4	8		8	2		2	6		6
Minimum Split (s)	30.0	30.0	30.0	30.0	30.0	30.0	27.0	27.0	27.0	27.0	27.0	27.0
Total Split (s)	36.0	36.0	36.0	36.0	36.0	36.0	34.0	34.0	34.0	34.0	34.0	34.0
Total Split (%)	51.4%	51.4%	51.4%	51.4%	51.4%	51.4%	48.6%	48.6%	48.6%	48.6%	48.6%	48.6%
Yellow Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
All-Red Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lost Time Adjust (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Total Lost Time (s)	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0
Lead/Lag												
Lead-Lag Optimize?												
Act Effct Green (s)	28.0	28.0	28.0	28.0	28.0	28.0	26.0	26.0	26.0	26.0	26.0	26.0
Actuated g/C Ratio	0.40	0.40	0.40	0.40	0.40	0.40	0.37	0.37	0.37	0.37	0.37	0.37
v/c Ratio	0.15	1.02	0.13	0.15	0.78	0.07	0.20	0.89	0.11	0.19	0.45	0.07
Control Delay	7.1	57.5	1.3	16.0	31.8	2.2	16.9	41.9	4.7	18.4	20.0	2.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	7.1	57.5	1.3	16.0	31.8	2.2	16.9	41.9	4.7	18.4	20.0	2.7
LOS	A	E	A	B	C	A	B	D	A	B	C	A
Approach Delay		48.0			28.4			35.8			17.6	

Lanes, Volumes, Timings  
7: Halsted Street & 79th Street

11/22/2017

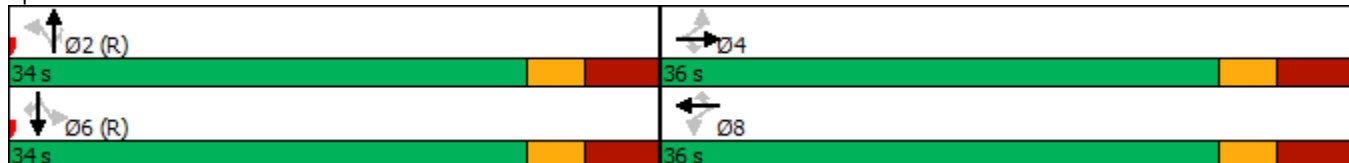


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Approach LOS	D			C			D			B		
Queue Length 50th (ft)	5	~223	2	8	138	0	19	198	0	9	76	0
Queue Length 95th (ft)	m8	#410	m3	26	#279	9	47	#373	20	29	136	11
Internal Link Dist (ft)	1241			585			551			585		
Turn Bay Length (ft)	100		30	60		30	100		100	100		100
Base Capacity (vph)	277	494	523	197	488	518	342	564	547	170	529	542
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.15	1.02	0.13	0.15	0.78	0.07	0.20	0.89	0.11	0.19	0.45	0.07

Intersection Summary

Area Type: CBD  
 Cycle Length: 70  
 Actuated Cycle Length: 70  
 Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green  
 Natural Cycle: 90  
 Control Type: Pretimed  
 Maximum v/c Ratio: 1.02  
 Intersection Signal Delay: 35.0 Intersection LOS: D  
 Intersection Capacity Utilization 102.2% ICU Level of Service G  
 Analysis Period (min) 15  
 ~ Volume exceeds capacity, queue is theoretically infinite.  
 Queue shown is maximum after two cycles.  
 # 95th percentile volume exceeds capacity, queue may be longer.  
 Queue shown is maximum after two cycles.  
 m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 7: Halsted Street & 79th Street



Lanes, Volumes, Timings  
8: 79th Street & 150 W.

11/22/2017



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Volume (vph)	10	733	10	10	424	10	10	10	10	10	10	10
Future Volume (vph)	10	733	10	10	424	10	10	10	10	10	10	10
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Satd. Flow (prot)	0	1425	0	0	1424	0	0	1492	0	0	1492	0
Flt Permitted		0.994			0.982			0.932			0.932	
Satd. Flow (perm)	0	1418	0	0	1399	0	0	1414	0	0	1414	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		2			3			11			11	
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		558			495			173			227	
Travel Time (s)		12.7			11.3			3.9			5.2	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Parking (#/hr)		0			0							
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	819	0	0	483	0	0	33	0	0	33	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			0			0	
Link Offset(ft)		0			0			0			-30	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.22	1.39	1.22	1.22	1.39	1.22	1.22	1.22	1.22	1.22	1.22	1.22
Turning Speed (mph)	15		9	15		9	15		9	15		9
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Minimum Split (s)	9.0	9.0		9.0	9.0		21.0	21.0		21.0	21.0	
Total Split (s)	62.0	62.0		62.0	62.0		23.0	23.0		23.0	23.0	
Total Split (%)	72.9%	72.9%		72.9%	72.9%		27.1%	27.1%		27.1%	27.1%	
Yellow Time (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
All-Red Time (s)	1.0	1.0		1.0	1.0		1.0	1.0		1.0	1.0	
Lost Time Adjust (s)		1.0			1.0			1.0			1.0	
Total Lost Time (s)		5.0			5.0			5.0			5.0	
Lead/Lag												
Lead-Lag Optimize?												
Act Effct Green (s)		57.0			57.0			18.0			18.0	
Actuated g/C Ratio		0.67			0.67			0.21			0.21	
v/c Ratio		0.86			0.51			0.11			0.11	
Control Delay		22.7			9.9			21.4			21.4	
Queue Delay		0.0			0.0			0.0			0.0	
Total Delay		22.7			9.9			21.4			21.4	
LOS		C			A			C			C	
Approach Delay		22.7			9.9			21.4			21.4	
Approach LOS		C			A			C			C	
Queue Length 50th (ft)		296			96			9			9	
Queue Length 95th (ft)		#606			126			33			33	
Internal Link Dist (ft)		478			415			93			147	
Turn Bay Length (ft)												

Lanes, Volumes, Timings  
 8: 79th Street & 150 W.

11/22/2017



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Base Capacity (vph)		951			939			308			308	
Starvation Cap Reductn		0			0			0			0	
Spillback Cap Reductn		0			0			0			0	
Storage Cap Reductn		0			0			0			0	
Reduced v/c Ratio		0.86			0.51			0.11			0.11	

Intersection Summary

Area Type:	CBD
Cycle Length:	85
Actuated Cycle Length:	85
Offset:	65 (76%), Referenced to phase 2:NBT and 6:SBTL, Start of Green
Natural Cycle:	70
Control Type:	Pretimed
Maximum v/c Ratio:	0.86
Intersection Signal Delay:	18.2
Intersection LOS:	B
Intersection Capacity Utilization	74.1%
ICU Level of Service	D
Analysis Period (min)	15
# 95th percentile volume exceeds capacity, queue may be longer. Queue shown is maximum after two cycles.	

Splits and Phases: 8: 79th Street & 150 W.



Lanes, Volumes, Timings  
 9: Lafayette Avenue & 79th Street

11/22/2017



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑↑↑		↔	↑↑					↔	↑↑↑↑	↔
Traffic Volume (vph)	0	576	177	187	327	0	0	0	0	244	185	117
Future Volume (vph)	0	576	177	187	327	0	0	0	0	244	185	117
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Width (ft)	11	11	11	12	12	12	12	12	12	12	10	8
Storage Length (ft)	100		0	0		0	0		0	0		0
Storage Lanes	2		0	1		0	0		0	1		1
Taper Length (ft)	25			0			0			0		
Satd. Flow (prot)	0	4359	0	1494	2509	0	0	0	0	1203	3553	978
Flt Permitted				0.251						0.950	0.980	
Satd. Flow (perm)	0	4359	0	367	2509	0	0	0	0	1203	3553	949
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		85										127
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		330			322			703			664	
Travel Time (s)		7.5			7.3			16.0			15.1	
Confl. Peds. (#/hr)	5		130	130		5	20					20
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	2%	9%	19%	3%	8%	2%	2%	2%	2%	10%	6%	22%
Bus Blockages (#/hr)	0	0	0	0	15	0	0	0	0	0	0	0
Parking (#/hr)					17							
Shared Lane Traffic (%)										50%		
Lane Group Flow (vph)	0	818	0	203	355	0	0	0	0	132	334	127
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.28	1.28	1.28	1.22	1.43	1.22	1.22	1.22	1.22	1.22	1.33	1.46
Turning Speed (mph)	15		9	15		9	15		9	15		9
Turn Type		NA		pm+pt	NA					Perm	NA	Perm
Protected Phases		4		3	8						6	
Permitted Phases				8						6		6
Minimum Split (s)		20.0		8.0	26.0					33.0	33.0	33.0
Total Split (s)		29.0		19.0	48.0					37.0	37.0	37.0
Total Split (%)		34.1%		22.4%	56.5%					43.5%	43.5%	43.5%
Yellow Time (s)		3.0		3.0	3.0					3.0	3.0	3.0
All-Red Time (s)		5.0		0.0	5.0					2.0	2.0	2.0
Lost Time Adjust (s)		1.0		1.0	1.0					1.0	1.0	1.0
Total Lost Time (s)		9.0		4.0	9.0					6.0	6.0	6.0
Lead/Lag		Lag		Lead								
Lead-Lag Optimize?												
Act Effect Green (s)		20.0		44.0	39.0					31.0	31.0	31.0
Actuated g/C Ratio		0.24		0.52	0.46					0.36	0.36	0.36
v/c Ratio		0.75		0.52	0.31					0.30	0.26	0.30
Control Delay		23.9		18.0	14.8					21.7	19.6	5.8
Queue Delay		0.0		0.0	0.0					0.0	0.0	0.0
Total Delay		23.9		18.0	14.8					21.7	19.6	5.8

Lanes, Volumes, Timings  
 9: Lafayette Avenue & 79th Street

11/22/2017

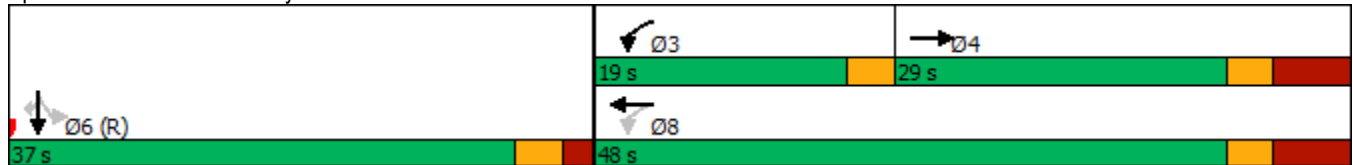


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
LOS		C		B	B					C	B	A
Approach Delay		23.9			16.0						17.1	
Approach LOS		C			B						B	
Queue Length 50th (ft)		83		72	66					58	47	0
Queue Length 95th (ft)		m117		m102	m90					110	71	36
Internal Link Dist (ft)		250			242			623			584	
Turn Bay Length (ft)												
Base Capacity (vph)		1090		388	1151					438	1295	426
Starvation Cap Reductn		0		0	0					0	0	0
Spillback Cap Reductn		0		0	0					0	0	0
Storage Cap Reductn		0		0	0					0	0	0
Reduced v/c Ratio		0.75		0.52	0.31					0.30	0.26	0.30

Intersection Summary

Area Type: CBD  
 Cycle Length: 85  
 Actuated Cycle Length: 85  
 Offset: 66 (78%), Referenced to phase 6:SBTL, Start of Green  
 Natural Cycle: 65  
 Control Type: Pretimed  
 Maximum v/c Ratio: 0.75  
 Intersection Signal Delay: 19.6  
 Intersection LOS: B  
 Intersection Capacity Utilization 71.0%  
 ICU Level of Service C  
 Analysis Period (min) 15  
 m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 9: Lafayette Avenue & 79th Street



Lanes, Volumes, Timings  
 10: State Street & 79th Street

11/22/2017

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	422	398	0	0	313	144	201	892	84	0	0	0
Future Volume (vph)	422	398	0	0	313	144	201	892	84	0	0	0
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Width (ft)	12	12	12	12	12	12	12	11	16	12	12	12
Satd. Flow (prot)	2927	2583	0	0	2703	0	1373	2791	1530	0	0	0
Flt Permitted	0.950						0.950	0.999				
Satd. Flow (perm)	2580	2583	0	0	2703	0	1363	2791	1314	0	0	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)					20				103			
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		322			463			683			659	
Travel Time (s)		7.3			10.5			15.5			15.0	
Confl. Peds. (#/hr)	82		240	240		82	8		145	145		8
Peak Hour Factor	0.89	0.90	0.92	0.92	0.90	0.78	0.91	0.95	0.78	0.92	0.92	0.92
Bus Blockages (#/hr)	0	15	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)		27										
Shared Lane Traffic (%)							10%					
Lane Group Flow (vph)	474	442	0	0	533	0	199	961	108	0	0	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		24			24			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.22	1.48	1.22	1.22	1.22	1.22	1.22	1.28	1.05	1.22	1.22	1.22
Turning Speed (mph)	15		9	15		9	15		9	15		9
Turn Type	Prot	NA			NA		Perm	NA	Perm			
Protected Phases	7	4			8			2				
Permitted Phases							2		2			
Minimum Split (s)	8.0	26.0			22.0		33.0	33.0	33.0			
Total Split (s)	14.0	42.0			28.0		43.0	43.0	43.0			
Total Split (%)	16.5%	49.4%			32.9%		50.6%	50.6%	50.6%			
Yellow Time (s)	3.0	3.0			3.0		3.0	3.0	3.0			
All-Red Time (s)	0.0	5.0			5.0		2.0	2.0	2.0			
Lost Time Adjust (s)	1.0	1.0			1.0		1.0	1.0	1.0			
Total Lost Time (s)	4.0	9.0			9.0		6.0	6.0	6.0			
Lead/Lag	Lead				Lag							
Lead-Lag Optimize?												
Act Effct Green (s)	10.0	33.0			19.0		37.0	37.0	37.0			
Actuated g/C Ratio	0.12	0.39			0.22		0.44	0.44	0.44			
v/c Ratio	1.38	0.44			0.86		0.34	0.79	0.17			
Control Delay	211.0	11.0			46.3		17.9	26.6	4.3			
Queue Delay	0.0	0.0			0.0		0.0	0.0	0.0			
Total Delay	211.0	11.0			46.3		17.9	26.6	4.3			
LOS	F	B			D		B	C	A			
Approach Delay		114.5			46.3			23.3				
Approach LOS		F			D			C				
Queue Length 50th (ft)	~177	90			139		74	235	2			



Lanes, Volumes, Timings  
 10: State Street & 79th Street

11/22/2017

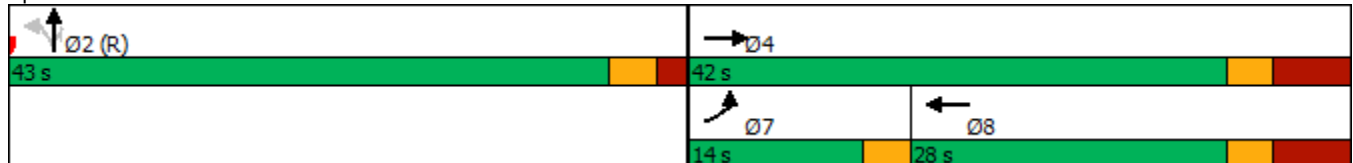


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Queue Length 95th (ft)	#261	m133			#228		131	320	21			
Internal Link Dist (ft)		242			383			603			579	
Turn Bay Length (ft)												
Base Capacity (vph)	344	1002			619		593	1214	630			
Starvation Cap Reductn	0	0			0		0	0	0			
Spillback Cap Reductn	0	0			0		0	0	0			
Storage Cap Reductn	0	0			0		0	0	0			
Reduced v/c Ratio	1.38	0.44			0.86		0.34	0.79	0.17			

Intersection Summary

















Area Type: CBD  
 Cycle Length: 85  
 Actuated Cycle Length: 85  
 Offset: 12 (14%), Referenced to phase 2:NRTL, Start of Green  
 Natural Cycle: 90  
 Control Type: Pretimed  
 Maximum v/c Ratio: 1.38  
 Intersection Signal Delay: 58.6 Intersection LOS: E  
 Intersection Capacity Utilization 71.0% ICU Level of Service C  
 Analysis Period (min) 15  
 ~ Volume exceeds capacity, queue is theoretically infinite.  
 Queue shown is maximum after two cycles.  
 # 95th percentile volume exceeds capacity, queue may be longer.  
 Queue shown is maximum after two cycles.  
 m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 10: State Street & 79th Street



Lanes, Volumes, Timings  
11: Indiana Avenue & 79th Street

11/22/2017

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	394	88	25	388	0	0	0	0	25	25	69
Future Volume (vph)	0	394	88	25	388	0	0	0	0	25	25	69
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (ft)	0		30	0		0	0		0	0		0
Storage Lanes	0		1	0		0	0		0	0		0
Taper Length (ft)	0			0			0			0		
Satd. Flow (prot)	0	1429	1339	0	1425	0	0	0	0	0	1450	0
Flt Permitted					0.963						0.990	
Satd. Flow (perm)	0	1429	1339	0	1377	0	0	0	0	0	1450	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			63									75
Link Speed (mph)		30			30			30				30
Link Distance (ft)		869			1306			672				662
Travel Time (s)		19.8			29.7			15.3				15.0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Bus Blockages (#/hr)	0	0	2	0	0	0	0	0	0	0	0	0
Parking (#/hr)		0			0							
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	428	96	0	449	0	0	0	0	0	129	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		10			10			0				0
Link Offset(ft)		0			0			0				0
Crosswalk Width(ft)		16			16			16				16
Two way Left Turn Lane												
Headway Factor	1.22	1.39	1.24	1.22	1.39	1.22	1.22	1.22	1.22	1.22	1.22	1.22
Turning Speed (mph)	15		9	15		9	15		9	15		9
Turn Type		NA	Perm	Perm	NA					Perm	NA	
Protected Phases		4			8							6
Permitted Phases			4	8						6		
Minimum Split (s)		18.0	18.0	18.0	18.0					19.0	19.0	
Total Split (s)		38.0	38.0	38.0	38.0					22.0	22.0	
Total Split (%)		63.3%	63.3%	63.3%	63.3%					36.7%	36.7%	
Yellow Time (s)		3.0	3.0	3.0	3.0					3.0	3.0	
All-Red Time (s)		2.0	2.0	2.0	2.0					1.0	1.0	
Lost Time Adjust (s)		1.0	1.0		1.0						1.0	
Total Lost Time (s)		6.0	6.0		6.0						5.0	
Lead/Lag												
Lead-Lag Optimize?												
Act Effct Green (s)		32.0	32.0		32.0							17.0
Actuated g/C Ratio		0.53	0.53		0.53							0.28
v/c Ratio		0.56	0.13		0.61							0.28
Control Delay		12.9	3.8		6.1							10.1
Queue Delay		0.0	0.0		0.0							0.0
Total Delay		12.9	3.8		6.1							10.1
LOS		B	A		A							B
Approach Delay		11.3			6.1							10.1
Approach LOS		B			A							B

Lanes, Volumes, Timings  
 11: Indiana Avenue & 79th Street

11/22/2017

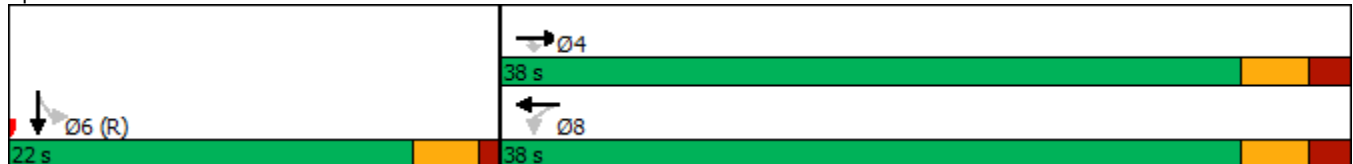


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Queue Length 50th (ft)		94	5		22							14
Queue Length 95th (ft)		169	23		m35							50
Internal Link Dist (ft)		789			1226			592				582
Turn Bay Length (ft)			30									
Base Capacity (vph)		762	743		734							464
Starvation Cap Reductn		0	0		0							0
Spillback Cap Reductn		0	0		0							0
Storage Cap Reductn		0	0		0							0
Reduced v/c Ratio		0.56	0.13		0.61							0.28

Intersection Summary

Area Type: CBD  
 Cycle Length: 60  
 Actuated Cycle Length: 60  
 Offset: 52 (87%), Referenced to phase 6:SBTL, Start of Green  
 Natural Cycle: 50  
 Control Type: Pretimed  
 Maximum v/c Ratio: 0.61  
 Intersection Signal Delay: 9.0 Intersection LOS: A  
 Intersection Capacity Utilization 69.7% ICU Level of Service C  
 Analysis Period (min) 15  
 m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 11: Indiana Avenue & 79th Street



Lanes, Volumes, Timings  
12: King Dr & 79th Street

11/22/2017

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	36	312	71	50	295	43	87	308	54	45	243	31
Future Volume (vph)	36	312	71	50	295	43	87	308	54	45	243	31
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Width (ft)	10	10	10	10	10	10	10	10	10	10	10	10
Storage Length (ft)	75		30	60		30	60		30	50		50
Storage Lanes	1		1	1		1	1		1	1		1
Taper Length (ft)	25			25			25			25		
Satd. Flow (prot)	1408	1282	1260	1408	1275	1260	1408	1482	1260	1408	1482	1260
Flt Permitted	0.490			0.465			0.460			0.559		
Satd. Flow (perm)	681	1282	1097	645	1275	1106	660	1482	1126	783	1482	1168
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			73			73			45			91
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		1306			1324			671			675	
Travel Time (s)		29.7			30.1			15.3			15.3	
Confl. Peds. (#/hr)	73		78	78		73	36		59	59		36
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Parking (#/hr)		7			8							
Shared Lane Traffic (%)												
Lane Group Flow (vph)	39	339	77	54	321	47	95	335	59	49	264	34
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		10			10			10			10	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.33	1.59	1.33	1.33	1.60	1.33	1.33	1.33	1.33	1.33	1.33	1.33
Turning Speed (mph)	15		9	15		9	15		9	15		9
Turn Type	Perm	NA	Perm	Perm	NA	Perm	pm+pt	NA	Perm	Perm	NA	Perm
Protected Phases		4			8		5	2			6	
Permitted Phases	4		4	8		8	2		2	6		6
Minimum Split (s)	26.0	26.0	26.0	26.0	26.0	26.0	8.0	24.0	24.0	24.0	24.0	24.0
Total Split (s)	26.0	26.0	26.0	26.0	26.0	26.0	8.0	34.0	34.0	26.0	26.0	26.0
Total Split (%)	43.3%	43.3%	43.3%	43.3%	43.3%	43.3%	13.3%	56.7%	56.7%	43.3%	43.3%	43.3%
Yellow Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	0.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Total Lost Time (s)	6.0	6.0	6.0	6.0	6.0	6.0	4.0	5.0	5.0	5.0	5.0	5.0
Lead/Lag							Lead			Lag	Lag	Lag
Lead-Lag Optimize?												
Act Effct Green (s)	20.0	20.0	20.0	20.0	20.0	20.0	30.0	29.0	29.0	21.0	21.0	21.0
Actuated g/C Ratio	0.33	0.33	0.33	0.33	0.33	0.33	0.50	0.48	0.48	0.35	0.35	0.35
v/c Ratio	0.17	0.79	0.19	0.25	0.76	0.11	0.25	0.47	0.10	0.18	0.51	0.07
Control Delay	8.3	24.5	1.5	10.2	23.5	0.9	9.9	13.1	4.5	15.7	19.7	0.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	8.3	24.5	1.5	10.2	23.5	0.9	9.9	13.1	4.5	15.7	19.7	0.4
LOS	A	C	A	B	C	A	A	B	A	B	B	A
Approach Delay		19.2			19.3			11.4			17.2	

Lanes, Volumes, Timings  
12: King Dr & 79th Street

11/22/2017



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Approach LOS	B			B			B			B		
Queue Length 50th (ft)	3	28	0	5	81	0	17	75	2	12	74	0
Queue Length 95th (ft)	m6	#223	m2	m9	#222	m0	38	136	18	34	136	1
Internal Link Dist (ft)	1226			1244			591			595		
Turn Bay Length (ft)	75		30	60		30	60		30	50		50
Base Capacity (vph)	227	427	414	215	425	417	379	716	567	274	518	467
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.17	0.79	0.19	0.25	0.76	0.11	0.25	0.47	0.10	0.18	0.51	0.07

Intersection Summary

Area Type: CBD  
 Cycle Length: 60  
 Actuated Cycle Length: 60  
 Offset: 20 (33%), Referenced to phase 2:NBT and 6:SBT, Start of Green  
 Natural Cycle: 60  
 Control Type: Pretimed  
 Maximum v/c Ratio: 0.79  
 Intersection Signal Delay: 16.6  
 Intersection LOS: B  
 Intersection Capacity Utilization 90.8%  
 ICU Level of Service E  
 Analysis Period (min) 15  
 # 95th percentile volume exceeds capacity, queue may be longer.  
 Queue shown is maximum after two cycles.  
 m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 12: King Dr & 79th Street



Lanes, Volumes, Timings  
13: St Lawrence Avenue & 79th Street

11/22/2017



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↑	↗		↕				
Traffic Volume (vph)	25	386	0	0	363	25	25	100	25	0	0	0
Future Volume (vph)	25	386	0	0	363	25	25	100	25	0	0	0
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (ft)	0		30	0		30	0		0	0		0
Storage Lanes	0		0	0		1	0		0	0		0
Taper Length (ft)	0			0			0			0		
Satd. Flow (prot)	0	1425	0	0	1429	1350	0	1541	0	0	0	0
Flt Permitted		0.967						0.992				
Satd. Flow (perm)	0	1382	0	0	1429	1350	0	1541	0	0	0	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)						20		17				
Link Speed (mph)		30			30			30				30
Link Distance (ft)		1324			660			692				656
Travel Time (s)		30.1			15.0			15.7				14.9
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Parking (#/hr)		0			0							
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	447	0	0	395	27	0	163	0	0	0	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		10			10			0				0
Link Offset(ft)		0			0			0				0
Crosswalk Width(ft)		16			16			16				16
Two way Left Turn Lane												
Headway Factor	1.22	1.39	1.22	1.22	1.39	1.22	1.22	1.22	1.22	1.22	1.22	1.22
Turning Speed (mph)	15		9	15		9	15		9	15		9
Turn Type	Perm	NA			NA	Perm	Perm	NA				
Protected Phases		4			8			2				
Permitted Phases	4					8	2					
Minimum Split (s)	16.0	16.0			16.0	16.0	17.0	17.0				
Total Split (s)	38.0	38.0			38.0	38.0	22.0	22.0				
Total Split (%)	63.3%	63.3%			63.3%	63.3%	36.7%	36.7%				
Yellow Time (s)	3.0	3.0			3.0	3.0	3.0	3.0				
All-Red Time (s)	1.0	1.0			1.0	1.0	1.0	1.0				
Lost Time Adjust (s)		1.0			1.0	1.0		1.0				
Total Lost Time (s)		5.0			5.0	5.0		5.0				
Lead/Lag												
Lead-Lag Optimize?												
Act Effct Green (s)		33.0			33.0	33.0		17.0				
Actuated g/C Ratio		0.55			0.55	0.55		0.28				
v/c Ratio		0.59			0.50	0.04		0.36				
Control Delay		5.8			11.2	3.8		18.2				
Queue Delay		0.0			0.0	0.0		0.0				
Total Delay		5.8			11.2	3.8		18.2				
LOS		A			B	A		B				
Approach Delay		5.8			10.7			18.2				
Approach LOS		A			B			B				
Queue Length 50th (ft)		30			80	1		41				

Lanes, Volumes, Timings  
 13: St Lawrence Avenue & 79th Street

11/22/2017



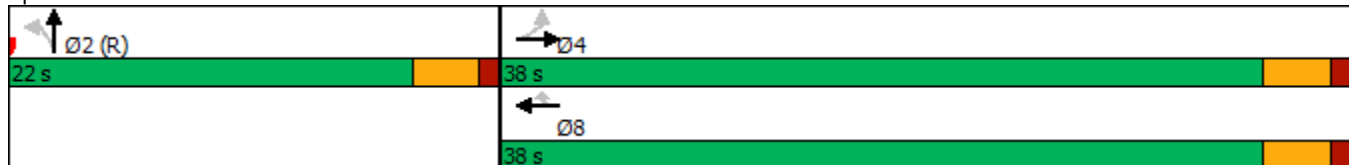
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Queue Length 95th (ft)		m40			144	10		87				
Internal Link Dist (ft)		1244			580			612			576	
Turn Bay Length (ft)						30						
Base Capacity (vph)		760			785	751		448				
Starvation Cap Reductn		0			0	0		0				
Spillback Cap Reductn		0			0	0		0				
Storage Cap Reductn		0			0	0		0				
Reduced v/c Ratio		0.59			0.50	0.04		0.36				

Intersection Summary

Area Type: CBD  
 Cycle Length: 60  
 Actuated Cycle Length: 60  
 Offset: 50 (83%), Referenced to phase 2:NBTL, Start of Green  
 Natural Cycle: 45  
 Control Type: Pretimed  
 Maximum v/c Ratio: 0.59  
 Intersection Signal Delay: 9.8  
 Intersection Capacity Utilization 67.0%  
 Analysis Period (min) 15  
 Intersection LOS: A  
 ICU Level of Service C

m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 13: St Lawrence Avenue & 79th Street



Lanes, Volumes, Timings  
14: Kenwood Avenue & 79th Street

11/22/2017



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	165	25	25	210	0	0	0	0	25	100	25
Future Volume (vph)	0	165	25	25	210	0	0	0	0	25	100	25
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Satd. Flow (prot)	0	1404	0	0	1580	0	0	0	0	0	1541	0
Flt Permitted					0.961						0.992	
Satd. Flow (perm)	0	1404	0	0	1526	0	0	0	0	0	1541	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		16										17
Link Speed (mph)		30			30			30				30
Link Distance (ft)		351			1665			668				659
Travel Time (s)		8.0			37.8			15.2				15.0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Parking (#/hr)		0										
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	206	0	0	255	0	0	0	0	0	163	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			0				0
Link Offset(ft)		0			0			0				0
Crosswalk Width(ft)		16			16			16				16
Two way Left Turn Lane												
Headway Factor	1.22	1.39	1.22	1.22	1.22	1.22	1.22	1.22	1.22	1.22	1.22	1.22
Turning Speed (mph)	15		9	15		9	15		9	15		9
Turn Type		NA		Perm	NA					Perm		NA
Protected Phases		4			8							6
Permitted Phases				8						6		
Minimum Split (s)		16.0		16.0	16.0					17.0	17.0	
Total Split (s)		37.0		37.0	37.0					28.0	28.0	
Total Split (%)		56.9%		56.9%	56.9%					43.1%	43.1%	
Yellow Time (s)		3.0		3.0	3.0					3.0	3.0	
All-Red Time (s)		1.0		1.0	1.0					1.0	1.0	
Lost Time Adjust (s)		1.0			1.0							1.0
Total Lost Time (s)		5.0			5.0							5.0
Lead/Lag												
Lead-Lag Optimize?												
Act Effct Green (s)		32.0			32.0							23.0
Actuated g/C Ratio		0.49			0.49							0.35
v/c Ratio		0.29			0.34							0.29
Control Delay		10.4			11.7							15.3
Queue Delay		0.0			0.0							0.0
Total Delay		10.4			11.7							15.3
LOS		B			B							B
Approach Delay		10.4			11.7							15.3
Approach LOS		B			B							B
Queue Length 50th (ft)		41			57							40
Queue Length 95th (ft)		81			103							82
Internal Link Dist (ft)		271			1585			588				579
Turn Bay Length (ft)												



Lanes, Volumes, Timings  
 14: Kenwood Avenue & 79th Street

11/22/2017

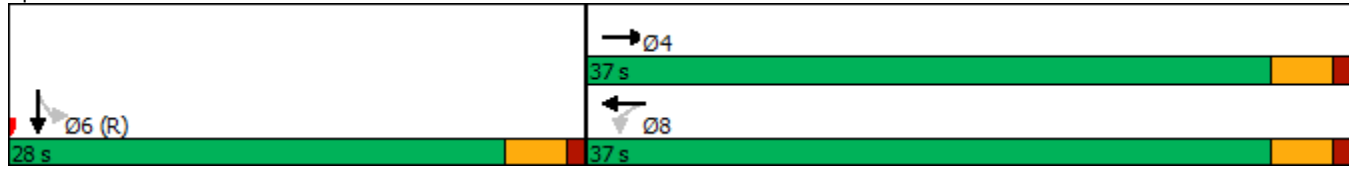


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Base Capacity (vph)		699			751							556
Starvation Cap Reductn		0			0							0
Spillback Cap Reductn		0			0							0
Storage Cap Reductn		0			0							0
Reduced v/c Ratio		0.29			0.34							0.29

Intersection Summary

Area Type:	CBD
Cycle Length:	65
Actuated Cycle Length:	65
Offset:	57 (88%), Referenced to phase 6:SBTL, Start of Green
Natural Cycle:	40
Control Type:	Pretimed
Maximum v/c Ratio:	0.34
Intersection Signal Delay:	12.2
Intersection LOS:	B
Intersection Capacity Utilization	49.9%
ICU Level of Service	A
Analysis Period (min)	15

Splits and Phases: 14: Kenwood Avenue & 79th Street



Lanes, Volumes, Timings

15: Stony Island Avenue & South Chicago Avenue & 79th Street

11/22/2017



Lane Group	EBL2	EBL	EBT	EBR	EBR2	WBL	WBT	WBR	WBR2	NBL2	NBL	NBT
Lane Configurations												
Traffic Volume (vph)	1	23	136	22	8	100	161	52	30	11	126	1134
Future Volume (vph)	1	23	136	22	8	100	161	52	30	11	126	1134
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (ft)		100		100		175		150			90	
Storage Lanes		1		1		1		1			1	
Taper Length (ft)		25				25					25	
Satd. Flow (prot)	0	1509	1588	1350	0	1509	1588	1350	0	0	1509	4336
Flt Permitted		0.497				0.571					0.950	
Satd. Flow (perm)	0	789	1588	1350	0	907	1588	1350	0	0	1509	4336
Right Turn on Red					Yes				Yes			
Satd. Flow (RTOR)				118				118				
Link Speed (mph)			30				30					30
Link Distance (ft)			1665				377					254
Travel Time (s)			37.8				8.6					5.8
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	25	143	31	0	105	169	87	0	0	145	1194
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Right	Left	Left	Right	Right	Left	Left	Left
Median Width(ft)			12				12					12
Link Offset(ft)			0				0					0
Crosswalk Width(ft)			16				16					16
Two way Left Turn Lane												
Headway Factor	1.22	1.22	1.22	1.22	1.22	1.22	1.22	1.22	1.22	1.22	1.22	1.22
Turning Speed (mph)	15	15		9	9	15		9	9	15	15	
Turn Type	Perm	Perm	NA	Perm		Perm	NA	Perm		Prot	Prot	NA
Protected Phases			4				8			5	5	2
Permitted Phases	4	4		4		8		8				
Minimum Split (s)	21.0	21.0	21.0	21.0		21.0	21.0	21.0		8.0	8.0	34.0
Total Split (s)	25.0	25.0	25.0	25.0		25.0	25.0	25.0		19.0	19.0	47.0
Total Split (%)	20.8%	20.8%	20.8%	20.8%		20.8%	20.8%	20.8%		15.8%	15.8%	39.2%
Yellow Time (s)	3.0	3.0	3.0	3.0		3.0	3.0	3.0		3.0	3.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0		2.0	2.0	2.0		0.0	0.0	3.0
Lost Time Adjust (s)		1.0	1.0	1.0		1.0	1.0	1.0			1.0	1.0
Total Lost Time (s)		6.0	6.0	6.0		6.0	6.0	6.0			4.0	8.0
Lead/Lag										Lead	Lead	Lag
Lead-Lag Optimize?												
Act Effct Green (s)		19.0	19.0	19.0		19.0	19.0	19.0			15.0	39.0
Actuated g/C Ratio		0.16	0.16	0.16		0.16	0.16	0.16			0.12	0.32
v/c Ratio		0.20	0.57	0.10		0.73	0.67	0.28			0.77	0.85
Control Delay		48.6	56.6	0.6		66.5	51.6	9.7			77.5	44.6
Queue Delay		0.0	0.0	0.0		0.0	0.0	0.0			0.0	0.0
Total Delay		48.6	56.6	0.6		66.5	51.6	9.7			77.5	44.6
LOS		D	E	A		E	D	A			E	D
Approach Delay			46.9				45.8					45.4
Approach LOS			D				D					D
Queue Length 50th (ft)		17	104	0		72	107	6			110	314
Queue Length 95th (ft)		45	174	0		#170	#194	35			#216	376

Lanes, Volumes, Timings  
 15: Stony Island Avenue & South Chicago Avenue & 79th Street

11/22/2017



Lane Group	NBR	NBR2	SBL2	SBL	SBT	SBR	SBR2	SET	SER	SER2	NWT	NWR
Lane Configurations												
Traffic Volume (vph)	73	14	18	58	712	61	9	187	73	2	200	65
Future Volume (vph)	73	14	18	58	712	61	9	187	73	2	200	65
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (ft)	130			0		0			0			0
Storage Lanes	2			1		1			0			0
Taper Length (ft)				0								
Satd. Flow (prot)	1350	0	0	1509	4336	1350	0	2888	0	0	2903	0
Flt Permitted				0.950								
Satd. Flow (perm)	1350	0	0	1509	4336	1350	0	2888	0	0	2903	0
Right Turn on Red		Yes					Yes			Yes		
Satd. Flow (RTOR)	100					100		1			1	
Link Speed (mph)					30			30			30	
Link Distance (ft)					690			712			889	
Travel Time (s)					15.7			16.2			20.2	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Shared Lane Traffic (%)												
Lane Group Flow (vph)	92	0	0	80	749	73	0	276	0	0	282	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Right	Right	Left	Left	Left	Right	Right	Left	Right	Right	Left	Right
Median Width(ft)					12			0			0	
Link Offset(ft)					0			0			0	
Crosswalk Width(ft)					16			16			16	
Two way Left Turn Lane												
Headway Factor	1.22	1.22	1.22	1.22	1.22	1.22	1.22	1.22	1.22	1.22	1.22	1.22
Turning Speed (mph)	9	9	15	15		9	9		9	9		9
Turn Type	Perm		Prot	Prot	NA	Perm		NA			NA	
Protected Phases			1	1	6			10			14	
Permitted Phases	2					6						
Minimum Split (s)	34.0		8.0	8.0	45.0	45.0		31.0			31.0	
Total Split (s)	47.0		17.0	17.0	45.0	45.0		31.0			31.0	
Total Split (%)	39.2%		14.2%	14.2%	37.5%	37.5%		25.8%			25.8%	
Yellow Time (s)	4.0		3.0	3.0	4.0	4.0		4.0			4.0	
All-Red Time (s)	3.0		0.0	0.0	3.0	3.0		2.0			2.0	
Lost Time Adjust (s)	1.0			1.0	1.0	1.0		1.0			1.0	
Total Lost Time (s)	8.0			4.0	8.0	8.0		7.0			7.0	
Lead/Lag	Lag		Lead	Lead	Lag	Lag						
Lead-Lag Optimize?												
Act Effct Green (s)	39.0			13.0	37.0	37.0		24.0			24.0	
Actuated g/C Ratio	0.32			0.11	0.31	0.31		0.20			0.20	
v/c Ratio	0.18			0.49	0.56	0.15		0.48			0.49	
Control Delay	5.7			61.4	36.7	3.3		45.5			45.6	
Queue Delay	0.0			0.0	0.0	0.0		0.0			0.0	
Total Delay	5.7			61.4	36.7	3.3		45.5			45.6	
LOS	A			E	D	A		D			D	
Approach Delay					36.2			45.5			45.6	
Approach LOS					D			D			D	
Queue Length 50th (ft)	0			59	177	0		100			102	
Queue Length 95th (ft)	33			113	221	19		144			147	

Lanes, Volumes, Timings  
 15: Stony Island Avenue & South Chicago Avenue & 79th Street

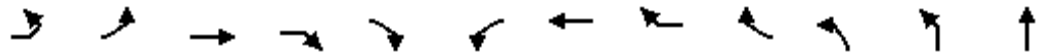
11/22/2017



Lane Group	NWR2
Lane Configurations	
Traffic Volume (vph)	3
Future Volume (vph)	3
Ideal Flow (vphpl)	1800
Storage Length (ft)	
Storage Lanes	
Taper Length (ft)	
Satd. Flow (prot)	0
Flt Permitted	
Satd. Flow (perm)	0
Right Turn on Red	Yes
Satd. Flow (RTOR)	
Link Speed (mph)	
Link Distance (ft)	
Travel Time (s)	
Peak Hour Factor	0.95
Shared Lane Traffic (%)	
Lane Group Flow (vph)	0
Enter Blocked Intersection	No
Lane Alignment	Right
Median Width(ft)	
Link Offset(ft)	
Crosswalk Width(ft)	
Two way Left Turn Lane	
Headway Factor	1.22
Turning Speed (mph)	9
Turn Type	
Protected Phases	
Permitted Phases	
Minimum Split (s)	
Total Split (s)	
Total Split (%)	
Yellow Time (s)	
All-Red Time (s)	
Lost Time Adjust (s)	
Total Lost Time (s)	
Lead/Lag	
Lead-Lag Optimize?	
Act Effct Green (s)	
Actuated g/C Ratio	
v/c Ratio	
Control Delay	
Queue Delay	
Total Delay	
LOS	
Approach Delay	
Approach LOS	
Queue Length 50th (ft)	
Queue Length 95th (ft)	

Lanes, Volumes, Timings  
 15: Stony Island Avenue & South Chicago Avenue & 79th Street

11/22/2017

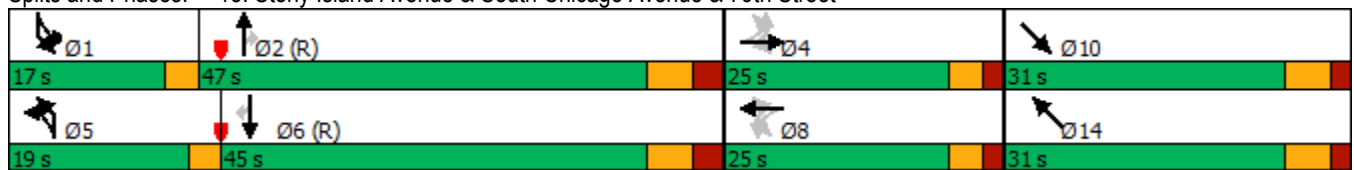


Lane Group	EBL2	EBL	EBT	EBR	EBR2	WBL	WBT	WBR	WBR2	NBL2	NBL	NBT
Internal Link Dist (ft)			1585				297					174
Turn Bay Length (ft)		100		100		175		150			90	
Base Capacity (vph)		124	251	313		143	251	313			188	1409
Starvation Cap Reductn		0	0	0		0	0	0			0	0
Spillback Cap Reductn		0	0	0		0	0	0			0	0
Storage Cap Reductn		0	0	0		0	0	0			0	0
Reduced v/c Ratio		0.20	0.57	0.10		0.73	0.67	0.28			0.77	0.85

Intersection Summary

Area Type: CBD  
 Cycle Length: 120  
 Actuated Cycle Length: 120  
 Offset: 46 (38%), Referenced to phase 2:NBT and 6:SBT, Start of Green  
 Natural Cycle: 105  
 Control Type: Pretimed  
 Maximum v/c Ratio: 0.85  
 Intersection Signal Delay: 43.1  
 Intersection LOS: D  
 Intersection Capacity Utilization 113.9%  
 ICU Level of Service H  
 Analysis Period (min) 15  
 # 95th percentile volume exceeds capacity, queue may be longer.  
 Queue shown is maximum after two cycles.

Splits and Phases: 15: Stony Island Avenue & South Chicago Avenue & 79th Street



Lanes, Volumes, Timings

15: Stony Island Avenue & South Chicago Avenue & 79th Street

11/22/2017


















Lane Group	NBR	NBR2	SBL2	SBL	SBT	SBR	SBR2	SET	SER	SER2	NWT	NWR
Internal Link Dist (ft)					610			632			809	
Turn Bay Length (ft)	130											
Base Capacity (vph)	506			163	1336	485		578				581
Starvation Cap Reductn	0			0	0	0		0				0
Spillback Cap Reductn	0			0	0	0		0				0
Storage Cap Reductn	0			0	0	0		0				0
Reduced v/c Ratio	0.18			0.49	0.56	0.15		0.48				0.49
Intersection Summary												



Lane Group	NWR2
Internal Link Dist (ft)	
Turn Bay Length (ft)	
Base Capacity (vph)	
Starvation Cap Reductn	
Spillback Cap Reductn	
Storage Cap Reductn	
Reduced v/c Ratio	
Intersection Summary	

Lanes, Volumes, Timings  
16: 79th Street & Cregier Avenue

11/22/2017

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	25	205	0	0	318	25	25	100	25	0	0	0
Future Volume (vph)	25	205	0	0	318	25	25	100	25	0	0	0
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Satd. Flow (prot)	0	1417	0	0	1572	0	0	1541	0	0	0	0
Flt Permitted		0.944						0.992				
Satd. Flow (perm)	0	1344	0	0	1572	0	0	1541	0	0	0	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)					9			18				
Link Speed (mph)		30			30			30				30
Link Distance (ft)		946			328			152				657
Travel Time (s)		21.5			7.5			3.5				14.9
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Bus Blockages (#/hr)	0	1	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)		0										
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	250	0	0	373	0	0	163	0	0	0	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			0				0
Link Offset(ft)		0			0			0				0
Crosswalk Width(ft)		16			16			16				16
Two way Left Turn Lane												
Headway Factor	1.22	1.40	1.22	1.22	1.22	1.22	1.22	1.22	1.22	1.22	1.22	1.22
Turning Speed (mph)	15		9	15		9	15		9	15		9
Turn Type	Perm	NA			NA		Perm	NA				
Protected Phases		4			8			2				
Permitted Phases	4						2					
Minimum Split (s)	19.0	19.0			19.0		23.0	23.0				
Total Split (s)	34.0	34.0			34.0		26.0	26.0				
Total Split (%)	56.7%	56.7%			56.7%		43.3%	43.3%				
Yellow Time (s)	3.0	3.0			3.0		3.0	3.0				
All-Red Time (s)	1.0	1.0			1.0		1.0	1.0				
Lost Time Adjust (s)		1.0			1.0			1.0				
Total Lost Time (s)		5.0			5.0			5.0				
Lead/Lag												
Lead-Lag Optimize?												
Act Effct Green (s)		29.0			29.0			21.0				
Actuated g/C Ratio		0.48			0.48			0.35				
v/c Ratio		0.39			0.49			0.30				
Control Delay		6.1			12.9			14.3				
Queue Delay		0.0			0.0			0.0				
Total Delay		6.1			12.9			14.3				
LOS		A			B			B				
Approach Delay		6.1			12.9			14.3				
Approach LOS		A			B			B				
Queue Length 50th (ft)		18			83			37				
Queue Length 95th (ft)		22			147			77				
Internal Link Dist (ft)		866			248			72				577



Lanes, Volumes, Timings  
 16: 79th Street & Cregier Avenue

11/22/2017

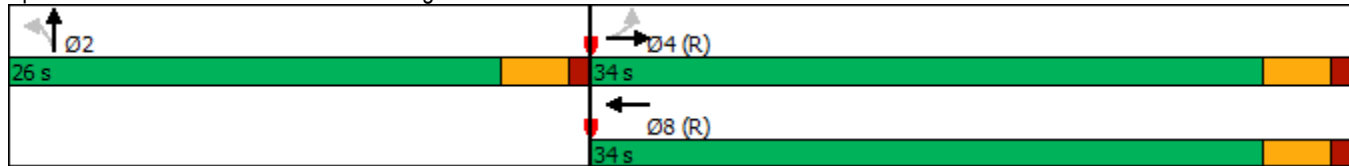


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Bay Length (ft)												
Base Capacity (vph)		649			764			551				
Starvation Cap Reductn		0			0			0				
Spillback Cap Reductn		0			0			0				
Storage Cap Reductn		0			0			0				
Reduced v/c Ratio		0.39			0.49			0.30				

Intersection Summary

Area Type:	CBD
Cycle Length:	60
Actuated Cycle Length:	60
Offset: 0 (0%), Referenced to phase 4:EBTL and 8:WBT, Start of Green	
Natural Cycle:	45
Control Type:	Pretimed
Maximum v/c Ratio:	0.49
Intersection Signal Delay:	11.0
Intersection LOS:	B
Intersection Capacity Utilization	61.4%
ICU Level of Service	B
Analysis Period (min)	15

Splits and Phases: 16: 79th Street & Cregier Avenue



Lanes, Volumes, Timings  
58: Paulina Street & 79th Street

11/22/2017


















Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑			↑			↕			↕	
Traffic Volume (vph)	0	540	0	0	419	0	8	0	28	29	0	5
Future Volume (vph)	0	540	0	0	419	0	8	0	28	29	0	5
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Satd. Flow (prot)	0	1306	0	0	1274	0	0	1393	0	0	1434	0
Flt Permitted								0.989			0.962	
Satd. Flow (perm)	0	1306	0	0	1274	0	0	1393	0	0	1434	0
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		664			664			657			669	
Travel Time (s)		15.1			15.1			14.9			15.2	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.67	0.92	0.70	0.66	0.92	0.42
Heavy Vehicles (%)	2%	11%	2%	2%	10%	2%	0%	2%	4%	7%	2%	0%
Bus Blockages (#/hr)	0	0	0	0	0	6	0	0	0	0	0	0
Parking (#/hr)		1			7							
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	587	0	0	455	0	0	52	0	0	56	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		9			9			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.22	1.40	1.22	1.22	1.46	1.22	1.22	1.22	1.22	1.22	1.22	1.22
Turning Speed (mph)	15		9	15		9	15		9	15		9
Sign Control		Stop			Stop			Stop			Stop	

Intersection Summary

Area Type:	CBD
Control Type:	Unsignalized
Intersection Capacity Utilization	48.5%
ICU Level of Service	A
Analysis Period (min)	15

Lanes, Volumes, Timings  
69: Union Avenue & 79th Street

11/22/2017

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	25	519	0	0	408	16	2	8	8	0	0	0
Future Volume (vph)	25	519	0	0	408	16	2	8	8	0	0	0
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Satd. Flow (prot)	0	1311	0	0	1322	0	0	1515	0	0	0	0
Flt Permitted		0.996						0.993				
Satd. Flow (perm)	0	1311	0	0	1322	0	0	1515	0	0	0	0
Link Speed (mph)		30			30			30				30
Link Distance (ft)		665			358			654				664
Travel Time (s)		15.1			8.1			14.9				15.1
Peak Hour Factor	0.52	0.95	0.92	0.92	0.96	0.50	0.50	0.67	0.67	0.92	0.92	0.92
Heavy Vehicles (%)	8%	11%	2%	2%	10%	0%	0%	0%	0%	2%	2%	2%
Parking (#/hr)		0			0							
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	594	0	0	457	0	0	28	0	0	0	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		9			9			0				0
Link Offset(ft)		0			0			0				0
Crosswalk Width(ft)		16			16			16				16
Two way Left Turn Lane												
Headway Factor	1.22	1.39	1.22	1.22	1.39	1.22	1.22	1.22	1.22	1.22	1.22	1.22
Turning Speed (mph)	15		9	15		9	15		9	15		9
Sign Control		Stop			Stop			Stop				Stop

Intersection Summary

Area Type:	CBD
Control Type:	Unsignalized
Intersection Capacity Utilization	67.6%
ICU Level of Service	C
Analysis Period (min)	15

# **PM Reports**

Lanes, Volumes, Timings

1: W. Columbus Ave. & W. 79th St. & S. Sawyer Ave.

11/22/2017



Lane Group	EBL	EBT	EBR	WBL	WBT	SBR2	NEL2	NET	NER	SWT	SWR	Ø1
Lane Configurations	↖	↕		↖	↕	↗	↖	↕		↕		
Traffic Volume (vph)	211	523	5	135	476	3	21	511	147	669	22	
Future Volume (vph)	211	523	5	135	476	3	21	511	147	669	22	
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	
Lane Width (ft)	9	11	9	10	12	12	12	12	12	11	11	
Storage Length (ft)	180		100	0					0		0	
Storage Lanes	1		0	1					0		0	
Taper Length (ft)	75			0								
Satd. Flow (prot)	1248	3645	0	1306	2577	1401	1539	2880	0	2865	0	
Flt Permitted	0.333			0.426			0.337					
Satd. Flow (perm)	437	3645	0	586	2577	1401	546	2880	0	2865	0	
Right Turn on Red			Yes			Yes			Yes			
Satd. Flow (RTOR)		2				111		42				
Link Speed (mph)		30			30			30		30		
Link Distance (ft)		317			345			672		414		
Travel Time (s)		7.2			7.8			15.3		9.4		
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	
Heavy Vehicles (%)	11%	13%	0%	10%	18%	0%	0%	3%	4%	3%	13%	
Bus Blockages (#/hr)	0	0	6	0	6	0	0	0	0	0	0	
Parking (#/hr)		2										
Shared Lane Traffic (%)												
Lane Group Flow (vph)	229	573	0	147	517	3	23	715	0	751	0	
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Right	
Median Width(ft)		10			10			12		12		
Link Offset(ft)		0			0			0		0		
Crosswalk Width(ft)		16			16			16		16		
Two way Left Turn Lane												
Headway Factor	1.39	1.34	1.39	1.33	1.24	1.22	1.22	1.22	1.22	1.28	1.28	
Turning Speed (mph)	15		9	15		9	15		9		9	
Turn Type	pm+pt	NA		Perm	NA	Perm	Perm	NA		NA		
Protected Phases	7	4			8			2		6		1
Permitted Phases	4			8		6 7	2					
Minimum Split (s)	8.0	33.0		33.0	33.0		44.0	44.0		45.0		5.0
Total Split (s)	13.0	50.0		37.0	37.0		44.0	44.0		50.0		6.0
Total Split (%)	13.0%	50.0%		37.0%	37.0%		44.0%	44.0%		50.0%		6%
Yellow Time (s)	3.0	4.0		4.0	4.0		4.0	4.0		4.0		3.0
All-Red Time (s)	0.0	2.0		2.0	2.0		2.0	2.0		2.0		0.0
Lost Time Adjust (s)	1.0	1.0		1.0	1.0		1.0	1.0		1.0		
Total Lost Time (s)	4.0	7.0		7.0	7.0		7.0	7.0		7.0		
Lead/Lag	Lead			Lag	Lag		Lag	Lag				Lead
Lead-Lag Optimize?	Yes			Yes	Yes		Yes	Yes				Yes
Act Effect Green (s)	46.0	43.0		30.0	30.0	56.0	37.0	37.0		43.0		
Actuated g/C Ratio	0.46	0.43		0.30	0.30	0.56	0.37	0.37		0.43		
v/c Ratio	0.84	0.37		0.84	0.67	0.00	0.11	0.65		0.61		
Control Delay	47.4	20.0		44.8	15.1	0.0	22.7	28.0		17.2		
Queue Delay	0.0	0.0		0.0	0.1	0.0	0.0	0.0		0.7		
Total Delay	47.4	20.0		44.8	15.2	0.0	22.7	28.0		17.9		
LOS	D	C		D	B	A	C	C		B		

Lanes, Volumes, Timings

1: W. Columbus Ave. & W. 79th St. & S. Sawyer Ave.

11/22/2017

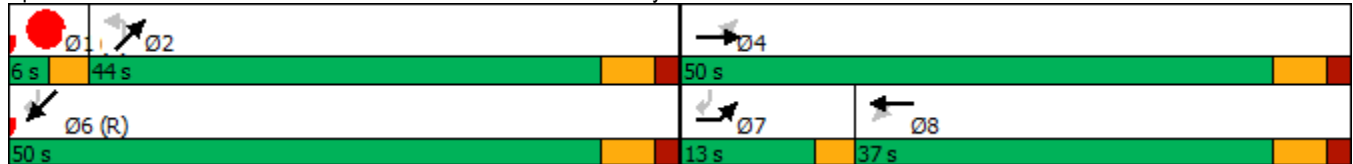


Lane Group	EBL	EBT	EBR	WBL	WBT	SBR2	NEL2	NET	NER	SWT	SWR	Ø1
Approach Delay		27.9			21.7			27.8		17.9		
Approach LOS		C			C			C		B		
Queue Length 50th (ft)	94	87		23	43	0	10	185		197		
Queue Length 95th (ft)	#212	117		m#148	65	0	28	250		m265		
Internal Link Dist (ft)		237			265			592		334		
Turn Bay Length (ft)	180						115					
Base Capacity (vph)	274	1568		175	773	833	202	1092		1231		
Starvation Cap Reductn	0	0		0	16	0	0	0		199		
Spillback Cap Reductn	0	0		0	0	0	0	0		0		
Storage Cap Reductn	0	0		0	0	0	0	0		0		
Reduced v/c Ratio	0.84	0.37		0.84	0.68	0.00	0.11	0.65		0.73		

Intersection Summary

Area Type: CBD  
 Cycle Length: 100  
 Actuated Cycle Length: 100  
 Offset: 86 (86%), Referenced to phase 1:Hold and 6:SWT, Start of Green  
 Natural Cycle: 90  
 Control Type: Pretimed  
 Maximum v/c Ratio: 0.84  
 Intersection Signal Delay: 23.9 Intersection LOS: C  
 Intersection Capacity Utilization 105.0% ICU Level of Service G  
 Analysis Period (min) 15  
 # 95th percentile volume exceeds capacity, queue may be longer.  
 Queue shown is maximum after two cycles.  
 m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 1: W. Columbus Ave. & W. 79th St. & S. Sawyer Ave.



Lanes, Volumes, Timings  
2: S. Kedzie Ave. & W. 79th St.

11/22/2017



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑	↗	↖	↑↑			↔			↔	
Traffic Volume (vph)	0	522	148	26	500	45	107	433	32	25	619	4
Future Volume (vph)	0	522	148	26	500	45	107	433	32	25	619	4
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Width (ft)	12	12	10	9	11	12	12	11	12	12	11	12
Storage Length (ft)	0		0	40		0	0		0	0		0
Storage Lanes	0		1	1		0	0		0	0		0
Taper Length (ft)	0			25			0			0		
Satd. Flow (prot)	0	2773	1206	1074	2541	0	0	2829	0	0	2849	0
Flt Permitted				0.418				0.607			0.909	
Satd. Flow (perm)	0	2773	1206	472	2541	0	0	1733	0	0	2595	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			161		10			9			1	
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		345			652			563			245	
Travel Time (s)		7.8			14.8			12.8			5.6	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	2%	11%	4%	29%	16%	12%	3%	3%	10%	0%	3%	0%
Bus Blockages (#/hr)	0	0	6	0	0	6	0	0	0	0	6	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	567	161	28	592	0	0	622	0	0	704	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		9			9			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.22	1.22	1.37	1.39	1.28	1.22	1.22	1.28	1.22	1.22	1.30	1.22
Turning Speed (mph)	15		9	15		9	15		9	15		9
Turn Type		NA	Perm	Perm	NA		pm+pt	NA		Perm	NA	
Protected Phases		4			8		5	2			6	
Permitted Phases			4	8			2			6		
Minimum Split (s)		23.0	23.0	23.0	23.0		9.0	34.0		34.0	34.0	
Total Split (s)		43.0	43.0	38.0	38.0		9.0	57.0		48.0	48.0	
Total Split (%)		43.0%	43.0%	38.0%	38.0%		9.0%	57.0%		48.0%	48.0%	
Yellow Time (s)		4.0	4.0	4.0	4.0		3.0	4.0		4.0	4.0	
All-Red Time (s)		1.0	1.0	1.0	1.0		0.0	2.0		2.0	2.0	
Lost Time Adjust (s)		1.0	1.0	1.0	1.0			1.0			1.0	
Total Lost Time (s)		6.0	6.0	6.0	6.0			7.0			7.0	
Lead/Lag				Lag	Lag		Lead			Lag	Lag	
Lead-Lag Optimize?				Yes	Yes		Yes			Yes	Yes	
Act Effct Green (s)		37.0	37.0	32.0	32.0			50.0			41.0	
Actuated g/C Ratio		0.37	0.37	0.32	0.32			0.50			0.41	
v/c Ratio		0.55	0.29	0.19	0.72			0.70			0.66	
Control Delay		14.5	1.4	28.6	35.5			23.4			4.8	
Queue Delay		0.2	0.0	0.0	0.0			0.8			0.1	
Total Delay		14.7	1.4	28.6	35.5			24.2			4.9	
LOS		B	A	C	D			C			A	
Approach Delay		11.8			35.2			24.2			4.9	

Lane Group	Ø7
Lane Configurations	
Traffic Volume (vph)	
Future Volume (vph)	
Ideal Flow (vphpl)	
Lane Width (ft)	
Storage Length (ft)	
Storage Lanes	
Taper Length (ft)	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Right Turn on Red	
Satd. Flow (RTOR)	
Link Speed (mph)	
Link Distance (ft)	
Travel Time (s)	
Peak Hour Factor	
Heavy Vehicles (%)	
Bus Blockages (#/hr)	
Shared Lane Traffic (%)	
Lane Group Flow (vph)	
Enter Blocked Intersection	
Lane Alignment	
Median Width(ft)	
Link Offset(ft)	
Crosswalk Width(ft)	
Two way Left Turn Lane	
Headway Factor	
Turning Speed (mph)	
Turn Type	
Protected Phases	7
Permitted Phases	
Minimum Split (s)	5.0
Total Split (s)	5.0
Total Split (%)	5%
Yellow Time (s)	3.0
All-Red Time (s)	0.0
Lost Time Adjust (s)	
Total Lost Time (s)	
Lead/Lag	Lead
Lead-Lag Optimize?	Yes
Act Effct Green (s)	
Actuated g/C Ratio	
v/c Ratio	
Control Delay	
Queue Delay	
Total Delay	
LOS	
Approach Delay	



Lanes, Volumes, Timings  
 2: S. Kedzie Ave. & W. 79th St.

11/22/2017

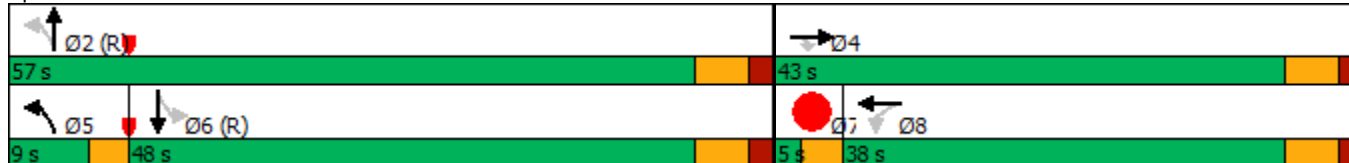


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Approach LOS	B			D			C			A		
Queue Length 50th (ft)		62	0	13	171			125			22	
Queue Length 95th (ft)		79	m3	37	237			171			m14	
Internal Link Dist (ft)		265			572			483			165	
Turn Bay Length (ft)				40								
Base Capacity (vph)		1026	547	151	819			892			1064	
Starvation Cap Reductn		78	0	0	0			0			22	
Spillback Cap Reductn		0	0	0	0			80			0	
Storage Cap Reductn		0	0	0	0			0			0	
Reduced v/c Ratio		0.60	0.29	0.19	0.72			0.77			0.68	

Intersection Summary

Area Type: CBD  
 Cycle Length: 100  
 Actuated Cycle Length: 100  
 Offset: 91 (91%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green  
 Natural Cycle: 75  
 Control Type: Pretimed  
 Maximum v/c Ratio: 0.72  
 Intersection Signal Delay: 18.3  
 Intersection LOS: B  
 Intersection Capacity Utilization 88.7%  
 ICU Level of Service E  
 Analysis Period (min) 15  
 m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 2: S. Kedzie Ave. & W. 79th St.






















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Lane Group	Ø7
Approach LOS	
Queue Length 50th (ft)	
Queue Length 95th (ft)	
Internal Link Dist (ft)	
Turn Bay Length (ft)	
Base Capacity (vph)	
Starvation Cap Reductn	
Spillback Cap Reductn	
Storage Cap Reductn	
Reduced v/c Ratio	
Intersection Summary	

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Lanes, Volumes, Timings  
 3: W. Columbus Ave. & S. Kedzie Ave.

11/22/2017

												
Lane Group	NBL	NBT	NBR	SBL	SBT	SBR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Traffic Volume (vph)	0	401	77	8	559	481	354	365	3	86	410	11
Future Volume (vph)	0	401	77	8	559	481	354	365	3	86	410	11
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Width (ft)	12	11	12	12	10	10	11	11	11	10	11	12
Storage Length (ft)	0		0	0		100	0		0	90		0
Storage Lanes	0		0	0		1	1		0	1		0
Taper Length (ft)	0			0			0			25		
Satd. Flow (prot)	0	2792	0	0	2742	1224	1417	2852	0	1422	2745	0
Flt Permitted					0.944		0.286			0.516		
Satd. Flow (perm)	0	2792	0	0	2591	1224	427	2852	0	772	2745	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		22				46		1				2
Link Speed (mph)		30			30			30				30
Link Distance (ft)		245			494			414				680
Travel Time (s)		5.6			11.2			9.4				15.5
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	0%	4%	4%	50%	4%	5%	5%	4%	33%	1%	8%	6%
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	520	0	0	617	523	385	400	0	93	458	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			11			11	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.22	1.28	1.22	1.22	1.33	1.33	1.28	1.28	1.28	1.33	1.28	1.22
Turning Speed (mph)	15		9	15		9	15		9	15		9
Turn Type		NA		Perm	NA	pm+ov	pm+pt	NA		Perm	NA	
Protected Phases		2			6	7	7	4				8
Permitted Phases	2			6		6	4			8		
Minimum Split (s)	28.0	28.0		28.0	28.0	8.0	8.0	26.0		26.0	26.0	
Total Split (s)	33.0	33.0		33.0	33.0	41.0	41.0	67.0		26.0	26.0	
Total Split (%)	33.0%	33.0%		33.0%	33.0%	41.0%	41.0%	67.0%		26.0%	26.0%	
Yellow Time (s)	4.0	4.0		4.0	4.0	3.0	3.0	4.0		4.0	4.0	
All-Red Time (s)	2.0	2.0		2.0	2.0	0.0	0.0	2.0		2.0	2.0	
Lost Time Adjust (s)		1.0			1.0	1.0	1.0	1.0		1.0	1.0	
Total Lost Time (s)		7.0			7.0	4.0	4.0	7.0		7.0	7.0	
Lead/Lag						Lead	Lead			Lag	Lag	
Lead-Lag Optimize?						Yes	Yes			Yes	Yes	
Act Effct Green (s)		26.0			26.0	70.0	63.0	60.0		19.0	19.0	
Actuated g/C Ratio		0.26			0.26	0.70	0.63	0.60		0.19	0.19	
v/c Ratio		0.70			0.92	0.60	0.61	0.23		0.64	0.88	
Control Delay		21.3			56.3	10.5	23.0	16.1		58.7	58.3	
Queue Delay		4.8			0.0	0.0	1.4	0.0		0.0	0.0	
Total Delay		26.1			56.3	10.5	24.4	16.1		58.7	58.3	
LOS		C			E	B	C	B		E	E	
Approach Delay		26.1			35.3			20.2			58.4	
Approach LOS		C			D			C			E	

Lanes, Volumes, Timings  
 3: W. Columbus Ave. & S. Kedzie Ave.

11/22/2017



Lane Group	NBL	NBT	NBR	SBL	SBT	SBR	NEL	NET	NER	SWL	SWT	SWR
Queue Length 50th (ft)		132			201	136	186	97		55	150	
Queue Length 95th (ft)		164			#308	229	m288	m131		#128	#239	
Internal Link Dist (ft)		165			414			334			600	
Turn Bay Length (ft)						100				90		
Base Capacity (vph)		742			673	870	635	1711		146	523	
Starvation Cap Reductn		157			0	0	109	0		0	0	
Spillback Cap Reductn		0			0	0	0	0		0	0	
Storage Cap Reductn		0			0	0	0	0		0	0	
Reduced v/c Ratio		0.89			0.92	0.60	0.73	0.23		0.64	0.88	

Intersection Summary

























Area Type: CBD  
 Cycle Length: 100  
 Actuated Cycle Length: 100  
 Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green  
 Natural Cycle: 65  
 Control Type: Pretimed  
 Maximum v/c Ratio: 0.92  
 Intersection Signal Delay: 34.0 Intersection LOS: C  
 Intersection Capacity Utilization 84.9% ICU Level of Service E  
 Analysis Period (min) 15  
 # 95th percentile volume exceeds capacity, queue may be longer.  
 Queue shown is maximum after two cycles.  
 m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 3: W. Columbus Ave. & S. Kedzie Ave.



Lanes, Volumes, Timings  
4: Ashland Avenue & 79th Street

11/22/2017

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	75	379	30	63	439	67	62	368	57	48	826	96
Future Volume (vph)	75	379	30	63	439	67	62	368	57	48	826	96
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Width (ft)	9	10	9	9	10	9	10	11	11	10	11	11
Storage Length (ft)	80		30	60		30	100		30	100		30
Storage Lanes	1		1	1		1	1		1	1		1
Taper Length (ft)	25			25			25			25		
Satd. Flow (prot)	1385	1072	1152	1345	1189	1110	1282	2400	880	1355	2394	816
Flt Permitted	0.349			0.415			0.208			0.514		
Satd. Flow (perm)	500	1072	1071	571	1189	1047	274	2400	760	684	2394	691
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			50			50			50			50
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		666			1315			665			670	
Travel Time (s)		15.1			29.9			15.1			15.2	
Confl. Peds. (#/hr)	41		54	54		41	47		41	41		47
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Heavy Vehicles (%)	0%	10%	5%	3%	10%	9%	12%	6%	4%	6%	5%	9%
Bus Blockages (#/hr)	0	0	6	0	0	6	0	0	8	0	0	8
Parking (#/hr)		24			7			38	38		42	42
Shared Lane Traffic (%)												
Lane Group Flow (vph)	82	416	33	69	482	74	68	404	63	53	908	105
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			10			10	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.39	1.79	1.44	1.39	1.59	1.44	1.33	1.54	1.99	1.33	1.57	2.06
Turning Speed (mph)	15		9	15		9	15		9	15		9
Turn Type	Perm	NA	Perm	Perm	NA	Perm	Perm	NA	Perm	Perm	NA	Perm
Protected Phases		4			8			2			6	
Permitted Phases	4		4	8		8	2		2	6		6
Minimum Split (s)	38.0	38.0	38.0	38.0	38.0	38.0	27.0	27.0	27.0	27.0	27.0	27.0
Total Split (s)	57.0	57.0	57.0	57.0	57.0	57.0	53.0	53.0	53.0	53.0	53.0	53.0
Total Split (%)	51.8%	51.8%	51.8%	51.8%	51.8%	51.8%	48.2%	48.2%	48.2%	48.2%	48.2%	48.2%
Yellow Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
All-Red Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Lost Time Adjust (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Total Lost Time (s)	9.0	9.0	9.0	9.0	9.0	9.0	9.0	9.0	9.0	9.0	9.0	9.0
Lead/Lag												
Lead-Lag Optimize?												
Act Effct Green (s)	48.0	48.0	48.0	48.0	48.0	48.0	44.0	44.0	44.0	44.0	44.0	44.0
Actuated g/C Ratio	0.44	0.44	0.44	0.44	0.44	0.44	0.40	0.40	0.40	0.40	0.40	0.40
v/c Ratio	0.38	0.89	0.07	0.28	0.93	0.15	0.62	0.42	0.19	0.19	0.95	0.34
Control Delay	27.3	52.0	2.8	23.5	56.2	10.1	54.8	25.5	9.5	24.0	51.8	16.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	27.3	52.0	2.8	23.5	56.2	10.1	54.8	25.5	9.5	24.0	51.8	16.1

Lanes, Volumes, Timings  
4: Ashland Avenue & 79th Street

11/22/2017

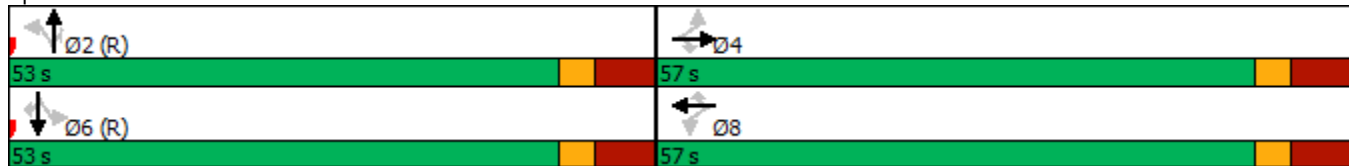


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
LOS	C	D	A	C	E	B	D	C	A	C	D	B
Approach Delay		45.1			47.1			27.3			46.9	
Approach LOS		D			D			C			D	
Queue Length 50th (ft)	38	265	0	28	333	11	38	106	6	24	321	25
Queue Length 95th (ft)	83	#461	11	61	#543	32	#112	150	34	55	#460	71
Internal Link Dist (ft)		586			1235			585			590	
Turn Bay Length (ft)	80		30	60		30	100		30	100		30
Base Capacity (vph)	218	467	495	249	518	485	109	960	334	273	957	306
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.38	0.89	0.07	0.28	0.93	0.15	0.62	0.42	0.19	0.19	0.95	0.34

Intersection Summary






















Area Type: CBD  
 Cycle Length: 110  
 Actuated Cycle Length: 110  
 Offset: 43 (39%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green  
 Natural Cycle: 90  
 Control Type: Pretimed  
 Maximum v/c Ratio: 0.95  
 Intersection Signal Delay: 42.8 Intersection LOS: D  
 Intersection Capacity Utilization 124.7% ICU Level of Service H  
 Analysis Period (min) 15  
 # 95th percentile volume exceeds capacity, queue may be longer.  
 Queue shown is maximum after two cycles.

Splits and Phases: 4: Ashland Avenue & 79th Street



Lanes, Volumes, Timings  
 5: Loomis Blvd & 79th Street

11/22/2017

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	25	504	25	25	374	25	25	100	25	25	100	25
Future Volume (vph)	25	504	25	25	374	25	25	100	25	25	100	25
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (ft)	60		30	60		30	0		0	0		0
Storage Lanes	1		1	1		1	0		0	0		0
Taper Length (ft)	25			25			0			0		
Satd. Flow (prot)	1509	1429	1318	1509	1429	1350	0	1541	0	0	1541	0
Flt Permitted	0.485			0.381				0.940			0.940	
Satd. Flow (perm)	770	1429	1318	605	1429	1350	0	1460	0	0	1460	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			18			24		17			17	
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		1315			357			644			631	
Travel Time (s)		29.9			8.1			14.6			14.3	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Bus Blockages (#/hr)	0	0	6	0	0	0	0	0	0	0	0	0
Parking (#/hr)		0			0							
Shared Lane Traffic (%)												
Lane Group Flow (vph)	27	548	27	27	407	27	0	163	0	0	163	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.22	1.39	1.26	1.22	1.39	1.22	1.22	1.22	1.22	1.22	1.22	1.22
Turning Speed (mph)	15		9	15		9	15		9	15		9
Turn Type	Perm	NA	Perm	Perm	NA	Perm	Perm	NA		Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4		4	8		8	2			6		
Minimum Split (s)	17.0	17.0	17.0	17.0	17.0	17.0	18.0	18.0		18.0	18.0	
Total Split (s)	37.0	37.0	37.0	37.0	37.0	37.0	18.0	18.0		18.0	18.0	
Total Split (%)	67.3%	67.3%	67.3%	67.3%	67.3%	67.3%	32.7%	32.7%		32.7%	32.7%	
Yellow Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	
All-Red Time (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Lost Time Adjust (s)	1.0	1.0	1.0	1.0	1.0	1.0		1.0			1.0	
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0		4.0			4.0	
Lead/Lag												
Lead-Lag Optimize?												
Act Effect Green (s)	33.0	33.0	33.0	33.0	33.0	33.0		14.0			14.0	
Actuated g/C Ratio	0.60	0.60	0.60	0.60	0.60	0.60		0.25			0.25	
v/c Ratio	0.06	0.64	0.03	0.07	0.47	0.03		0.42			0.42	
Control Delay	4.1	8.6	2.2	5.3	8.5	2.4		19.4			19.4	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0		0.0			0.0	
Total Delay	4.1	8.6	2.2	5.3	8.5	2.4		19.4			19.4	
LOS	A	A	A	A	A	A		B			B	
Approach Delay		8.1			7.9			19.4			19.4	
Approach LOS		A			A			B			B	

Lanes, Volumes, Timings  
5: Loomis Blvd & 79th Street

11/22/2017

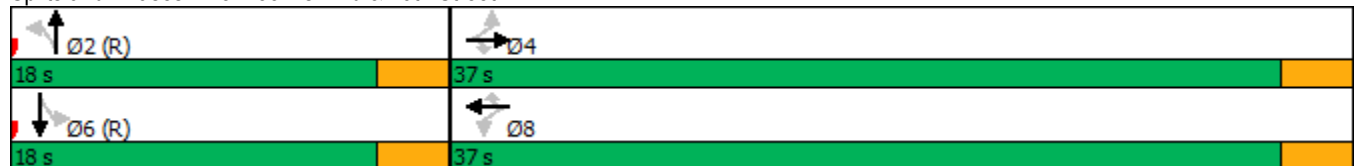


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Queue Length 50th (ft)	3	91	1	3	64	0		40			40	
Queue Length 95th (ft)	m7	m161	m3	11	118	7		86			86	
Internal Link Dist (ft)		1235			277			564			551	
Turn Bay Length (ft)	60		30	60		30						
Base Capacity (vph)	462	857	798	363	857	819		384			384	
Starvation Cap Reductn	0	0	0	0	0	0		0			0	
Spillback Cap Reductn	0	0	0	0	0	0		0			0	
Storage Cap Reductn	0	0	0	0	0	0		0			0	
Reduced v/c Ratio	0.06	0.64	0.03	0.07	0.47	0.03		0.42			0.42	

Intersection Summary

Area Type: CBD  
 Cycle Length: 55  
 Actuated Cycle Length: 55  
 Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green  
 Natural Cycle: 50  
 Control Type: Pretimed  
 Maximum v/c Ratio: 0.64  
 Intersection Signal Delay: 10.7  
 Intersection LOS: B  
 Intersection Capacity Utilization 50.6%  
 ICU Level of Service A  
 Analysis Period (min) 15  
 m Volume for 95th percentile queue is metered by upstream signal.






















Splits and Phases: 5: Loomis Blvd & 79th Street





Lanes, Volumes, Timings  
6: Morgan Street & 79th Street

11/22/2017

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	25	511	25	25	398	25	25	100	25	25	100	25
Future Volume (vph)	25	511	25	25	398	25	25	100	25	25	100	25
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (ft)	100		30	100		30	0		0	0		0
Storage Lanes	1		1	1		1	0		0	0		0
Taper Length (ft)	25			25			0			0		
Satd. Flow (prot)	1509	1429	1350	1509	1414	1350	0	1541	0	0	1541	0
Flt Permitted	0.462			0.368				0.935			0.935	
Satd. Flow (perm)	734	1429	1350	584	1414	1350	0	1452	0	0	1452	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			18			19		16			16	
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		323			1321			593			659	
Travel Time (s)		7.3			30.0			13.5			15.0	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Parking (#/hr)		0			2							
Shared Lane Traffic (%)												
Lane Group Flow (vph)	27	555	27	27	433	27	0	163	0	0	163	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.22	1.39	1.22	1.22	1.41	1.22	1.22	1.22	1.22	1.22	1.22	1.22
Turning Speed (mph)	15		9	15		9	15		9	15		9
Turn Type	Perm	NA	Perm	Perm	NA	Perm	Perm	NA		Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4		4	8		8	2			6		
Minimum Split (s)	17.0	17.0	17.0	17.0	17.0	17.0	21.0	21.0		21.0	21.0	
Total Split (s)	39.0	39.0	39.0	39.0	39.0	39.0	21.0	21.0		21.0	21.0	
Total Split (%)	65.0%	65.0%	65.0%	65.0%	65.0%	65.0%	35.0%	35.0%		35.0%	35.0%	
Yellow Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0		1.0	1.0	
Lost Time Adjust (s)	1.0	1.0	1.0	1.0	1.0	1.0		1.0			1.0	
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0	5.0		5.0			5.0	
Lead/Lag												
Lead-Lag Optimize?												
Act Effct Green (s)	34.0	34.0	34.0	34.0	34.0	34.0		16.0			16.0	
Actuated g/C Ratio	0.57	0.57	0.57	0.57	0.57	0.57		0.27			0.27	
v/c Ratio	0.07	0.69	0.03	0.08	0.54	0.03		0.41			0.41	
Control Delay	6.4	14.8	3.7	4.6	11.8	2.3		20.0			20.0	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0		0.0			0.0	
Total Delay	6.4	14.8	3.7	4.6	11.8	2.3		20.0			20.0	
LOS	A	B	A	A	B	A		C			C	
Approach Delay		13.9			10.9			20.0			20.0	
Approach LOS		B			B			C			C	
Queue Length 50th (ft)	4	126	1	5	231	3		43			43	

Lanes, Volumes, Timings  
6: Morgan Street & 79th Street

11/22/2017

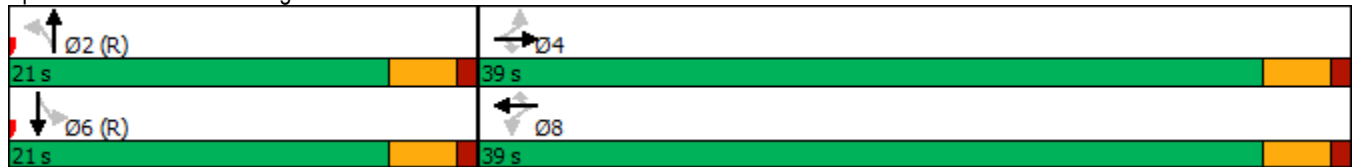


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Queue Length 95th (ft)	13	232	10	m6	m234	m4		91			91	
Internal Link Dist (ft)		243			1241			513			579	
Turn Bay Length (ft)	100		30	100		30						
Base Capacity (vph)	415	809	772	330	801	773		398			398	
Starvation Cap Reductn	0	0	0	0	0	0		0			0	
Spillback Cap Reductn	0	0	0	0	0	0		0			0	
Storage Cap Reductn	0	0	0	0	0	0		0			0	
Reduced v/c Ratio	0.07	0.69	0.03	0.08	0.54	0.03		0.41			0.41	

Intersection Summary

























Area Type: CBD  
 Cycle Length: 60  
 Actuated Cycle Length: 60  
 Offset: 22 (37%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green  
 Natural Cycle: 60  
 Control Type: Pretimed  
 Maximum v/c Ratio: 0.69  
 Intersection Signal Delay: 14.3  
 Intersection LOS: B  
 Intersection Capacity Utilization 54.0%  
 ICU Level of Service A  
 Analysis Period (min) 15  
 m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 6: Morgan Street & 79th Street



Lanes, Volumes, Timings  
7: Halsted Street & 79th Street

11/22/2017

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	53	463	70	74	382	38	78	313	83	73	594	53
Future Volume (vph)	53	463	70	74	382	38	78	313	83	73	594	53
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Width (ft)	9	10	9	9	10	9	10	11	13	10	10	13
Storage Length (ft)	100		30	60		30	100		100	100		100
Storage Lanes	1		1	1		1	1		1	1		1
Taper Length (ft)	25			25			25			25		
Satd. Flow (prot)	1385	1155	1215	1385	1221	1203	1436	1520	1368	1395	1426	1355
Flt Permitted	0.390			0.303			0.186			0.476		
Satd. Flow (perm)	569	1155	1215	442	1221	1203	281	1520	1368	699	1426	1355
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			36			36			71			36
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		1321			667			631			665	
Travel Time (s)		30.0			15.2			14.3			15.1	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	0%	10%	2%	0%	9%	3%	0%	3%	4%	3%	6%	5%
Parking (#/hr)		12			4							
Shared Lane Traffic (%)												
Lane Group Flow (vph)	58	503	76	80	415	41	85	340	90	79	646	58
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			10			10	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.39	1.64	1.39	1.39	1.56	1.39	1.33	1.28	1.18	1.33	1.33	1.18
Turning Speed (mph)	15		9	15		9	15		9	15		9
Turn Type	Perm	NA	Perm	Perm	NA	Perm	Perm	NA	Perm	Perm	NA	Perm
Protected Phases		4			8			2			6	
Permitted Phases	4		4	8		8	2		2	6		6
Minimum Split (s)	30.0	30.0	30.0	30.0	30.0	30.0	27.0	27.0	27.0	27.0	27.0	27.0
Total Split (s)	59.0	59.0	59.0	59.0	59.0	59.0	61.0	61.0	61.0	61.0	61.0	61.0
Total Split (%)	49.2%	49.2%	49.2%	49.2%	49.2%	49.2%	50.8%	50.8%	50.8%	50.8%	50.8%	50.8%
Yellow Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
All-Red Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lost Time Adjust (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Total Lost Time (s)	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0
Lead/Lag												
Lead-Lag Optimize?												
Act Effct Green (s)	51.0	51.0	51.0	51.0	51.0	51.0	53.0	53.0	53.0	53.0	53.0	53.0
Actuated g/C Ratio	0.42	0.42	0.42	0.42	0.42	0.42	0.44	0.44	0.44	0.44	0.44	0.44
v/c Ratio	0.24	1.03	0.14	0.43	0.80	0.08	0.69	0.51	0.14	0.26	1.03	0.09
Control Delay	20.7	72.3	11.0	33.2	43.6	7.9	57.8	27.4	7.1	24.0	76.8	9.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	20.7	72.3	11.0	33.2	43.6	7.9	57.8	27.4	7.1	24.0	76.8	9.8
LOS	C	E	B	C	D	A	E	C	A	C	E	A
Approach Delay		60.3			39.3			28.9			66.5	

Lanes, Volumes, Timings  
7: Halsted Street & 79th Street

11/22/2017

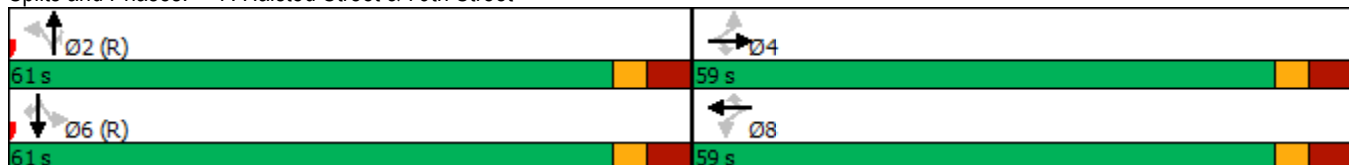


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Approach LOS	E			D			C			E		
Queue Length 50th (ft)	26	~420	19	43	275	2	52	186	8	38	~534	9
Queue Length 95th (ft)	m40	#634	m34	94	#451	24	#143	275	39	76	#763	35
Internal Link Dist (ft)	1241			587			551			585		
Turn Bay Length (ft)	100		30	60		30	100		100	100		100
Base Capacity (vph)	241	490	537	187	518	531	124	671	643	308	629	618
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.24	1.03	0.14	0.43	0.80	0.08	0.69	0.51	0.14	0.26	1.03	0.09

Intersection Summary

Area Type: CBD  
 Cycle Length: 120  
 Actuated Cycle Length: 120  
 Offset: 56 (47%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green  
 Natural Cycle: 130  
 Control Type: Pretimed  
 Maximum v/c Ratio: 1.03  
 Intersection Signal Delay: 51.2 Intersection LOS: D  
 Intersection Capacity Utilization 127.7% ICU Level of Service H  
 Analysis Period (min) 15  
 ~ Volume exceeds capacity, queue is theoretically infinite.  
 Queue shown is maximum after two cycles.  
 # 95th percentile volume exceeds capacity, queue may be longer.  
 Queue shown is maximum after two cycles.  
 m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 7: Halsted Street & 79th Street



Lanes, Volumes, Timings  
8: 79th Street & 150 W.

11/22/2017



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Volume (vph)	10	733	10	10	424	10	10	10	10	10	10	10
Future Volume (vph)	10	733	10	10	424	10	10	10	10	10	10	10
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Satd. Flow (prot)	0	1425	0	0	1424	0	0	1492	0	0	1492	0
Flt Permitted		0.994			0.982			0.930			0.930	
Satd. Flow (perm)	0	1418	0	0	1399	0	0	1411	0	0	1411	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		2			3			11			11	
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		558			495			173			227	
Travel Time (s)		12.7			11.3			3.9			5.2	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Parking (#/hr)		0			0							
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	819	0	0	483	0	0	33	0	0	33	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			0			0	
Link Offset(ft)		0			0			0			-30	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.22	1.39	1.22	1.22	1.39	1.22	1.22	1.22	1.22	1.22	1.22	1.22
Turning Speed (mph)	15		9	15		9	15		9	15		9
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Minimum Split (s)	9.0	9.0		9.0	9.0		21.0	21.0		21.0	21.0	
Total Split (s)	59.0	59.0		59.0	59.0		21.0	21.0		21.0	21.0	
Total Split (%)	73.8%	73.8%		73.8%	73.8%		26.3%	26.3%		26.3%	26.3%	
Yellow Time (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
All-Red Time (s)	1.0	1.0		1.0	1.0		1.0	1.0		1.0	1.0	
Lost Time Adjust (s)		1.0			1.0			1.0			1.0	
Total Lost Time (s)		5.0			5.0			5.0			5.0	
Lead/Lag												
Lead-Lag Optimize?												
Act Effct Green (s)		54.0			54.0			16.0			16.0	
Actuated g/C Ratio		0.68			0.68			0.20			0.20	
v/c Ratio		0.86			0.51			0.11			0.11	
Control Delay		21.5			9.3			20.9			20.9	
Queue Delay		0.0			0.0			0.0			0.0	
Total Delay		21.5			9.3			20.9			20.9	
LOS		C			A			C			C	
Approach Delay		21.5			9.3			20.9			20.9	
Approach LOS		C			A			C			C	
Queue Length 50th (ft)		269			85			9			9	
Queue Length 95th (ft)		#575			122			32			32	
Internal Link Dist (ft)		478			415			93			147	
Turn Bay Length (ft)												

Lanes, Volumes, Timings  
 8: 79th Street & 150 W.

11/22/2017



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Base Capacity (vph)		957			945			291			291	
Starvation Cap Reductn		0			0			0			0	
Spillback Cap Reductn		0			0			0			0	
Storage Cap Reductn		0			0			0			0	
Reduced v/c Ratio		0.86			0.51			0.11			0.11	

Intersection Summary

Area Type: CBD  
 Cycle Length: 80  
 Actuated Cycle Length: 80  
 Offset: 51 (64%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green  
 Natural Cycle: 70  
 Control Type: Pretimed  
 Maximum v/c Ratio: 0.86  
 Intersection Signal Delay: 17.2  
 Intersection LOS: B  
 Intersection Capacity Utilization 74.1%  
 ICU Level of Service D  
 Analysis Period (min) 15  
 # 95th percentile volume exceeds capacity, queue may be longer.  
 Queue shown is maximum after two cycles.

Splits and Phases: 8: 79th Street & 150 W.



Lanes, Volumes, Timings  
 9: Lafayette Avenue & 79th Street

11/22/2017



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑↑↑		↖	↑↑					↘	↑↑↑↑	↗
Traffic Volume (vph)	0	577	193	239	439	0	0	0	0	165	1110	77
Future Volume (vph)	0	577	193	239	439	0	0	0	0	165	1110	77
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Width (ft)	11	11	11	12	12	12	12	12	12	12	10	8
Storage Length (ft)	100		0	0		0	0		0	0		0
Storage Lanes	2		0	1		0	0		0	1		1
Taper Length (ft)	25			0			0			0		
Satd. Flow (prot)	0	4336	0	1494	2557	0	0	0	0	1203	3674	978
Flt Permitted				0.225						0.950	0.999	
Satd. Flow (perm)	0	4336	0	331	2557	0	0	0	0	1203	3674	950
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		93										109
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		330			322			676			495	
Travel Time (s)		7.5			7.3			15.4			11.3	
Confl. Peds. (#/hr)	5		130	130		5	20					20
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	2%	9%	19%	3%	8%	2%	2%	2%	2%	10%	6%	22%
Bus Blockages (#/hr)	0	0	0	0	15	0	0	0	0	0	0	0
Parking (#/hr)					10							
Shared Lane Traffic (%)										10%		
Lane Group Flow (vph)	0	837	0	260	477	0	0	0	0	161	1225	84
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.28	1.28	1.28	1.22	1.40	1.22	1.22	1.22	1.22	1.22	1.33	1.46
Turning Speed (mph)	15		9	15		9	15		9	15		9
Turn Type		NA		pm+pt	NA					Perm	NA	Perm
Protected Phases		4		3	8						6	
Permitted Phases				8						6		6
Minimum Split (s)		20.0		8.0	26.0					33.0	33.0	33.0
Total Split (s)		24.0		18.0	42.0					38.0	38.0	38.0
Total Split (%)		30.0%		22.5%	52.5%					47.5%	47.5%	47.5%
Yellow Time (s)		3.0		3.0	3.0					3.0	3.0	3.0
All-Red Time (s)		5.0		0.0	5.0					2.0	2.0	2.0
Lost Time Adjust (s)		1.0		1.0	1.0					1.0	1.0	1.0
Total Lost Time (s)		9.0		4.0	9.0					6.0	6.0	6.0
Lead/Lag		Lag		Lead								
Lead-Lag Optimize?												
Act Effct Green (s)		15.0		38.0	33.0					32.0	32.0	32.0
Actuated g/C Ratio		0.19		0.48	0.41					0.40	0.40	0.40
v/c Ratio		0.94		0.72	0.45					0.33	0.83	0.19
Control Delay		40.5		23.4	14.2					19.1	27.9	3.2
Queue Delay		0.0		0.5	0.0					0.0	0.0	0.0
Total Delay		40.5		23.9	14.2					19.1	27.9	3.2

Lanes, Volumes, Timings  
 9: Lafayette Avenue & 79th Street

11/22/2017

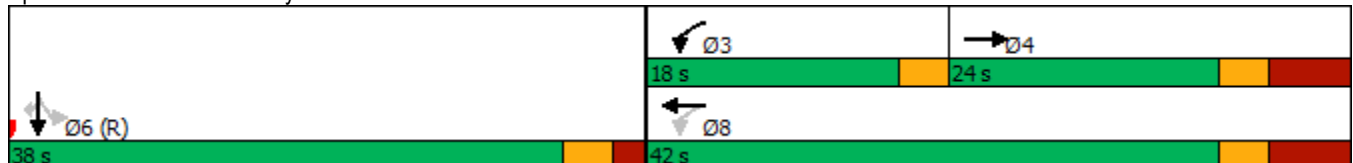


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
LOS		D		C	B					B	C	A
Approach Delay		40.5			17.6						25.6	
Approach LOS		D			B						C	
Queue Length 50th (ft)		94		77	77					62	207	0
Queue Length 95th (ft)		m#150		m#112	m104					118	270	18
Internal Link Dist (ft)		250			242			596			415	
Turn Bay Length (ft)												
Base Capacity (vph)		888		360	1054					481	1469	445
Starvation Cap Reductn		0		10	0					0	0	0
Spillback Cap Reductn		0		0	0					0	0	0
Storage Cap Reductn		0		0	0					0	0	0
Reduced v/c Ratio		0.94		0.74	0.45					0.33	0.83	0.19

Intersection Summary

Area Type: CBD  
 Cycle Length: 80  
 Actuated Cycle Length: 80  
 Offset: 44 (55%), Referenced to phase 6:SBTL, Start of Green  
 Natural Cycle: 65  
 Control Type: Pretimed  
 Maximum v/c Ratio: 0.94  
 Intersection Signal Delay: 27.7  
 Intersection LOS: C  
 Intersection Capacity Utilization 70.0%  
 ICU Level of Service C  
 Analysis Period (min) 15  
 # 95th percentile volume exceeds capacity, queue may be longer.  
 Queue shown is maximum after two cycles.  
 m Volume for 95th percentile queue is metered by upstream signal.























Splits and Phases: 9: Lafayette Avenue & 79th Street





Lanes, Volumes, Timings  
10: State Street & 79th Street

11/22/2017

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	 	 			 			 				
Traffic Volume (vph)	330	412	0	0	386	152	292	212	214	0	0	0
Future Volume (vph)	330	412	0	0	386	152	292	212	214	0	0	0
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Width (ft)	12	12	12	12	12	12	12	11	16	12	12	12
Satd. Flow (prot)	2927	2649	0	0	2741	0	1373	2741	1530	0	0	0
Flt Permitted	0.288						0.950	0.981				
Satd. Flow (perm)	825	2649	0	0	2741	0	1364	2734	1325	0	0	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)					91				109			
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		322			463			632			634	
Travel Time (s)		7.3			10.5			14.4			14.4	
Confl. Peds. (#/hr)	82		240	240		82	8		145	145		8
Peak Hour Factor	0.89	0.90	0.92	0.92	0.90	0.78	0.91	0.95	0.78	0.92	0.92	0.92
Bus Blockages (#/hr)	0	15	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)		18										
Shared Lane Traffic (%)							45%					
Lane Group Flow (vph)	371	458	0	0	624	0	177	367	274	0	0	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		24			24			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.22	1.44	1.22	1.22	1.22	1.22	1.22	1.28	1.05	1.22	1.22	1.22
Turning Speed (mph)	15		9	15		9	15		9	15		9
Turn Type	pm+pt	NA			NA		Perm	NA	Perm			
Protected Phases	7	4			8			2				
Permitted Phases	4						2		2			
Minimum Split (s)	8.0	26.0			22.0		33.0	33.0	33.0			
Total Split (s)	13.0	44.0			31.0		36.0	36.0	36.0			
Total Split (%)	16.3%	55.0%			38.8%		45.0%	45.0%	45.0%			
Yellow Time (s)	3.0	3.0			3.0		3.0	3.0	3.0			
All-Red Time (s)	0.0	5.0			5.0		2.0	2.0	2.0			
Lost Time Adjust (s)	1.0	1.0			1.0		1.0	1.0	1.0			
Total Lost Time (s)	4.0	9.0			9.0		6.0	6.0	6.0			
Lead/Lag	Lead				Lag							
Lead-Lag Optimize?												
Act Effct Green (s)	40.0	35.0			22.0		30.0	30.0	30.0			
Actuated g/C Ratio	0.50	0.44			0.28		0.38	0.38	0.38			
v/c Ratio	0.57	0.40			0.76		0.35	0.36	0.48			
Control Delay	8.6	9.2			29.8		20.4	19.3	14.5			
Queue Delay	0.0	0.0			0.0		0.0	0.0	0.0			
Total Delay	8.6	9.2			29.8		20.4	19.3	14.5			
LOS	A	A			C		C	B	B			
Approach Delay		8.9			29.8			17.9				
Approach LOS		A			C			B				
Queue Length 50th (ft)	42	92			128		68	71	58			

Lanes, Volumes, Timings  
 10: State Street & 79th Street

11/22/2017

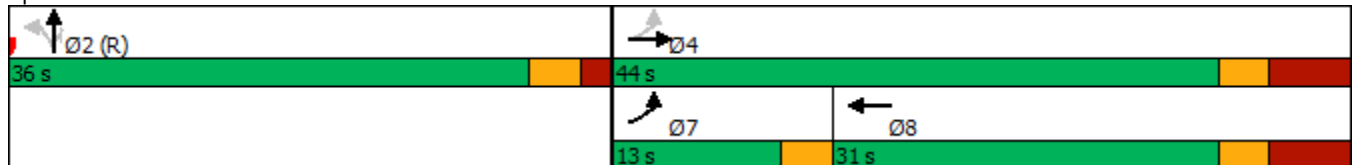


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Queue Length 95th (ft)	m50	m118			191		125	107	97			
Internal Link Dist (ft)		242			383			552			554	
Turn Bay Length (ft)												
Base Capacity (vph)	648	1158			819		511	1025	565			
Starvation Cap Reductn	0	0			0		0	0	0			
Spillback Cap Reductn	0	0			0		0	0	0			
Storage Cap Reductn	0	0			0		0	0	0			
Reduced v/c Ratio	0.57	0.40			0.76		0.35	0.36	0.48			

Intersection Summary

Area Type: CBD  
 Cycle Length: 80  
 Actuated Cycle Length: 80  
 Offset: 0 (0%), Referenced to phase 2:NBTL, Start of Green  
 Natural Cycle: 65  
 Control Type: Pretimed  
 Maximum v/c Ratio: 0.76  
 Intersection Signal Delay: 17.9  
 Intersection LOS: B  
 Intersection Capacity Utilization 70.0%  
 ICU Level of Service C  
 Analysis Period (min) 15  
 m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 10: State Street & 79th Street



Lanes, Volumes, Timings  
11: Indiana Avenue & 79th Street

11/22/2017



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑	↗		↖						↕	
Traffic Volume (vph)	0	394	88	25	388	0	0	0	0	25	25	69
Future Volume (vph)	0	394	88	25	388	0	0	0	0	25	25	69
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (ft)	0		30	0		0	0		0	0		0
Storage Lanes	0		1	0		0	0		0	0		0
Taper Length (ft)	0			0			0			0		
Satd. Flow (prot)	0	1429	1339	0	1425	0	0	0	0	0	1450	0
Flt Permitted					0.964						0.990	
Satd. Flow (perm)	0	1429	1339	0	1378	0	0	0	0	0	1450	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			63									75
Link Speed (mph)		30			30			30				30
Link Distance (ft)		869			1306			665				683
Travel Time (s)		19.8			29.7			15.1				15.5
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Bus Blockages (#/hr)	0	0	2	0	0	0	0	0	0	0	0	0
Parking (#/hr)		0			0							
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	428	96	0	449	0	0	0	0	0	129	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		10			10			0				0
Link Offset(ft)		0			0			0				0
Crosswalk Width(ft)		16			16			16				16
Two way Left Turn Lane												
Headway Factor	1.22	1.39	1.24	1.22	1.39	1.22	1.22	1.22	1.22	1.22	1.22	1.22
Turning Speed (mph)	15		9	15		9	15		9	15		9
Turn Type		NA	Perm	Perm	NA					Perm	NA	
Protected Phases		4			8							6
Permitted Phases			4	8						6		
Minimum Split (s)		18.0	18.0	18.0	18.0					19.0	19.0	
Total Split (s)		48.0	48.0	48.0	48.0					22.0	22.0	
Total Split (%)		68.6%	68.6%	68.6%	68.6%					31.4%	31.4%	
Yellow Time (s)		3.0	3.0	3.0	3.0					3.0	3.0	
All-Red Time (s)		2.0	2.0	2.0	2.0					1.0	1.0	
Lost Time Adjust (s)		1.0	1.0		1.0							1.0
Total Lost Time (s)		6.0	6.0		6.0							5.0
Lead/Lag												
Lead-Lag Optimize?												
Act Effct Green (s)		42.0	42.0		42.0							17.0
Actuated g/C Ratio		0.60	0.60		0.60							0.24
v/c Ratio		0.50	0.12		0.54							0.32
Control Delay		10.5	3.1		3.6							12.9
Queue Delay		0.0	0.0		0.0							0.0
Total Delay		10.5	3.1		3.6							12.9
LOS		B	A		A							B
Approach Delay		9.2			3.6							12.9
Approach LOS		A			A							B

Lanes, Volumes, Timings  
 11: Indiana Avenue & 79th Street

11/22/2017



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Queue Length 50th (ft)		94	5		15							18
Queue Length 95th (ft)		160	22		m28							60
Internal Link Dist (ft)		789			1226			585				603
Turn Bay Length (ft)			30									
Base Capacity (vph)		857	828		826							408
Starvation Cap Reductn		0	0		0							0
Spillback Cap Reductn		0	0		0							0
Storage Cap Reductn		0	0		0							0
Reduced v/c Ratio		0.50	0.12		0.54							0.32

Intersection Summary

Area Type: CBD  
 Cycle Length: 70  
 Actuated Cycle Length: 70  
 Offset: 42 (60%), Referenced to phase 6:SBTL, Start of Green  
 Natural Cycle: 50  
 Control Type: Pretimed  
 Maximum v/c Ratio: 0.54  
 Intersection Signal Delay: 7.3  
 Intersection LOS: A  
 Intersection Capacity Utilization 69.7%  
 ICU Level of Service C  
 Analysis Period (min) 15  
 m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 11: Indiana Avenue & 79th Street



Lanes, Volumes, Timings  
12: King Dr & 79th Street

11/22/2017



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	29	337	48	56	404	41	59	282	52	58	525	18
Future Volume (vph)	29	337	48	56	404	41	59	282	52	58	525	18
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Width (ft)	10	10	10	10	10	10	10	10	10	10	10	10
Storage Length (ft)	75		30	60		30	60		30	50		50
Storage Lanes	1		1	1		1	1		1	1		1
Taper Length (ft)	25			25			25			25		
Satd. Flow (prot)	1408	1156	1260	1408	1275	1260	1408	1482	1260	1408	1482	1260
Flt Permitted	0.371			0.452			0.259			0.518		
Satd. Flow (perm)	520	1156	1074	624	1275	1085	377	1482	1107	720	1482	1157
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			27			19			38			31
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		1306			1333			676			668	
Travel Time (s)		29.7			30.3			15.4			15.2	
Confl. Peds. (#/hr)	73		78	78		73	36		59	59		36
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Parking (#/hr)		24			8							
Shared Lane Traffic (%)												
Lane Group Flow (vph)	32	366	52	61	439	45	64	307	57	63	571	20
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		10			10			10			10	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.33	1.79	1.33	1.33	1.60	1.33	1.33	1.33	1.33	1.33	1.33	1.33
Turning Speed (mph)	15		9	15		9	15		9	15		9
Turn Type	Perm	NA	Perm	Perm	NA	Perm	Perm	NA	Perm	Perm	NA	Perm
Protected Phases		4			8			2			6	
Permitted Phases	4		4	8		8	2		2	6		6
Minimum Split (s)	26.0	26.0	26.0	26.0	26.0	26.0	24.0	24.0	24.0	24.0	24.0	24.0
Total Split (s)	34.0	34.0	34.0	34.0	34.0	34.0	36.0	36.0	36.0	36.0	36.0	36.0
Total Split (%)	48.6%	48.6%	48.6%	48.6%	48.6%	48.6%	51.4%	51.4%	51.4%	51.4%	51.4%	51.4%
Yellow Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Total Lost Time (s)	6.0	6.0	6.0	6.0	6.0	6.0	5.0	5.0	5.0	5.0	5.0	5.0
Lead/Lag												
Lead-Lag Optimize?												
Act Effct Green (s)	28.0	28.0	28.0	28.0	28.0	28.0	31.0	31.0	31.0	31.0	31.0	31.0
Actuated g/C Ratio	0.40	0.40	0.40	0.40	0.40	0.40	0.44	0.44	0.44	0.44	0.44	0.44
v/c Ratio	0.15	0.79	0.12	0.24	0.86	0.10	0.39	0.47	0.11	0.20	0.87	0.04
Control Delay	8.0	25.4	3.5	12.3	34.1	5.2	21.7	16.7	6.4	14.0	34.6	3.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	8.0	25.4	3.5	12.3	34.1	5.2	21.7	16.7	6.4	14.0	34.6	3.4
LOS	A	C	A	B	C	A	C	B	A	B	C	A
Approach Delay		21.7			29.3			16.1			31.7	

Lanes, Volumes, Timings  
12: King Dr & 79th Street

11/22/2017

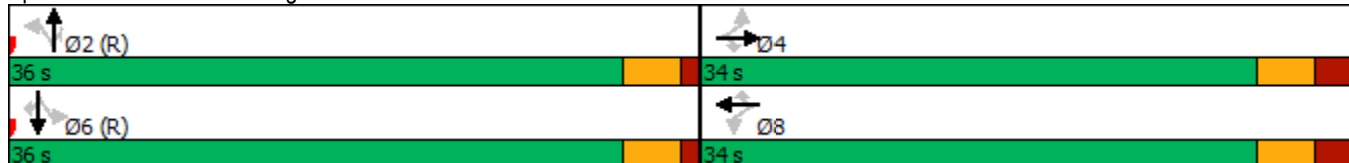


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Approach LOS	C			C			B			C		
Queue Length 50th (ft)	7	136	7	17	171	5	18	89	4	16	213	0
Queue Length 95th (ft)	m12	#280	m11	m41	#336	m15	52	155	23	40	#404	8
Internal Link Dist (ft)	1226			1253			596			588		
Turn Bay Length (ft)	75		30	60		30	60		30	50		50
Base Capacity (vph)	208	462	445	249	510	445	166	656	511	318	656	529
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.15	0.79	0.12	0.24	0.86	0.10	0.39	0.47	0.11	0.20	0.87	0.04

Intersection Summary

Area Type: CBD  
 Cycle Length: 70  
 Actuated Cycle Length: 70  
 Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green  
 Natural Cycle: 70  
 Control Type: Pretimed  
 Maximum v/c Ratio: 0.87  
 Intersection Signal Delay: 25.7 Intersection LOS: C  
 Intersection Capacity Utilization 109.8% ICU Level of Service H  
 Analysis Period (min) 15  
 # 95th percentile volume exceeds capacity, queue may be longer.  
 Queue shown is maximum after two cycles.  
 m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 12: King Dr & 79th Street



Lanes, Volumes, Timings  
 13: St Lawrence Avenue & 79th Street

11/22/2017



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↑	↗		↕				
Traffic Volume (vph)	25	386	0	0	363	25	25	100	25	0	0	0
Future Volume (vph)	25	386	0	0	363	25	25	100	25	0	0	0
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (ft)	0		30	0		30	0		0	0		0
Storage Lanes	0		0	0		1	0		0	0		0
Taper Length (ft)	0			0			0			0		
Satd. Flow (prot)	0	1425	0	0	1429	1350	0	1541	0	0	0	0
Flt Permitted		0.967						0.992				
Satd. Flow (perm)	0	1382	0	0	1429	1350	0	1541	0	0	0	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)						20		13				
Link Speed (mph)		30			30			30				30
Link Distance (ft)		1333			660			688				650
Travel Time (s)		30.3			15.0			15.6				14.8
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Parking (#/hr)		0			0							
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	447	0	0	395	27	0	163	0	0	0	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		10			10			0				0
Link Offset(ft)		0			0			0				0
Crosswalk Width(ft)		16			16			16				16
Two way Left Turn Lane												
Headway Factor	1.22	1.39	1.22	1.22	1.39	1.22	1.22	1.22	1.22	1.22	1.22	1.22
Turning Speed (mph)	15		9	15		9	15		9	15		9
Turn Type	Perm	NA			NA	Perm	Perm	NA				
Protected Phases		4			8			2				
Permitted Phases	4					8	2					
Minimum Split (s)	16.0	16.0			16.0	16.0	17.0	17.0				
Total Split (s)	48.0	48.0			48.0	48.0	22.0	22.0				
Total Split (%)	68.6%	68.6%			68.6%	68.6%	31.4%	31.4%				
Yellow Time (s)	3.0	3.0			3.0	3.0	3.0	3.0				
All-Red Time (s)	1.0	1.0			1.0	1.0	1.0	1.0				
Lost Time Adjust (s)		1.0			1.0	1.0		1.0				
Total Lost Time (s)		5.0			5.0	5.0		5.0				
Lead/Lag												
Lead-Lag Optimize?												
Act Effct Green (s)		43.0			43.0	43.0		17.0				
Actuated g/C Ratio		0.61			0.61	0.61		0.24				
v/c Ratio		0.53			0.45	0.03		0.42				
Control Delay		3.4			9.3	3.1		24.6				
Queue Delay		0.0			0.0	0.0		0.0				
Total Delay		3.4			9.3	3.1		24.6				
LOS		A			A	A		C				
Approach Delay		3.4			8.9			24.6				
Approach LOS		A			A			C				
Queue Length 50th (ft)		18			80	1		54				

Lanes, Volumes, Timings  
 13: St Lawrence Avenue & 79th Street

11/22/2017



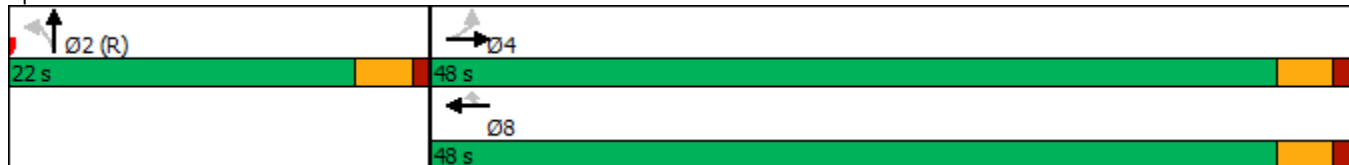
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Queue Length 95th (ft)		m30			137	9		107				
Internal Link Dist (ft)		1253			580			608			570	
Turn Bay Length (ft)						30						
Base Capacity (vph)		848			877	837		384				
Starvation Cap Reductn		0			0	0		0				
Spillback Cap Reductn		0			0	0		0				
Storage Cap Reductn		0			0	0		0				
Reduced v/c Ratio		0.53			0.45	0.03		0.42				

Intersection Summary

Area Type: CBD  
 Cycle Length: 70  
 Actuated Cycle Length: 70  
 Offset: 42 (60%), Referenced to phase 2:NBT, Start of Green  
 Natural Cycle: 45  
 Control Type: Pretimed  
 Maximum v/c Ratio: 0.53  
 Intersection Signal Delay: 9.0  
 Intersection Capacity Utilization 67.0%  
 Analysis Period (min) 15  
 Intersection LOS: A  
 ICU Level of Service C

m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 13: St Lawrence Avenue & 79th Street





Lanes, Volumes, Timings  
14: Kenwood Avenue & 79th Street

11/22/2017



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔			↔						↕	
Traffic Volume (vph)	0	165	25	25	210	0	0	0	0	25	100	25
Future Volume (vph)	0	165	25	25	210	0	0	0	0	25	100	25
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Satd. Flow (prot)	0	1404	0	0	1580	0	0	0	0	0	1541	0
Flt Permitted					0.958						0.992	
Satd. Flow (perm)	0	1404	0	0	1522	0	0	0	0	0	1541	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		23									27	
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		344			1665			665			649	
Travel Time (s)		7.8			37.8			15.1			14.8	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Parking (#/hr)		0										
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	206	0	0	255	0	0	0	0	0	163	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.22	1.39	1.22	1.22	1.22	1.22	1.22	1.22	1.22	1.22	1.22	1.22
Turning Speed (mph)	15		9	15		9	15		9	15		9
Turn Type		NA		Perm	NA					Perm	NA	
Protected Phases		4			8						6	
Permitted Phases				8						6		
Minimum Split (s)		16.0		16.0	16.0					17.0	17.0	
Total Split (s)		21.0		21.0	21.0					19.0	19.0	
Total Split (%)		52.5%		52.5%	52.5%					47.5%	47.5%	
Yellow Time (s)		3.0		3.0	3.0					3.0	3.0	
All-Red Time (s)		1.0		1.0	1.0					1.0	1.0	
Lost Time Adjust (s)		1.0			1.0						1.0	
Total Lost Time (s)		5.0			5.0						5.0	
Lead/Lag												
Lead-Lag Optimize?												
Act Effct Green (s)		16.0			16.0						14.0	
Actuated g/C Ratio		0.40			0.40						0.35	
v/c Ratio		0.36			0.42						0.29	
Control Delay		9.7			11.3						9.8	
Queue Delay		0.0			0.0						0.0	
Total Delay		9.7			11.3						9.8	
LOS		A			B						A	
Approach Delay		9.7			11.3						9.8	
Approach LOS		A			B						A	
Queue Length 50th (ft)		26			38						21	
Queue Length 95th (ft)		62			81						52	
Internal Link Dist (ft)		264			1585			585			569	
Turn Bay Length (ft)												

Lanes, Volumes, Timings  
 14: Kenwood Avenue & 79th Street

11/22/2017

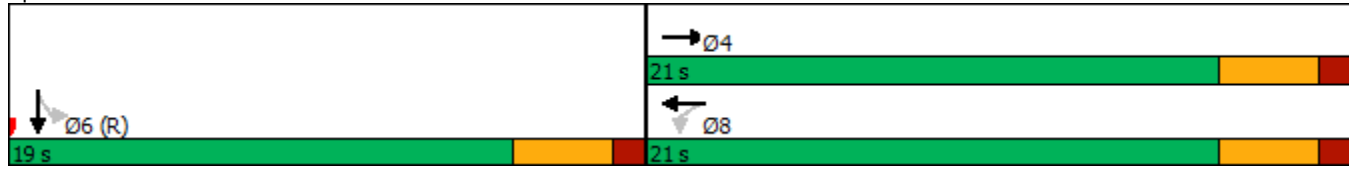


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Base Capacity (vph)		575			608							556
Starvation Cap Reductn		0			0							0
Spillback Cap Reductn		0			0							0
Storage Cap Reductn		0			0							0
Reduced v/c Ratio		0.36			0.42							0.29

Intersection Summary

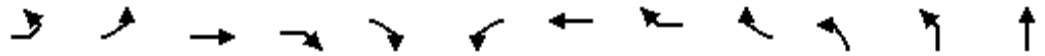
Area Type:	CBD
Cycle Length:	40
Actuated Cycle Length:	40
Offset:	0 (0%), Referenced to phase 6:SBTL, Start of Green
Natural Cycle:	40
Control Type:	Pretimed
Maximum v/c Ratio:	0.42
Intersection Signal Delay:	10.4
Intersection LOS:	B
Intersection Capacity Utilization	49.9%
ICU Level of Service	A
Analysis Period (min)	15

Splits and Phases: 14: Kenwood Avenue & 79th Street



Lanes, Volumes, Timings  
 15: Stony Island Avenue & South Chicago Avenue & 79th Street

11/22/2017



Lane Group	EBL2	EBL	EBT	EBR	EBR2	WBL	WBT	WBR	WBR2	NBL2	NBL	NBT
Lane Configurations												
Traffic Volume (vph)	3	30	157	29	15	79	176	55	33	13	82	825
Future Volume (vph)	3	30	157	29	15	79	176	55	33	13	82	825
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (ft)		100		100		175		150			90	
Storage Lanes		1		1		1		1			1	
Taper Length (ft)		25				25					25	
Satd. Flow (prot)	0	1509	1588	1350	0	1509	1342	1350	0	0	1509	4336
Flt Permitted		0.379				0.445					0.950	
Satd. Flow (perm)	0	602	1588	1350	0	707	1342	1350	0	0	1509	4336
Right Turn on Red					Yes				Yes			
Satd. Flow (RTOR)				134				134				
Link Speed (mph)			30				30					30
Link Distance (ft)			1665				377					254
Travel Time (s)			37.8				8.6					5.8
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Parking (#/hr)							11					
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	35	165	47	0	83	185	93	0	0	100	868
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Right	Left	Left	Right	Right	Left	Left	Left
Median Width(ft)			12				12					12
Link Offset(ft)			0				0					0
Crosswalk Width(ft)			16				16					16
Two way Left Turn Lane												
Headway Factor	1.22	1.22	1.22	1.22	1.22	1.22	1.50	1.22	1.22	1.22	1.22	1.22
Turning Speed (mph)	15	15		9	9	15		9	9	15	15	
Turn Type	Perm	Perm	NA	Perm		Perm	NA	Perm		Prot	Prot	NA
Protected Phases			4				8			5	5	2
Permitted Phases	4	4		4		8		8				
Minimum Split (s)	21.0	21.0	21.0	21.0		21.0	21.0	21.0		8.0	8.0	34.0
Total Split (s)	23.0	23.0	23.0	23.0		23.0	23.0	23.0		13.0	13.0	47.0
Total Split (%)	17.7%	17.7%	17.7%	17.7%		17.7%	17.7%	17.7%		10.0%	10.0%	36.2%
Yellow Time (s)	3.0	3.0	3.0	3.0		3.0	3.0	3.0		3.0	3.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0		2.0	2.0	2.0		0.0	0.0	3.0
Lost Time Adjust (s)		1.0	1.0	1.0		1.0	1.0	1.0			1.0	1.0
Total Lost Time (s)		6.0	6.0	6.0		6.0	6.0	6.0			4.0	8.0
Lead/Lag										Lead	Lead	Lag
Lead-Lag Optimize?												
Act Effct Green (s)		17.0	17.0	17.0		17.0	17.0	17.0			9.0	39.0
Actuated g/C Ratio		0.13	0.13	0.13		0.13	0.13	0.13			0.07	0.30
v/c Ratio		0.45	0.80	0.16		0.90	1.06	0.32			0.96	0.67
Control Delay		71.6	81.8	1.2		115.5	128.1	10.4			138.3	42.8
Queue Delay		0.0	0.0	0.0		0.0	0.0	0.0			0.0	0.0
Total Delay		71.6	81.8	1.2		115.5	128.1	10.4			138.3	42.8
LOS		E	F	A		F	F	B			F	D
Approach Delay			65.0				94.9					48.5
Approach LOS			E				F					D
Queue Length 50th (ft)		28	137	0		71	~171	7			86	234

Lanes, Volumes, Timings

15: Stony Island Avenue & South Chicago Avenue & 79th Street

11/22/2017



Lane Group	NBR	NBR2	SBL2	SBL	SBT	SBR	SBR2	SET	SER	SER2	NWT	NWR
Lane Configurations												
Traffic Volume (vph)	83	3	26	152	1643	161	13	389	181	5	225	38
Future Volume (vph)	83	3	26	152	1643	161	13	389	181	5	225	38
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (ft)	130			0		0			0			0
Storage Lanes	2			1		1			0			0
Taper Length (ft)				0								
Satd. Flow (prot)	1350	0	0	1509	4336	1350	0	2870	0	0	2948	0
Flt Permitted				0.950								
Satd. Flow (perm)	1350	0	0	1509	4336	1350	0	2870	0	0	2948	0
Right Turn on Red		Yes					Yes			Yes		
Satd. Flow (RTOR)	117					92		1				
Link Speed (mph)					30			30				30
Link Distance (ft)					675			738				886
Travel Time (s)					15.3			16.8				20.1
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Parking (#/hr)												
Shared Lane Traffic (%)												
Lane Group Flow (vph)	90	0	0	187	1729	183	0	605	0	0	279	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Right	Right	Left	Left	Left	Right	Right	Left	Right	Right	Left	Right
Median Width(ft)					12			0				0
Link Offset(ft)					0			0				0
Crosswalk Width(ft)					16			16				16
Two way Left Turn Lane												
Headway Factor	1.22	1.22	1.22	1.22	1.22	1.22	1.22	1.22	1.22	1.22	1.22	1.22
Turning Speed (mph)	9	9	15	15		9	9		9	9		9
Turn Type	Perm		Prot	Prot	NA	Perm		NA			NA	
Protected Phases			1	1	6			10			14	
Permitted Phases	2					6						
Minimum Split (s)	34.0		8.0	8.0	45.0	45.0		31.0			31.0	
Total Split (s)	47.0		28.0	28.0	62.0	62.0		32.0			32.0	
Total Split (%)	36.2%		21.5%	21.5%	47.7%	47.7%		24.6%			24.6%	
Yellow Time (s)	4.0		3.0	3.0	4.0	4.0		4.0			4.0	
All-Red Time (s)	3.0		0.0	0.0	3.0	3.0		2.0			2.0	
Lost Time Adjust (s)	1.0			1.0	1.0	1.0		1.0			1.0	
Total Lost Time (s)	8.0			4.0	8.0	8.0		7.0			7.0	
Lead/Lag	Lag		Lead	Lead	Lag	Lag						
Lead-Lag Optimize?												
Act Effect Green (s)	39.0			24.0	54.0	54.0		25.0			25.0	
Actuated g/C Ratio	0.30			0.18	0.42	0.42		0.19			0.19	
v/c Ratio	0.19			0.67	0.96	0.30		1.10			0.49	
Control Delay	3.5			62.5	50.8	13.6		115.5			50.3	
Queue Delay	0.0			0.0	0.0	0.0		0.0			0.0	
Total Delay	3.5			62.5	50.8	13.6		115.5			50.3	
LOS	A			E	D	B		F			D	
Approach Delay					48.6			115.5			50.3	
Approach LOS					D			F			D	
Queue Length 50th (ft)	0			148	512	47		~303			111	

Lanes, Volumes, Timings  
 15: Stony Island Avenue & South Chicago Avenue & 79th Street

11/22/2017

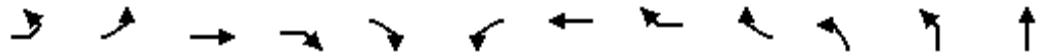


Lane Group	NWR2
Lane Configurations	
Traffic Volume (vph)	2
Future Volume (vph)	2
Ideal Flow (vphpl)	1800
Storage Length (ft)	
Storage Lanes	
Taper Length (ft)	
Satd. Flow (prot)	0
Flt Permitted	
Satd. Flow (perm)	0
Right Turn on Red	Yes
Satd. Flow (RTOR)	
Link Speed (mph)	
Link Distance (ft)	
Travel Time (s)	
Peak Hour Factor	0.95
Parking (#/hr)	
Shared Lane Traffic (%)	
Lane Group Flow (vph)	0
Enter Blocked Intersection	No
Lane Alignment	Right
Median Width(ft)	
Link Offset(ft)	
Crosswalk Width(ft)	
Two way Left Turn Lane	
Headway Factor	1.22
Turning Speed (mph)	9
Turn Type	
Protected Phases	
Permitted Phases	
Minimum Split (s)	
Total Split (s)	
Total Split (%)	
Yellow Time (s)	
All-Red Time (s)	
Lost Time Adjust (s)	
Total Lost Time (s)	
Lead/Lag	
Lead-Lag Optimize?	
Act Effct Green (s)	
Actuated g/C Ratio	
v/c Ratio	
Control Delay	
Queue Delay	
Total Delay	
LOS	
Approach Delay	
Approach LOS	
Queue Length 50th (ft)	

Lanes, Volumes, Timings

15: Stony Island Avenue & South Chicago Avenue & 79th Street

11/22/2017



Lane Group	EBL2	EBL	EBT	EBR	EBR2	WBL	WBT	WBR	WBR2	NBL2	NBL	NBT
Queue Length 95th (ft)		66	#252	0		#177	#328	34			#203	284
Internal Link Dist (ft)			1585				297					174
Turn Bay Length (ft)		100		100		175		150			90	
Base Capacity (vph)		78	207	293		92	175	293			104	1300
Starvation Cap Reductn		0	0	0		0	0	0			0	0
Spillback Cap Reductn		0	0	0		0	0	0			0	0
Storage Cap Reductn		0	0	0		0	0	0			0	0
Reduced v/c Ratio		0.45	0.80	0.16		0.90	1.06	0.32			0.96	0.67

Intersection Summary

Area Type: CBD  
 Cycle Length: 130  
 Actuated Cycle Length: 130  
 Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBT, Start of Green  
 Natural Cycle: 125  
 Control Type: Pretimed  
 Maximum v/c Ratio: 1.10  
 Intersection Signal Delay: 61.8 Intersection LOS: E  
 Intersection Capacity Utilization 116.7% ICU Level of Service H  
 Analysis Period (min) 15  
 ~ Volume exceeds capacity, queue is theoretically infinite.  
 Queue shown is maximum after two cycles.  
 # 95th percentile volume exceeds capacity, queue may be longer.  
 Queue shown is maximum after two cycles.

Splits and Phases: 15: Stony Island Avenue & South Chicago Avenue & 79th Street



Lanes, Volumes, Timings

15: Stony Island Avenue & South Chicago Avenue & 79th Street

11/22/2017



Lane Group	NBR	NBR2	SBL2	SBL	SBT	SBR	SBR2	SET	SER	SER2	NWT	NWR
Queue Length 95th (ft)	23			234	#628	103		#425			158	
Internal Link Dist (ft)					595			658			806	
Turn Bay Length (ft)	130											
Base Capacity (vph)	486			278	1801	614		552			566	
Starvation Cap Reductn	0			0	0	0		0			0	
Spillback Cap Reductn	0			0	0	0		0			0	
Storage Cap Reductn	0			0	0	0		0			0	
Reduced v/c Ratio	0.19			0.67	0.96	0.30		1.10			0.49	
Intersection Summary												



Lane Group	NWR2
Queue Length 95th (ft)	
Internal Link Dist (ft)	
Turn Bay Length (ft)	
Base Capacity (vph)	
Starvation Cap Reductn	
Spillback Cap Reductn	
Storage Cap Reductn	
Reduced v/c Ratio	
Intersection Summary	



Lanes, Volumes, Timings  
16: 79th Street & Cregier Avenue

11/22/2017



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕				
Traffic Volume (vph)	25	205	0	0	318	25	25	100	25	0	0	0
Future Volume (vph)	25	205	0	0	318	25	25	100	25	0	0	0
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Satd. Flow (prot)	0	1417	0	0	1572	0	0	1541	0	0	0	0
Flt Permitted		0.945						0.992				
Satd. Flow (perm)	0	1345	0	0	1572	0	0	1541	0	0	0	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)					9			16				
Link Speed (mph)		30			30			30				30
Link Distance (ft)		946			328			89				655
Travel Time (s)		21.5			7.5			2.0				14.9
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Bus Blockages (#/hr)	0	1	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)		0										
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	250	0	0	373	0	0	163	0	0	0	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			0				0
Link Offset(ft)		0			0			0				0
Crosswalk Width(ft)		16			16			16				16
Two way Left Turn Lane												
Headway Factor	1.22	1.40	1.22	1.22	1.22	1.22	1.22	1.22	1.22	1.22	1.22	1.22
Turning Speed (mph)	15		9	15		9	15		9	15		9
Turn Type	Perm	NA			NA		Perm	NA				
Protected Phases		4			8			2				
Permitted Phases	4						2					
Minimum Split (s)	19.0	19.0			19.0		23.0	23.0				
Total Split (s)	39.0	39.0			39.0		26.0	26.0				
Total Split (%)	60.0%	60.0%			60.0%		40.0%	40.0%				
Yellow Time (s)	3.0	3.0			3.0		3.0	3.0				
All-Red Time (s)	1.0	1.0			1.0		1.0	1.0				
Lost Time Adjust (s)		1.0			1.0			1.0				
Total Lost Time (s)		5.0			5.0			5.0				
Lead/Lag												
Lead-Lag Optimize?												
Act Effct Green (s)		34.0			34.0			21.0				
Actuated g/C Ratio		0.52			0.52			0.32				
v/c Ratio		0.36			0.45			0.32				
Control Delay		4.6			11.6			17.1				
Queue Delay		0.0			0.0			0.0				
Total Delay		4.6			11.6			17.1				
LOS		A			B			B				
Approach Delay		4.6			11.6			17.1				
Approach LOS		A			B			B				
Queue Length 50th (ft)		19			83			43				
Queue Length 95th (ft)		m19			143			87				
Internal Link Dist (ft)		866			248			9				575

Lanes, Volumes, Timings  
 16: 79th Street & Cregier Avenue

11/22/2017

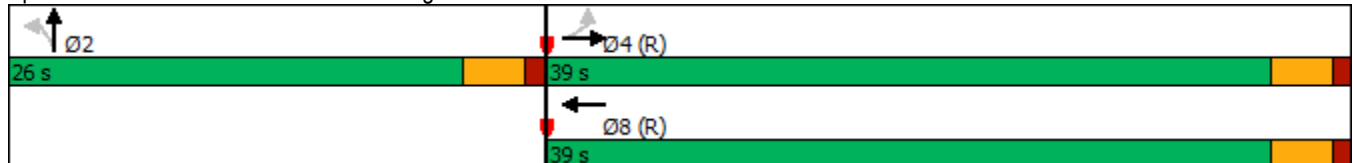


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Bay Length (ft)												
Base Capacity (vph)		703			826			508				
Starvation Cap Reductn		0			0			0				
Spillback Cap Reductn		0			0			0				
Storage Cap Reductn		0			0			0				
Reduced v/c Ratio		0.36			0.45			0.32				

Intersection Summary

Area Type: CBD  
 Cycle Length: 65  
 Actuated Cycle Length: 65  
 Offset: 9 (14%), Referenced to phase 4:EBTL and 8:WBT, Start of Green  
 Natural Cycle: 45  
 Control Type: Pretimed  
 Maximum v/c Ratio: 0.45  
 Intersection Signal Delay: 10.5  
 Intersection LOS: B  
 Intersection Capacity Utilization 61.4%  
 ICU Level of Service B  
 Analysis Period (min) 15  
 m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 16: 79th Street & Cregier Avenue



Lanes, Volumes, Timings  
58: Paulina Street & 79th Street

11/22/2017


















Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑			↑			↕			↕	
Traffic Volume (vph)	0	540	0	0	419	0	8	0	28	29	0	5
Future Volume (vph)	0	540	0	0	419	0	8	0	28	29	0	5
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Satd. Flow (prot)	0	1306	0	0	1274	0	0	1393	0	0	1434	0
Flt Permitted								0.989			0.962	
Satd. Flow (perm)	0	1306	0	0	1274	0	0	1393	0	0	1434	0
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		648			666			663			663	
Travel Time (s)		14.7			15.1			15.1			15.1	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.67	0.92	0.70	0.66	0.92	0.42
Heavy Vehicles (%)	2%	11%	2%	2%	10%	2%	0%	2%	4%	7%	2%	0%
Bus Blockages (#/hr)	0	0	0	0	0	6	0	0	0	0	0	0
Parking (#/hr)		1			7							
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	587	0	0	455	0	0	52	0	0	56	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		9			9			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.22	1.40	1.22	1.22	1.46	1.22	1.22	1.22	1.22	1.22	1.22	1.22
Turning Speed (mph)	15		9	15		9	15		9	15		9
Sign Control		Stop			Stop			Stop			Stop	

Intersection Summary

Area Type:	CBD
Control Type:	Unsignalized
Intersection Capacity Utilization	48.5%
ICU Level of Service	A
Analysis Period (min)	15

Lanes, Volumes, Timings  
69: Union Avenue & 79th Street

11/22/2017

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	25	518	0	0	523	16	2	8	8	0	0	0
Future Volume (vph)	25	518	0	0	523	16	2	8	8	0	0	0
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Satd. Flow (prot)	0	1311	0	0	1323	0	0	1515	0	0	0	0
Flt Permitted		0.996						0.993				
Satd. Flow (perm)	0	1311	0	0	1323	0	0	1515	0	0	0	0
Link Speed (mph)		30			30			30				30
Link Distance (ft)		667			332			660				661
Travel Time (s)		15.2			7.5			15.0				15.0
Peak Hour Factor	0.52	0.95	0.92	0.92	0.96	0.50	0.50	0.67	0.67	0.92	0.92	0.92
Heavy Vehicles (%)	8%	11%	2%	2%	10%	0%	0%	0%	0%	2%	2%	2%
Parking (#/hr)		0			0							
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	593	0	0	577	0	0	28	0	0	0	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		9			9			0				0
Link Offset(ft)		0			0			0				0
Crosswalk Width(ft)		16			16			16				16
Two way Left Turn Lane												
Headway Factor	1.22	1.39	1.22	1.22	1.39	1.22	1.22	1.22	1.22	1.22	1.22	1.22
Turning Speed (mph)	15		9	15		9	15		9	15		9
Sign Control		Stop			Stop			Stop				Stop

Intersection Summary

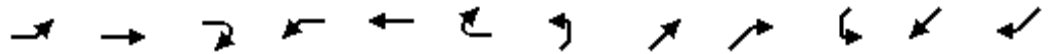
Area Type:	CBD
Control Type:	Unsignalized
Intersection Capacity Utilization	67.5%
ICU Level of Service	C
Analysis Period (min)	15

**Synchro Reports -  
Existing Volumes  
Proposed Geometry  
Optimized**

# **AM Reports**

Lanes, Volumes, Timings  
1: W. Columbus Ave. & W. 79th St.

02/23/2018



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations	↖	↗	↘	↖	↗	↘		↗			↗	↘
Traffic Volume (vph)	277	424	6	97	314	0	0	777	120	0	479	133
Future Volume (vph)	277	424	6	97	314	0	0	777	120	0	479	133
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Width (ft)	10	10	10	10	10	11	12	12	10	12	11	11
Storage Length (ft)	180		100	0		0	0		115	0		0
Storage Lanes	1		1	1		1	0		0	0		0
Taper Length (ft)	75			0			25			0		
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.91	0.91	1.00	0.95	0.95
Fr <sub>t</sub>			0.850					0.980			0.967	
Fl <sub>t</sub> Protected	0.950			0.950								
Satd. Flow (prot)	1438	2669	1428	1451	2705	1706	0	4669	0	0	3040	0
Fl <sub>t</sub> Permitted	0.950			0.485								
Satd. Flow (perm)	1438	2669	1428	741	2705	1706	0	4669	0	0	3040	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			138					22			29	
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		965			345			696			414	
Travel Time (s)		21.9			7.8			15.8			9.4	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	11%	13%	0%	10%	18%	2%	0%	3%	4%	2%	3%	13%
Parking (#/hr)		2										
Adj. Flow (vph)	301	461	7	105	341	0	0	845	130	0	521	145
Shared Lane Traffic (%)												
Lane Group Flow (vph)	301	461	7	105	341	0	0	975	0	0	666	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	L NA	Right	Left	Left	R NA	Left	Left	Right	Left	Left	Right
Median Width(ft)		10			10			0			0	
Link Offset(ft)		0			0			12			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.17	1.26	1.17	1.17	1.17	1.12	1.07	1.07	1.17	1.07	1.12	1.12
Turning Speed (mph)	15		9	15		9	15		9	15		9
Turn Type	Prot	NA	Perm	pm+pt	NA	custom		NA			NA	
Protected Phases	7	4 10		3	8	9		2			6	
Permitted Phases			4 10	8		8						
Minimum Split (s)	12.0			11.0	33.0	7.0		47.0			48.0	
Total Split (s)	36.0			21.0	33.0	7.0		47.0			54.0	
Total Split (%)	27.7%			16.2%	25.4%	5.4%		36.2%			41.5%	
Maximum Green (s)	29.0			14.0	28.0	5.0		38.0			45.0	
Yellow Time (s)	3.0			3.0	3.0	2.0		3.0			3.0	
All-Red Time (s)	4.0			4.0	2.0	0.0		6.0			6.0	
Lost Time Adjust (s)	1.0			1.0	1.0	1.0		1.0			1.0	
Total Lost Time (s)	8.0			8.0	6.0	3.0		10.0			10.0	
Lead/Lag					Lag	Lead		Lag				
Lead-Lag Optimize?												
Walk Time (s)					5.0			4.0			5.0	
Flash Dont Walk (s)					22.0			34.0			34.0	
Pedestrian Calls (#/hr)					0			0			0	

Lanes, Volumes, Timings  
 1: W. Columbus Ave. & W. 79th St.

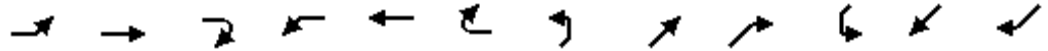
02/23/2018

Lane Group	Ø1	Ø4	Ø10
Lane Configurations			
Traffic Volume (vph)			
Future Volume (vph)			
Ideal Flow (vphpl)			
Lane Width (ft)			
Storage Length (ft)			
Storage Lanes			
Taper Length (ft)			
Lane Util. Factor			
Frt			
Flt Protected			
Satd. Flow (prot)			
Flt Permitted			
Satd. Flow (perm)			
Right Turn on Red			
Satd. Flow (RTOR)			
Link Speed (mph)			
Link Distance (ft)			
Travel Time (s)			
Peak Hour Factor			
Heavy Vehicles (%)			
Parking (#/hr)			
Adj. Flow (vph)			
Shared Lane Traffic (%)			
Lane Group Flow (vph)			
Enter Blocked Intersection			
Lane Alignment			
Median Width(ft)			
Link Offset(ft)			
Crosswalk Width(ft)			
Two way Left Turn Lane			
Headway Factor			
Turning Speed (mph)			
Turn Type			
Protected Phases	1	4	10
Permitted Phases			
Minimum Split (s)	5.5	33.0	7.0
Total Split (s)	7.0	48.0	7.0
Total Split (%)	5%	37%	5%
Maximum Green (s)	3.5	43.0	5.0
Yellow Time (s)	3.0	3.0	2.0
All-Red Time (s)	0.5	2.0	0.0
Lost Time Adjust (s)			
Total Lost Time (s)			
Lead/Lag	Lead	Lag	Lead
Lead-Lag Optimize?			
Walk Time (s)		5.0	
Flash Dont Walk (s)		22.0	
Pedestrian Calls (#/hr)		0	



Lanes, Volumes, Timings  
 1: W. Columbus Ave. & W. 79th St.

02/23/2018

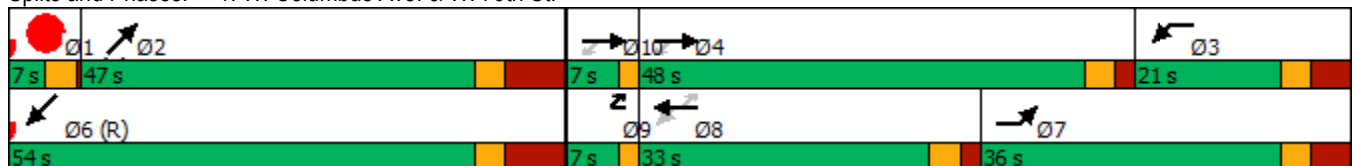


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NEL	NET	NER	SWL	SWT	SWR
Act Effct Green (s)	28.0	49.0	49.0	38.0	27.0			37.0			44.0	
Actuated g/C Ratio	0.22	0.38	0.38	0.29	0.21			0.28			0.34	
v/c Ratio	0.97	0.46	0.01	0.37	0.61			0.73			0.64	
Control Delay	95.8	32.3	0.0	53.4	56.6			44.6			30.2	
Queue Delay	0.0	0.0	0.0	0.0	0.0			0.0			1.4	
Total Delay	95.8	32.4	0.0	53.4	56.6			44.7			31.5	
LOS	F	C	A	D	E			D			C	
Approach Delay		56.9			55.8			44.7			31.5	
Approach LOS		E			E			D			C	
Stops (vph)	241	312	0	96	308			774			496	
Fuel Used(gal)	9	8	0	2	6			17			8	
CO Emissions (g/hr)	616	539	3	129	431			1209			593	
NOx Emissions (g/hr)	120	105	1	25	84			235			115	
VOC Emissions (g/hr)	143	125	1	30	100			280			137	
Dilemma Vehicles (#)	0	0	0	0	0			0			0	
Queue Length 50th (ft)	254	153	0	85	157			265			251	
Queue Length 95th (ft)	#440	204	0	144	210			319			296	
Internal Link Dist (ft)		885			265			616			334	
Turn Bay Length (ft)	180		100									
Base Capacity (vph)	309	1006	624	287	561			1344			1048	
Starvation Cap Reductn	0	0	0	0	0			0			198	
Spillback Cap Reductn	0	26	0	0	0			10			0	
Storage Cap Reductn	0	0	0	0	0			0			0	
Reduced v/c Ratio	0.97	0.47	0.01	0.37	0.61			0.73			0.78	

Intersection Summary

Area Type: Other  
 Cycle Length: 130  
 Actuated Cycle Length: 130  
 Offset: 0 (0%), Referenced to phase 1:Hold and 6:SWT, Start of Green, Master Intersection  
 Natural Cycle: 125  
 Control Type: Pretimed  
 Maximum v/c Ratio: 0.97  
 Intersection Signal Delay: 46.6 Intersection LOS: D  
 Intersection Capacity Utilization 91.2% ICU Level of Service F  
 Analysis Period (min) 15  
 # 95th percentile volume exceeds capacity, queue may be longer.  
 Queue shown is maximum after two cycles.













Splits and Phases: 1: W. Columbus Ave. & W. 79th St.



Lane Group	Ø1	Ø4	Ø10
Act Effct Green (s)			
Actuated g/C Ratio			
v/c Ratio			
Control Delay			
Queue Delay			
Total Delay			
LOS			
Approach Delay			
Approach LOS			
Stops (vph)			
Fuel Used(gal)			
CO Emissions (g/hr)			
NOx Emissions (g/hr)			
VOC Emissions (g/hr)			
Dilemma Vehicles (#)			
Queue Length 50th (ft)			
Queue Length 95th (ft)			
Internal Link Dist (ft)			
Turn Bay Length (ft)			
Base Capacity (vph)			
Starvation Cap Reductn			
Spillback Cap Reductn			
Storage Cap Reductn			
Reduced v/c Ratio			
Intersection Summary			

Lanes, Volumes, Timings  
2: S. Kedzie Ave. & W. 79th St.

02/23/2018

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑	↗	↖	↑↑			↔			↔	
Traffic Volume (vph)	0	461	83	7	326	36	81	527	21	8	401	4
Future Volume (vph)	0	461	83	7	326	36	81	527	21	8	401	4
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Width (ft)	11	11	12	9	11	12	12	11	12	12	11	12
Storage Length (ft)	0		0	40		0	0		0	0		0
Storage Lanes	0		1	1		0	0		0	0		0
Taper Length (ft)	0			25			0			0		
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Fr <sub>t</sub>			0.850		0.985			0.995			0.999	
Fl <sub>t</sub> Protected				0.950				0.994			0.999	
Satd. Flow (prot)	0	2978	1436	1193	2817	0	0	3167	0	0	3168	0
Fl <sub>t</sub> Permitted				0.362				0.768			0.939	
Satd. Flow (perm)	0	2978	1436	455	2817	0	0	2447	0	0	2977	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			90		9			4			1	
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		345			652			668			245	
Travel Time (s)		7.8			14.8			15.2			5.6	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	2%	11%	4%	29%	16%	12%	3%	3%	10%	0%	3%	0%
Bus Blockages (#/hr)	0	0	6	0	0	0	0	0	0	0	6	0
Adj. Flow (vph)	0	501	90	8	354	39	88	573	23	9	436	4
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	501	90	8	393	0	0	684	0	0	449	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	R NA	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		2			9			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.12	1.12	1.11	1.22	1.12	1.07	1.07	1.12	1.07	1.07	1.14	1.07
Turning Speed (mph)	15		9	15		9	15		9	15		9
Turn Type		NA	custom	custom	NA		pm+pt	NA		Perm	NA	
Protected Phases		4	9		8 10		5	2			6	
Permitted Phases			4	8			2			6		
Minimum Split (s)		23.0	7.0	23.0			11.0	34.0		34.0	34.0	
Total Split (s)		45.0	8.0	44.0			11.0	78.0		67.0	67.0	
Total Split (%)		34.6%	6.2%	33.8%			8.5%	60.0%		51.5%	51.5%	
Maximum Green (s)		40.0	6.0	39.0			6.0	73.0		62.0	62.0	
Yellow Time (s)		3.0	2.0	3.0			3.0	3.0		3.0	3.0	
All-Red Time (s)		2.0	0.0	2.0			2.0	2.0		2.0	2.0	
Lost Time Adjust (s)		1.0	1.0	1.0				1.0			1.0	
Total Lost Time (s)		6.0	3.0	6.0				6.0			6.0	
Lead/Lag							Lead			Lag	Lag	
Lead-Lag Optimize?												
Walk Time (s)		5.0		5.0				5.0		5.0	5.0	
Flash Dont Walk (s)		13.0		13.0				23.0		23.0	23.0	
Pedestrian Calls (#/hr)		0		0				0		0	0	

Lane Group	Ø10
Lane Configurations	
Traffic Volume (vph)	
Future Volume (vph)	
Ideal Flow (vphpl)	
Lane Width (ft)	
Storage Length (ft)	
Storage Lanes	
Taper Length (ft)	
Lane Util. Factor	
Fr <sub>t</sub>	
Fl <sub>t</sub> Protected	
Satd. Flow (prot)	
Fl <sub>t</sub> Permitted	
Satd. Flow (perm)	
Right Turn on Red	
Satd. Flow (RTOR)	
Link Speed (mph)	
Link Distance (ft)	
Travel Time (s)	
Peak Hour Factor	
Heavy Vehicles (%)	
Bus Blockages (#/hr)	
Adj. Flow (vph)	
Shared Lane Traffic (%)	
Lane Group Flow (vph)	
Enter Blocked Intersection	
Lane Alignment	
Median Width(ft)	
Link Offset(ft)	
Crosswalk Width(ft)	
Two way Left Turn Lane	
Headway Factor	
Turning Speed (mph)	
Turn Type	
Protected Phases	10
Permitted Phases	
Minimum Split (s)	7.0
Total Split (s)	7.0
Total Split (%)	5%
Maximum Green (s)	5.0
Yellow Time (s)	2.0
All-Red Time (s)	0.0
Lost Time Adjust (s)	
Total Lost Time (s)	
Lead/Lag	
Lead-Lag Optimize?	
Walk Time (s)	
Flash Dont Walk (s)	
Pedestrian Calls (#/hr)	

Lanes, Volumes, Timings  
 2: S. Kedzie Ave. & W. 79th St.

02/23/2018



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Act Effct Green (s)		39.0	47.0	38.0	39.0			72.0				61.0
Actuated g/C Ratio		0.30	0.36	0.29	0.30			0.55				0.47
v/c Ratio		0.56	0.16	0.06	0.46			0.49				0.32
Control Delay		53.6	21.7	35.0	37.8			18.6				9.4
Queue Delay		2.9	0.0	0.0	0.0			0.4				0.2
Total Delay		56.5	21.7	35.0	37.8			19.0				9.6
LOS		E	C	C	D			B				A
Approach Delay		51.2			37.8			19.0				9.6
Approach LOS		D			D			B				A
Stops (vph)		398	41	6	259			342				63
Fuel Used(gal)		8	1	0	6			8				2
CO Emissions (g/hr)		592	57	8	424			528				135
NOx Emissions (g/hr)		115	11	2	82			103				26
VOC Emissions (g/hr)		137	13	2	98			122				31
Dilemma Vehicles (#)		0	0	0	0			0				0
Queue Length 50th (ft)		204	31	5	126			164				32
Queue Length 95th (ft)		263	m74	19	173			208				41
Internal Link Dist (ft)		265			572			588				165
Turn Bay Length (ft)				40								
Base Capacity (vph)		893	576	133	851			1384				1397
Starvation Cap Reductn		277	0	0	0			0				344
Spillback Cap Reductn		0	0	0	0			279				0
Storage Cap Reductn		0	0	0	0			0				0
Reduced v/c Ratio		0.81	0.16	0.06	0.46			0.62				0.43

Intersection Summary

Area Type: Other  
 Cycle Length: 130  
 Actuated Cycle Length: 130  
 Offset: 49 (38%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green  
 Natural Cycle: 75  
 Control Type: Pretimed  
 Maximum v/c Ratio: 0.56  
 Intersection Signal Delay: 29.5 Intersection LOS: C  
 Intersection Capacity Utilization 76.7% ICU Level of Service D  
 Analysis Period (min) 15  
 m Volume for 95th percentile queue is metered by upstream signal.




















Splits and Phases: 2: S. Kedzie Ave. & W. 79th St.



Lane Group	Ø10
Act Effct Green (s)	
Actuated g/C Ratio	
v/c Ratio	
Control Delay	
Queue Delay	
Total Delay	
LOS	
Approach Delay	
Approach LOS	
Stops (vph)	
Fuel Used(gal)	
CO Emissions (g/hr)	
NOx Emissions (g/hr)	
VOC Emissions (g/hr)	
Dilemma Vehicles (#)	
Queue Length 50th (ft)	
Queue Length 95th (ft)	
Internal Link Dist (ft)	
Turn Bay Length (ft)	
Base Capacity (vph)	
Starvation Cap Reductn	
Spillback Cap Reductn	
Storage Cap Reductn	
Reduced v/c Ratio	
Intersection Summary	

Lanes, Volumes, Timings  
 3: W. Columbus Ave. & S. Kedzie Ave.

02/23/2018

												
Lane Group	NBL	NBT	NBR	SBL	SBT	SBR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Traffic Volume (vph)	1	452	110	6	348	353	449	602	3	62	258	48
Future Volume (vph)	1	452	110	6	348	353	449	602	3	62	258	48
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Width (ft)	12	11	12	12	10	10	11	11	11	10	11	12
Storage Length (ft)	0		0	0		100	0		0	90		0
Storage Lanes	0		0	0		1	1		0	1		0
Taper Length (ft)	0			0			0			25		
Lane Util. Factor	0.95	0.95	0.95	0.95	0.95	1.00	1.00	0.95	0.95	1.00	0.95	0.95
Fr <sub>t</sub>		0.971				0.850		0.999				0.977
Fl <sub>t</sub> Protected					0.999		0.950			0.950		
Satd. Flow (prot)	0	3087	0	0	3042	1360	1574	3172	0	1580	2999	0
Fl <sub>t</sub> Permitted		0.955			0.942		0.512			0.310		
Satd. Flow (perm)	0	2948	0	0	2868	1360	848	3172	0	516	2999	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		24				282		1				16
Link Speed (mph)		30			30			30				30
Link Distance (ft)		245			494			414				728
Travel Time (s)		5.6			11.2			9.4				16.5
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	0%	4%	4%	50%	4%	5%	5%	4%	33%	1%	8%	6%
Adj. Flow (vph)	1	491	120	7	378	384	488	654	3	67	280	52
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	612	0	0	385	384	488	657	0	67	332	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			11				11
Link Offset(ft)		0			0			0				0
Crosswalk Width(ft)		16			16			16				16
Two way Left Turn Lane												
Headway Factor	1.07	1.12	1.07	1.07	1.17	1.17	1.12	1.12	1.12	1.17	1.12	1.07
Turning Speed (mph)	15		9	15		9	15		9	15		9
Turn Type	Perm	NA		Perm	NA	pm+ov	pm+pt	NA		Perm	NA	
Protected Phases		2			6	7	7	4				8
Permitted Phases	2			6		6	4			8		
Minimum Split (s)	28.0	28.0		28.0	28.0	11.0	11.0	26.0		26.0	26.0	
Total Split (s)	48.0	48.0		48.0	48.0	40.0	40.0	82.0		42.0	42.0	
Total Split (%)	36.9%	36.9%		36.9%	36.9%	30.8%	30.8%	63.1%		32.3%	32.3%	
Maximum Green (s)	42.0	42.0		42.0	42.0	34.0	34.0	78.5		36.0	36.0	
Yellow Time (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0		3.0	3.0	
All-Red Time (s)	3.0	3.0		3.0	3.0	3.0	3.0	0.5		3.0	3.0	
Lost Time Adjust (s)		1.0			1.0	1.0	1.0	1.0		1.0	1.0	
Total Lost Time (s)		7.0			7.0	7.0	7.0	4.5		7.0	7.0	
Lead/Lag						Lag	Lag			Lead	Lead	
Lead-Lag Optimize?						Yes	Yes			Yes	Yes	
Walk Time (s)	5.0	5.0		5.0	5.0					5.0	5.0	
Flash Dont Walk (s)	17.0	17.0		17.0	17.0					15.0	15.0	
Pedestrian Calls (#/hr)	0	0		0	0					0	0	
Act Effct Green (s)		41.0			41.0	81.0	75.0	77.5		35.0	35.0	

Lanes, Volumes, Timings  
 3: W. Columbus Ave. & S. Kedzie Ave.

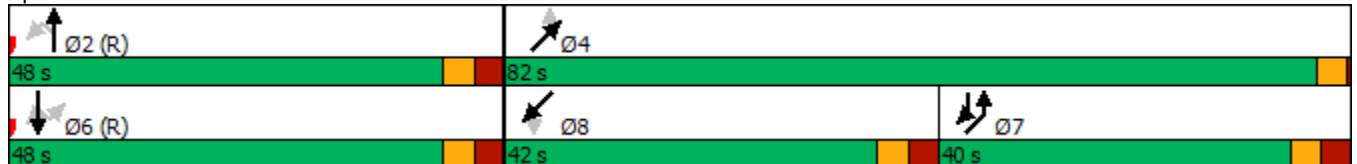
02/23/2018

Lane Group	NBL	NBT	NBR	SBL	SBT	SBR	NEL	NET	NER	SWL	SWT	SWR
Actuated g/C Ratio		0.32			0.32	0.62	0.58	0.60		0.27	0.27	
v/c Ratio		0.65			0.43	0.40	0.73	0.35		0.49	0.41	
Control Delay		25.2			37.0	4.4	8.8	1.0		53.8	38.8	
Queue Delay		1.8			0.0	0.0	0.0	0.2		0.0	0.0	
Total Delay		27.0			37.0	4.4	8.8	1.2		53.8	38.8	
LOS		C			D	A	A	A		D	D	
Approach Delay		27.0			20.7			4.4			41.3	
Approach LOS		C			C			A			D	
Stops (vph)		671			274	49	67	11		54	232	
Fuel Used(gal)		8			6	2	3	2		1	5	
CO Emissions (g/hr)		536			387	136	183	149		93	379	
NOx Emissions (g/hr)		104			75	26	36	29		18	74	
VOC Emissions (g/hr)		124			90	31	42	35		22	88	
Dilemma Vehicles (#)		0			0	0	0	0		0	0	
Queue Length 50th (ft)		229			134	33	21	5		48	115	
Queue Length 95th (ft)		295			183	84	m29	m5		101	161	
Internal Link Dist (ft)		165			414			334			648	
Turn Bay Length (ft)						100				90		
Base Capacity (vph)		946			904	953	673	1891		138	819	
Starvation Cap Reductn		187			0	0	0	536		0	0	
Spillback Cap Reductn		0			0	0	0	0		0	0	
Storage Cap Reductn		0			0	0	0	0		0	0	
Reduced v/c Ratio		0.81			0.43	0.40	0.73	0.48		0.49	0.41	

Intersection Summary

Area Type: Other  
 Cycle Length: 130  
 Actuated Cycle Length: 130  
 Offset: 56 (43%), Referenced to phase 2:NBT and 6:SBTL, Start of Green  
 Natural Cycle: 70  
 Control Type: Pretimed  
 Maximum v/c Ratio: 0.73  
 Intersection Signal Delay: 18.5  
 Intersection LOS: B  
 Intersection Capacity Utilization 76.7%  
 ICU Level of Service D  
 Analysis Period (min) 15  
 m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 3: W. Columbus Ave. & S. Kedzie Ave.





Lanes, Volumes, Timings  
4: Ashland Avenue & 79th Street

02/23/2018



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	95	465	42	35	336	53	51	630	55	34	372	44
Future Volume (vph)	95	465	42	35	336	53	51	630	55	34	372	44
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Width (ft)	9	10	10	9	10	11	10	11	11	10	11	11
Storage Length (ft)	80		100	60		30	100		30	100		30
Storage Lanes	1		1	1		1	1		1	1		1
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Ped Bike Factor	0.98		0.94	0.98		0.95	0.93		0.87	0.97		0.86
Frt			0.850			0.850			0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1539	1268	1360	1494	1321	1324	1425	2667	977	1506	2661	906
Flt Permitted	0.503			0.378			0.506			0.282		
Satd. Flow (perm)	796	1268	1272	581	1321	1255	706	2667	854	433	2661	778
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			55			55			55			55
Link Speed (mph)		30			30			30				30
Link Distance (ft)		664			1315			665				670
Travel Time (s)		15.1			29.9			15.1				15.2
Confl. Peds. (#/hr)	41		54	54		41	47		41	41		47
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Heavy Vehicles (%)	0%	10%	5%	3%	10%	9%	12%	6%	4%	6%	5%	9%
Bus Blockages (#/hr)	0	0	0	0	0	6	0	0	8	0	0	8
Parking (#/hr)		14			7			38	38		42	42
Adj. Flow (vph)	104	511	46	38	369	58	56	692	60	37	409	48
Shared Lane Traffic (%)												
Lane Group Flow (vph)	104	511	46	38	369	58	56	692	60	37	409	48
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			10				10
Link Offset(ft)		0			0			0				0
Crosswalk Width(ft)		16			16			16				16
Two way Left Turn Lane												
Headway Factor	1.22	1.47	1.17	1.22	1.40	1.15	1.17	1.36	1.77	1.17	1.38	1.83
Turning Speed (mph)	15		9	15		9	15		9	15		9
Turn Type	Perm	NA	Perm	Perm	NA	Perm	Perm	NA	Perm	Perm	NA	Perm
Protected Phases		4			8			2				6
Permitted Phases	4		4	8		8	2		2	6		6
Minimum Split (s)	38.0	38.0	38.0	38.0	38.0	38.0	27.0	27.0	27.0	27.0	27.0	27.0
Total Split (s)	60.0	60.0	60.0	60.0	60.0	60.0	40.0	40.0	40.0	40.0	40.0	40.0
Total Split (%)	60.0%	60.0%	60.0%	60.0%	60.0%	60.0%	40.0%	40.0%	40.0%	40.0%	40.0%	40.0%
Maximum Green (s)	52.0	52.0	52.0	52.0	52.0	52.0	32.0	32.0	32.0	32.0	32.0	32.0
Yellow Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
All-Red Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Lost Time Adjust (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Total Lost Time (s)	9.0	9.0	9.0	9.0	9.0	9.0	9.0	9.0	9.0	9.0	9.0	9.0
Lead/Lag												
Lead-Lag Optimize?												



Lanes, Volumes, Timings  
5: Loomis Blvd & 79th Street

02/23/2018
























Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	25	504	25	25	374	25	25	100	25	25	100	25
Future Volume (vph)	25	504	25	25	374	25	25	100	25	25	100	25
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (ft)	60		30	60		30	0		0	0		0
Storage Lanes	1		1	1		1	0		0	0		0
Taper Length (ft)	25			25			0			0		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.850			0.850		0.978			0.978	
Flt Protected	0.950			0.950				0.992			0.992	
Satd. Flow (prot)	1676	1588	1464	1676	1588	1500	0	1712	0	0	1712	0
Flt Permitted	0.490			0.399				0.939			0.939	
Satd. Flow (perm)	865	1588	1464	704	1588	1500	0	1621	0	0	1621	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			12			16		9			9	
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		1315			357			644			631	
Travel Time (s)		29.9			8.1			14.6			14.3	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Bus Blockages (#/hr)	0	0	6	0	0	0	0	0	0	0	0	0
Parking (#/hr)		0			0							
Adj. Flow (vph)	27	548	27	27	407	27	27	109	27	27	109	27
Shared Lane Traffic (%)												
Lane Group Flow (vph)	27	548	27	27	407	27	0	163	0	0	163	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.07	1.22	1.11	1.07	1.22	1.07	1.07	1.07	1.07	1.07	1.07	1.07
Turning Speed (mph)	15		9	15		9	15		9	15		9
Turn Type	Perm	NA	Perm	Perm	NA	Perm	Perm	NA		Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4		4	8		8	2			6		
Minimum Split (s)	18.0	18.0	18.0	18.0	18.0	18.0	19.0	19.0		19.0	19.0	
Total Split (s)	73.0	73.0	73.0	73.0	73.0	73.0	27.0	27.0		27.0	27.0	
Total Split (%)	73.0%	73.0%	73.0%	73.0%	73.0%	73.0%	27.0%	27.0%		27.0%	27.0%	
Maximum Green (s)	69.0	69.0	69.0	69.0	69.0	69.0	23.5	23.5		23.5	23.5	
Yellow Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	2.5	2.5		2.5	2.5	
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0		1.0	1.0	
Lost Time Adjust (s)	0.0	1.0	1.0	0.0	1.0	1.0		1.0			1.0	
Total Lost Time (s)	4.0	5.0	5.0	4.0	5.0	5.0		4.5			4.5	
Lead/Lag												
Lead-Lag Optimize?												
Walk Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0		5.0	5.0	
Flash Dont Walk (s)	9.0	9.0	9.0	9.0	9.0	9.0	10.0	10.0		10.0	10.0	
Pedestrian Calls (#/hr)	0	0	0	0	0	0	0	0		0	0	
Act Effct Green (s)	69.0	68.0	68.0	69.0	68.0	68.0		22.5			22.5	



Lanes, Volumes, Timings  
6: Morgan Street & 79th Street

02/23/2018

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	25	511	25	25	398	25	25	100	25	25	100	25
Future Volume (vph)	25	511	25	25	398	25	25	100	25	25	100	25
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (ft)	100		30	100		30	0		0	0		0
Storage Lanes	1		1	1		1	0		0	0		0
Taper Length (ft)	25			25			0			0		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.850			0.850		0.978			0.978	
Flt Protected	0.950			0.950				0.992			0.992	
Satd. Flow (prot)	1676	1588	1500	1676	1571	1500	0	1712	0	0	1712	0
Flt Permitted	0.476			0.397				0.941			0.941	
Satd. Flow (perm)	840	1588	1500	701	1571	1500	0	1624	0	0	1624	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			13			17		10			10	
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		323			1321			593			659	
Travel Time (s)		7.3			30.0			13.5			15.0	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Parking (#/hr)		0			2							
Adj. Flow (vph)	27	555	27	27	433	27	27	109	27	27	109	27
Shared Lane Traffic (%)												
Lane Group Flow (vph)	27	555	27	27	433	27	0	163	0	0	163	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.07	1.22	1.07	1.07	1.24	1.07	1.07	1.07	1.07	1.07	1.07	1.07
Turning Speed (mph)	15		9	15		9	15		9	15		9
Turn Type	Perm	NA	Perm	Perm	NA	Perm	Perm	NA		Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4		4	8		8	2			6		
Minimum Split (s)	17.0	17.0	17.0	17.0	17.0	17.0	21.0	21.0		21.0	21.0	
Total Split (s)	66.0	66.0	66.0	66.0	66.0	66.0	24.0	24.0		24.0	24.0	
Total Split (%)	73.3%	73.3%	73.3%	73.3%	73.3%	73.3%	26.7%	26.7%		26.7%	26.7%	
Maximum Green (s)	62.0	62.0	62.0	62.0	62.0	62.0	20.5	20.5		20.5	20.5	
Yellow Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	2.5	2.5		2.5	2.5	
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0		1.0	1.0	
Lost Time Adjust (s)	1.0	1.0	1.0	1.0	1.0	1.0		1.0			1.0	
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0	5.0		4.5			4.5	
Lead/Lag												
Lead-Lag Optimize?												
Walk Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0		5.0	5.0	
Flash Dont Walk (s)	8.0	8.0	8.0	8.0	8.0	8.0	12.0	12.0		12.0	12.0	
Pedestrian Calls (#/hr)	0	0	0	0	0	0	0	0		0	0	
Act Effct Green (s)	61.0	61.0	61.0	61.0	61.0	61.0		19.5			19.5	
Actuated g/C Ratio	0.68	0.68	0.68	0.68	0.68	0.68		0.22			0.22	

Lanes, Volumes, Timings  
6: Morgan Street & 79th Street

02/23/2018



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
v/c Ratio	0.05	0.52	0.03	0.06	0.41	0.03		0.45				0.45
Control Delay	5.1	9.3	3.3	2.9	7.9	1.4		33.4				33.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0		0.0				0.0
Total Delay	5.1	9.3	3.3	2.9	7.9	1.4		33.4				33.4
LOS	A	A	A	A	A	A		C				C
Approach Delay		8.8			7.3			33.4				33.4
Approach LOS		A			A			C				C
Stops (vph)	9	238	6	9	275	5		120				120
Fuel Used(gal)	0	4	0	0	6	0		2				2
CO Emissions (g/hr)	10	249	8	22	438	20		166				172
NOx Emissions (g/hr)	2	49	2	4	85	4		32				33
VOC Emissions (g/hr)	2	58	2	5	101	5		39				40
Dilemma Vehicles (#)	0	0	0	0	0	0		0				0
Queue Length 50th (ft)	4	136	2	4	177	2		76				76
Queue Length 95th (ft)	13	211	10	m5	205	m3		137				137
Internal Link Dist (ft)		243			1241			513				579
Turn Bay Length (ft)	100		30	100		30						
Base Capacity (vph)	569	1076	1020	475	1064	1022		359				359
Starvation Cap Reductn	0	0	0	0	0	0		0				0
Spillback Cap Reductn	0	0	0	0	0	0		0				0
Storage Cap Reductn	0	0	0	0	0	0		0				0
Reduced v/c Ratio	0.05	0.52	0.03	0.06	0.41	0.03		0.45				0.45

Intersection Summary

Area Type: Other

Cycle Length: 90

Actuated Cycle Length: 90

Offset: 57 (63%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green

Natural Cycle: 50

Control Type: Pretimed

Maximum v/c Ratio: 0.52

Intersection Signal Delay: 13.9

Intersection LOS: B

Intersection Capacity Utilization 50.5%

ICU Level of Service A

Analysis Period (min) 15

m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 6: Morgan Street & 79th Street



Lanes, Volumes, Timings  
7: Halsted Street & 79th Street

02/23/2018



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	38	462	61	28	349	33	62	462	53	29	220	37
Future Volume (vph)	38	462	61	28	349	33	62	462	53	29	220	37
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Width (ft)	9	10	10	9	10	10	10	11	13	10	10	13
Storage Length (ft)	100		100	60		100	100		100	100		100
Storage Lanes	1		1	1		1	1		1	1		1
Taper Length (ft)	100			100			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.850			0.850			0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1539	1375	1389	1539	1356	1386	1596	1689	1520	1550	1585	1506
Flt Permitted	0.475			0.359			0.593			0.263		
Satd. Flow (perm)	770	1375	1389	582	1356	1386	996	1689	1520	429	1585	1506
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			49			48			48			48
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		1321			665			631			665	
Travel Time (s)		30.0			15.1			14.3			15.1	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	0%	10%	2%	0%	9%	3%	0%	3%	4%	3%	6%	5%
Bus Blockages (#/hr)	0	0	2	0	0	0	0	0	0	0	0	0
Parking (#/hr)		0			4							
Adj. Flow (vph)	41	502	66	30	379	36	67	502	58	32	239	40
Shared Lane Traffic (%)												
Lane Group Flow (vph)	41	502	66	30	379	36	67	502	58	32	239	40
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			11			10			10	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.22	1.33	1.18	1.22	1.37	1.17	1.17	1.12	1.03	1.17	1.17	1.03
Turning Speed (mph)	15		9	15		9	15		9	15		9
Turn Type	Perm	NA	Perm	Perm	NA	Perm	Perm	NA	Perm	Perm	NA	Perm
Protected Phases		4			8			2			6	
Permitted Phases	4		4	8		8	2		2	6		6
Minimum Split (s)	30.0	30.0	30.0	30.0	30.0	30.0	27.0	27.0	27.0	27.0	27.0	27.0
Total Split (s)	50.0	50.0	50.0	50.0	50.0	50.0	40.0	40.0	40.0	40.0	40.0	40.0
Total Split (%)	55.6%	55.6%	55.6%	55.6%	55.6%	55.6%	44.4%	44.4%	44.4%	44.4%	44.4%	44.4%
Maximum Green (s)	43.0	43.0	43.0	43.0	43.0	43.0	33.0	33.0	33.0	33.0	33.0	33.0
Yellow Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
All-Red Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lost Time Adjust (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Total Lost Time (s)	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0
Lead/Lag												
Lead-Lag Optimize?												
Walk Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Flash Dont Walk (s)	18.0	18.0	18.0	18.0	18.0	18.0	15.0	15.0	15.0	15.0	15.0	15.0





Lanes, Volumes, Timings  
8: 79th Street & 150 W.

02/23/2018

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↕				↕		↕				↕	
Traffic Volume (vph)	10	733	10	10	424	10	10	10	10	10	10	10
Future Volume (vph)	10	733	10	10	424	10	10	10	10	10	10	10
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Fr <sub>t</sub>	0.998				0.997				0.955		0.955	
Fl <sub>t</sub> Protected	0.999				0.999				0.984		0.984	
Satd. Flow (prot)	0	1583	0	0	1582	0	0	1658	0	0	1658	0
Fl <sub>t</sub> Permitted	0.993				0.981				0.923		0.923	
Satd. Flow (perm)	0	1574	0	0	1553	0	0	1556	0	0	1556	0
Right Turn on Red			Yes				Yes				Yes	
Satd. Flow (RTOR)	2				3				11		11	
Link Speed (mph)	30				30				30		30	
Link Distance (ft)	558				495				173		227	
Travel Time (s)	12.7				11.3				3.9		5.2	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Parking (#/hr)	0				0							
Adj. Flow (vph)	11	797	11	11	461	11	11	11	11	11	11	11
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	819	0	0	483	0	0	33	0	0	33	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)	0				0				0		0	
Link Offset(ft)	0				0				0		-30	
Crosswalk Width(ft)	16				16				16		16	
Two way Left Turn Lane												
Headway Factor	1.07	1.22	1.07	1.07	1.22	1.07	1.07	1.07	1.07	1.07	1.07	1.07
Turning Speed (mph)	15		9	15		9	15		9	15		9
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases	4				8				2		6	
Permitted Phases	4				8				2		6	
Minimum Split (s)	9.0	9.0		9.0	9.0		21.0	21.0		21.0	21.0	
Total Split (s)	89.0	89.0		89.0	89.0		21.0	21.0		21.0	21.0	
Total Split (%)	80.9%	80.9%		80.9%	80.9%		19.1%	19.1%		19.1%	19.1%	
Maximum Green (s)	85.0	85.0		85.0	85.0		17.0	17.0		17.0	17.0	
Yellow Time (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
All-Red Time (s)	1.0	1.0		1.0	1.0		1.0	1.0		1.0	1.0	
Lost Time Adjust (s)	1.0				1.0				1.0		1.0	
Total Lost Time (s)	5.0				5.0				5.0		5.0	
Lead/Lag												
Lead-Lag Optimize?												
Walk Time (s)							5.0		5.0		5.0	
Flash Dont Walk (s)							12.0		12.0		12.0	
Pedestrian Calls (#/hr)							0		0		0	
Act Effct Green (s)	84.0				84.0				16.0		16.0	
Actuated g/C Ratio	0.76				0.76				0.15		0.15	
v/c Ratio	0.68				0.41				0.14		0.14	
Control Delay	10.0				11.2				32.2		32.2	
Queue Delay	0.0				0.0				0.0		0.0	

Lanes, Volumes, Timings  
8: 79th Street & 150 W.

02/23/2018

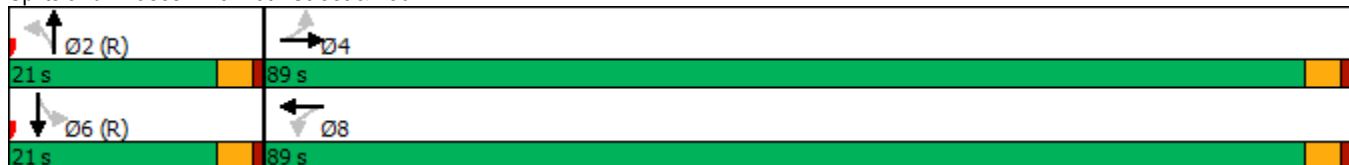


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Total Delay		10.0			11.2			32.2			32.2	
LOS		A			B			C			C	
Approach Delay		10.0			11.2			32.2			32.2	
Approach LOS		A			B			C			C	
Stops (vph)		354			233			21			21	
Fuel Used(gal)		7			5			0			0	
CO Emissions (g/hr)		473			360			25			26	
NOx Emissions (g/hr)		92			70			5			5	
VOC Emissions (g/hr)		110			84			6			6	
Dilemma Vehicles (#)		0			0			0			0	
Queue Length 50th (ft)		237			114			14			14	
Queue Length 95th (ft)		359			183			43			43	
Internal Link Dist (ft)		478			415			93			147	
Turn Bay Length (ft)												
Base Capacity (vph)		1202			1186			235			235	
Starvation Cap Reductn		0			0			0			0	
Spillback Cap Reductn		0			0			0			0	
Storage Cap Reductn		0			0			0			0	
Reduced v/c Ratio		0.68			0.41			0.14			0.14	

Intersection Summary

Area Type:	Other
Cycle Length:	110
Actuated Cycle Length:	110
Offset:	51 (46%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
Natural Cycle:	60
Control Type:	Pretimed
Maximum v/c Ratio:	0.68
Intersection Signal Delay:	11.5
Intersection LOS:	B
Intersection Capacity Utilization:	68.9%
ICU Level of Service:	C
Analysis Period (min):	15

Splits and Phases: 8: 79th Street & 150 W.



# Lanes, Volumes, Timings

## 9: Lafayette Avenue & 79th Street

02/23/2018



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑↑	↑	↔	↑↑	↔				↔	↑↑↑	↔
Traffic Volume (vph)	0	576	177	187	327	0	0	0	0	244	185	117
Future Volume (vph)	0	576	177	187	327	0	0	0	0	244	185	117
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Width (ft)	10	10	12	10	10	11	12	12	12	12	10	8
Storage Length (ft)	75		120	0		0	0		0	0		0
Storage Lanes	2		1	1		1	0		0	1		1
Taper Length (ft)	100			0			0			0		
Lane Util. Factor	1.00	0.91	1.00	1.00	0.95	1.00	1.00	1.00	1.00	0.86	0.86	1.00
Ped Bike Factor			0.68	0.92								
Frt			0.850									0.850
Flt Protected				0.950						0.950	0.980	
Satd. Flow (prot)	0	4208	1286	1550	2682	870	0	0	0	1337	3948	1087
Flt Permitted				0.291						0.950	0.980	
Satd. Flow (perm)	0	4208	878	439	2682	870	0	0	0	1337	3948	1049
Right Turn on Red			Yes			No			Yes			Yes
Satd. Flow (RTOR)			192									127
Link Speed (mph)		30			30			30				30
Link Distance (ft)		330			322			703				664
Travel Time (s)		7.5			7.3			16.0				15.1
Confl. Peds. (#/hr)	5		130	130		5	20					20
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	2%	9%	19%	3%	8%	100%	2%	2%	2%	10%	6%	22%
Parking (#/hr)					17							
Adj. Flow (vph)	0	626	192	203	355	0	0	0	0	265	201	127
Shared Lane Traffic (%)										50%		
Lane Group Flow (vph)	0	626	192	203	355	0	0	0	0	132	334	127
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	L NA	Left	L NA	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		10			10			12				12
Link Offset(ft)		0			0			0				0
Crosswalk Width(ft)		16			16			16				16
Two way Left Turn Lane												
Headway Factor	1.17	1.17	1.07	1.17	1.32	1.12	1.07	1.07	1.07	1.07	1.17	1.28
Turning Speed (mph)	15		9	15		9	15		9	15		9
Turn Type		NA	Perm	pm+pt	NA	custom				Perm	NA	Perm
Protected Phases		2 12		1	6	16					4	
Permitted Phases			2 12	6		6				4		4
Minimum Split (s)				20.0	36.0	8.0				36.0	36.0	36.0
Total Split (s)				23.0	64.0	8.0				38.0	38.0	38.0
Total Split (%)				20.9%	58.2%	7.3%				34.5%	34.5%	34.5%
Maximum Green (s)				20.0	56.0	5.0				30.0	30.0	30.0
Yellow Time (s)				3.0	3.0	3.0				3.0	3.0	3.0
All-Red Time (s)				0.0	5.0	0.0				5.0	5.0	5.0
Lost Time Adjust (s)				1.0	1.0	1.0				1.0	1.0	1.0
Total Lost Time (s)				4.0	9.0	4.0				9.0	9.0	9.0
Lead/Lag				Lead								
Lead-Lag Optimize?												
Walk Time (s)				5.0	5.0					5.0	5.0	5.0

Lanes, Volumes, Timings  
 9: Lafayette Avenue & 79th Street

02/23/2018

Lane Group	Ø2	Ø12
Lane Configurations		
Traffic Volume (vph)		
Future Volume (vph)		
Ideal Flow (vphpl)		
Lane Width (ft)		
Storage Length (ft)		
Storage Lanes		
Taper Length (ft)		
Lane Util. Factor		
Ped Bike Factor		
Frt		
Flt Protected		
Satd. Flow (prot)		
Flt Permitted		
Satd. Flow (perm)		
Right Turn on Red		
Satd. Flow (RTOR)		
Link Speed (mph)		
Link Distance (ft)		
Travel Time (s)		
Confl. Peds. (#/hr)		
Peak Hour Factor		
Heavy Vehicles (%)		
Parking (#/hr)		
Adj. Flow (vph)		
Shared Lane Traffic (%)		
Lane Group Flow (vph)		
Enter Blocked Intersection		
Lane Alignment		
Median Width(ft)		
Link Offset(ft)		
Crosswalk Width(ft)		
Two way Left Turn Lane		
Headway Factor		
Turning Speed (mph)		
Turn Type		
Protected Phases	2	12
Permitted Phases		
Minimum Split (s)	20.0	8.0
Total Split (s)	41.0	8.0
Total Split (%)	37%	7%
Maximum Green (s)	38.0	5.0
Yellow Time (s)	3.0	3.0
All-Red Time (s)	0.0	0.0
Lost Time Adjust (s)		
Total Lost Time (s)		
Lead/Lag	Lag	
Lead-Lag Optimize?		
Walk Time (s)	5.0	

Lanes, Volumes, Timings  
 9: Lafayette Avenue & 79th Street

02/23/2018



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Flash Dont Walk (s)				7.0	23.0					23.0	23.0	23.0
Pedestrian Calls (#/hr)				0	0					0	0	0
Act Effct Green (s)		41.0	41.0	60.0	55.0					29.0	29.0	29.0
Actuated g/C Ratio		0.37	0.37	0.55	0.50					0.26	0.26	0.26
v/c Ratio		0.40	0.43	0.47	0.26					0.38	0.32	0.34
Control Delay		13.9	4.9	30.6	12.9					36.9	33.6	8.5
Queue Delay		0.1	0.0	1.4	0.0					0.0	0.0	0.0
Total Delay		14.0	4.9	32.0	12.9					36.9	33.6	8.5
LOS		B	A	C	B					D	C	A
Approach Delay		11.8			19.9						29.0	
Approach LOS		B			B						C	
Stops (vph)		397	39	187	161					98	240	18
Fuel Used(gal)		8	2	3	3					2	5	1
CO Emissions (g/hr)		526	107	186	180					145	351	63
NOx Emissions (g/hr)		102	21	36	35					28	68	12
VOC Emissions (g/hr)		122	25	43	42					34	81	15
Dilemma Vehicles (#)		0	0	0	0					0	0	0
Queue Length 50th (ft)		61	19	103	64					88	73	0
Queue Length 95th (ft)		75	m29	m177	m93					155	103	48
Internal Link Dist (ft)		250			242			623			584	
Turn Bay Length (ft)			120									
Base Capacity (vph)		1568	447	431	1341					352	1040	370
Starvation Cap Reductn		0	0	100	0					0	0	0
Spillback Cap Reductn		124	0	0	0					0	0	0
Storage Cap Reductn		0	0	0	0					0	0	0
Reduced v/c Ratio		0.43	0.43	0.61	0.26					0.38	0.32	0.34

**Intersection Summary**

Area Type: Other  
 Cycle Length: 110  
 Actuated Cycle Length: 110  
 Offset: 0 (0%), Referenced to phase 2:EBT and 6:WBTL, Start of Green  
 Natural Cycle: 85  
 Control Type: Pretimed  
 Maximum v/c Ratio: 0.47  
 Intersection Signal Delay: 19.3      Intersection LOS: B  
 Intersection Capacity Utilization 66.7%      ICU Level of Service C  
 Analysis Period (min) 15  
 m Volume for 95th percentile queue is metered by upstream signal.

**Splits and Phases: 9: Lafayette Avenue & 79th Street**



Lane Group	Ø2	Ø12
Flash Dont Walk (s)	7.0	
Pedestrian Calls (#/hr)	0	
Act Effct Green (s)		
Actuated g/C Ratio		
v/c Ratio		
Control Delay		
Queue Delay		
Total Delay		
LOS		
Approach Delay		
Approach LOS		
Stops (vph)		
Fuel Used(gal)		
CO Emissions (g/hr)		
NOx Emissions (g/hr)		
VOC Emissions (g/hr)		
Dilemma Vehicles (#)		
Queue Length 50th (ft)		
Queue Length 95th (ft)		
Internal Link Dist (ft)		
Turn Bay Length (ft)		
Base Capacity (vph)		
Starvation Cap Reductn		
Spillback Cap Reductn		
Storage Cap Reductn		
Reduced v/c Ratio		
Intersection Summary		

Lanes, Volumes, Timings  
10: State Street & 79th Street

02/23/2018

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	422	398	0	0	313	144	201	892	84	0	0	0
Future Volume (vph)	422	398	0	0	313	144	201	892	84	0	0	0
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Width (ft)	10	10	11	10	10	11	12	11	16	12	12	12
Storage Length (ft)	0		0	85		115	0		0	0		0
Storage Lanes	2		1	1		0	1		1	0		0
Taper Length (ft)	0			50			0			0		
Lane Util. Factor	0.97	1.00	1.00	1.00	0.91	1.00	0.91	0.91	1.00	1.00	1.00	1.00
Ped Bike Factor	0.83					0.80	0.99	1.00	0.82			
Frt						0.850			0.850			
Flt Protected	0.950						0.950	0.999				
Satd. Flow (prot)	3036	1260	870	0	4496	1450	1526	3102	1700	0	0	0
Flt Permitted	0.480						0.950	0.999				
Satd. Flow (perm)	1273	1260	870	0	4496	1158	1511	3101	1395	0	0	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)						79			79			
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		322			463			683			659	
Travel Time (s)		7.3			10.5			15.5			15.0	
Confl. Peds. (#/hr)	82		240	240		82	8		145	145		8
Peak Hour Factor	0.89	0.90	0.92	0.92	0.90	0.78	0.91	0.95	0.78	0.92	0.92	0.92
Heavy Vehicles (%)	2%	2%	100%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Parking (#/hr)		27										
Adj. Flow (vph)	474	442	0	0	348	185	221	939	108	0	0	0
Shared Lane Traffic (%)							10%					
Lane Group Flow (vph)	474	442	0	0	348	185	199	961	108	0	0	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	L NA	Right	Left	L NA	Right	L NA	L NA	Right	Left	Left	Right
Median Width(ft)		20			20			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.17	1.62	1.12	1.17	1.17	1.12	1.07	1.12	0.91	1.07	1.07	1.07
Turning Speed (mph)	15		9	15		9	15		9	15		9
Turn Type	pm+pt	NA	Perm		NA	Perm	Perm	NA	Perm			
Protected Phases	5	2			6			8				
Permitted Phases	2		2			6	8		8			
Minimum Split (s)	8.0	36.0	36.0		22.0	22.0	36.0	36.0	36.0			
Total Split (s)	16.0	60.0	60.0		44.0	44.0	50.0	50.0	50.0			
Total Split (%)	14.5%	54.5%	54.5%		40.0%	40.0%	45.5%	45.5%	45.5%			
Maximum Green (s)	13.0	52.0	52.0		36.0	36.0	42.0	42.0	42.0			
Yellow Time (s)	3.0	3.0	3.0		3.0	3.0	3.0	3.0	3.0			
All-Red Time (s)	0.0	5.0	5.0		5.0	5.0	5.0	5.0	5.0			
Lost Time Adjust (s)	1.0	1.0	1.0		1.0	1.0	1.0	1.0	1.0			
Total Lost Time (s)	4.0	9.0	9.0		9.0	9.0	9.0	9.0	9.0			
Lead/Lag	Lead				Lag	Lag						
Lead-Lag Optimize?												
Walk Time (s)		5.0	5.0		5.0	5.0	5.0	5.0	5.0			

Lanes, Volumes, Timings  
 10: State Street & 79th Street

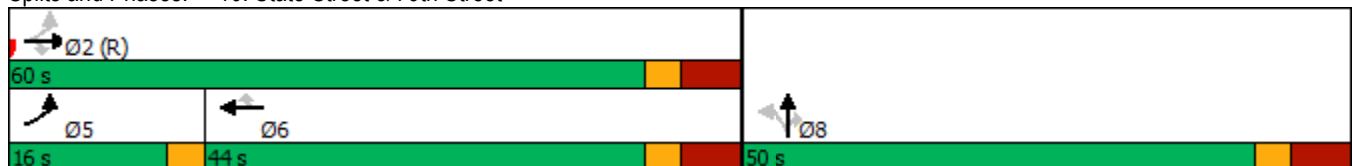
02/23/2018

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Flash Dont Walk (s)		23.0	23.0		9.0	9.0	23.0	23.0	23.0			
Pedestrian Calls (#/hr)		0	0		0	0	0	0	0			
Act Effct Green (s)	56.0	51.0			35.0	35.0	41.0	41.0	41.0			
Actuated g/C Ratio	0.51	0.46			0.32	0.32	0.37	0.37	0.37			
v/c Ratio	0.56	0.76			0.24	0.44	0.35	0.83	0.19			
Control Delay	12.7	32.2			28.3	20.3	27.2	39.0	9.0			
Queue Delay	0.3	1.9			0.0	0.0	0.0	0.0	0.0			
Total Delay	13.0	34.1			28.3	20.3	27.2	39.0	9.0			
LOS	B	C			C	C	C	D	A			
Approach Delay		23.2			25.5			34.6				
Approach LOS		C			C			C				
Stops (vph)	139	331			223	65	127	800	20			
Fuel Used(gal)	3	5			6	2	3	17	1			
CO Emissions (g/hr)	204	380			439	171	186	1154	50			
NOx Emissions (g/hr)	40	74			85	33	36	225	10			
VOC Emissions (g/hr)	47	88			102	40	43	268	12			
Dilemma Vehicles (#)	0	0			0	0	0	0	0			
Queue Length 50th (ft)	53	273			66	57	109	334	13			
Queue Length 95th (ft)	68	407			92	96	179	426	38			
Internal Link Dist (ft)		242			383			603			579	
Turn Bay Length (ft)							115					
Base Capacity (vph)	840	584			1430	422	563	1155	569			
Starvation Cap Reductn	63	52			0	0	0	0	0			
Spillback Cap Reductn	0	0			0	0	0	0	0			
Storage Cap Reductn	0	0			0	0	0	0	0			
Reduced v/c Ratio	0.61	0.83			0.24	0.44	0.35	0.83	0.19			

Intersection Summary

Area Type: Other  
 Cycle Length: 110  
 Actuated Cycle Length: 110  
 Offset: 0 (0%), Referenced to phase 2:EBTL, Start of Green  
 Natural Cycle: 75  
 Control Type: Pretimed  
 Maximum v/c Ratio: 0.83  
 Intersection Signal Delay: 29.0  
 Intersection LOS: C  
 Intersection Capacity Utilization 71.7%  
 ICU Level of Service C  
 Analysis Period (min) 15

Splits and Phases: 10: State Street & 79th Street





Lanes, Volumes, Timings  
 11: Indiana Avenue & 79th Street

02/23/2018



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑	↗		↖						↕	
Traffic Volume (vph)	0	394	88	25	388	0	0	0	0	25	25	69
Future Volume (vph)	0	394	88	25	388	0	0	0	0	25	25	69
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (ft)	0		30	0		0	0		0	0		0
Storage Lanes	0		1	0		0	0		0	0		0
Taper Length (ft)	0			0			0			0		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.850								0.922	
Flt Protected					0.997						0.990	
Satd. Flow (prot)	0	1588	1488	0	1583	0	0	0	0	0	1611	0
Flt Permitted					0.964						0.990	
Satd. Flow (perm)	0	1588	1488	0	1531	0	0	0	0	0	1611	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			71									75
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		869			1306			672			662	
Travel Time (s)		19.8			29.7			15.3			15.0	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Bus Blockages (#/hr)	0	0	2	0	0	0	0	0	0	0	0	0
Parking (#/hr)		0			0							
Adj. Flow (vph)	0	428	96	27	422	0	0	0	0	27	27	75
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	428	96	0	449	0	0	0	0	0	129	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		10			10			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.07	1.22	1.08	1.07	1.22	1.07	1.07	1.07	1.07	1.07	1.07	1.07
Turning Speed (mph)	15		9	15		9	15		9	15		9
Turn Type		NA	Perm	Perm	NA					Perm	NA	
Protected Phases		4			8						6	
Permitted Phases			4	8						6		
Minimum Split (s)		18.0	18.0	18.0	18.0					19.0	19.0	
Total Split (s)		41.0	41.0	41.0	41.0					19.0	19.0	
Total Split (%)		68.3%	68.3%	68.3%	68.3%					31.7%	31.7%	
Maximum Green (s)		36.0	36.0	36.0	36.0					15.0	15.0	
Yellow Time (s)		3.0	3.0	3.0	3.0					3.0	3.0	
All-Red Time (s)		2.0	2.0	2.0	2.0					1.0	1.0	
Lost Time Adjust (s)		1.0	1.0		1.0						1.0	
Total Lost Time (s)		6.0	6.0		6.0						5.0	
Lead/Lag												
Lead-Lag Optimize?												
Walk Time (s)		5.0	5.0	5.0	5.0					5.0	5.0	
Flash Dont Walk (s)		8.0	8.0	8.0	8.0					10.0	10.0	
Pedestrian Calls (#/hr)		0	0	0	0					0	0	
Act Effct Green (s)		35.0	35.0		35.0						14.0	

Lanes, Volumes, Timings  
 11: Indiana Avenue & 79th Street

02/23/2018

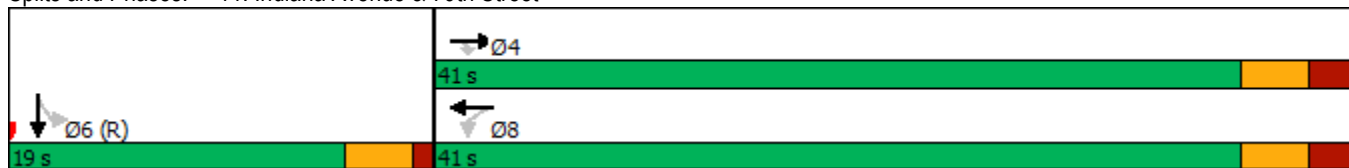


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Actuated g/C Ratio		0.58	0.58		0.58							0.23
v/c Ratio		0.46	0.11		0.50							0.30
Control Delay		9.2	2.7		3.7							11.5
Queue Delay		0.0	0.0		0.0							0.0
Total Delay		9.2	2.7		3.7							11.5
LOS		A	A		A							B
Approach Delay		8.0			3.7							11.5
Approach LOS		A			A							B
Stops (vph)		210	16		55							49
Fuel Used(gal)		6	1		5							1
CO Emissions (g/hr)		419	73		337							81
NOx Emissions (g/hr)		81	14		66							16
VOC Emissions (g/hr)		97	17		78							19
Dilemma Vehicles (#)		0	0		0							0
Queue Length 50th (ft)		77	3		19							16
Queue Length 95th (ft)		136	18		37							54
Internal Link Dist (ft)		789			1226			592				582
Turn Bay Length (ft)			30									
Base Capacity (vph)		926	897		893							433
Starvation Cap Reductn		0	0		0							0
Spillback Cap Reductn		0	0		0							0
Storage Cap Reductn		0	0		0							0
Reduced v/c Ratio		0.46	0.11		0.50							0.30

Intersection Summary













Area Type: Other  
 Cycle Length: 60  
 Actuated Cycle Length: 60  
 Offset: 51 (85%), Referenced to phase 6:SBTL, Start of Green  
 Natural Cycle: 45  
 Control Type: Pretimed  
 Maximum v/c Ratio: 0.50  
 Intersection Signal Delay: 6.7  
 Intersection LOS: A  
 Intersection Capacity Utilization 64.9%  
 ICU Level of Service C  
 Analysis Period (min) 15

Splits and Phases: 11: Indiana Avenue & 79th Street



Lanes, Volumes, Timings  
12: King Dr & 79th Street

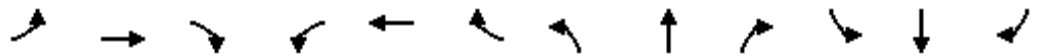
02/23/2018

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	36	312	71	50	295	43	87	308	54	45	243	31
Future Volume (vph)	36	312	71	50	295	43	87	308	54	45	243	31
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Width (ft)	10	10	11	10	10	11	10	10	10	10	10	10
Storage Length (ft)	80		100	60		100	60		30	50		50
Storage Lanes	1		1	1		1	1		1	1		1
Taper Length (ft)	100			75			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	0.94		0.87	0.94		0.88	0.97		0.89	0.94		0.93
Frt			0.850			0.850			0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1565	1425	1450	1565	1416	1450	1565	1647	1400	1565	1647	1400
Flt Permitted	0.508			0.485			0.440			0.559		
Satd. Flow (perm)	784	1425	1263	747	1416	1273	702	1647	1251	870	1647	1298
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			77			73			42			91
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		1306			1324			671			675	
Travel Time (s)		29.7			30.1			15.3			15.3	
Confl. Peds. (#/hr)	73		78	78		73	36		59	59		36
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Parking (#/hr)		7			8							
Adj. Flow (vph)	39	339	77	54	321	47	95	335	59	49	264	34
Shared Lane Traffic (%)												
Lane Group Flow (vph)	39	339	77	54	321	47	95	335	59	49	264	34
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		10			10			10			10	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.17	1.40	1.12	1.17	1.41	1.12	1.17	1.17	1.17	1.17	1.17	1.17
Turning Speed (mph)	15		9	15		9	15		9	15		9
Turn Type	Perm	NA	Perm	Perm	NA	Perm	pm+pt	NA	Perm	Perm	NA	Perm
Protected Phases		4			8		5	2			6	
Permitted Phases	4		4	8		8	2		2	6		6
Minimum Split (s)	26.0	26.0	26.0	26.0	26.0	26.0	8.0	24.0	24.0	24.0	24.0	24.0
Total Split (s)	28.0	28.0	28.0	28.0	28.0	28.0	8.0	32.0	32.0	24.0	24.0	24.0
Total Split (%)	46.7%	46.7%	46.7%	46.7%	46.7%	46.7%	13.3%	53.3%	53.3%	40.0%	40.0%	40.0%
Maximum Green (s)	23.0	23.0	23.0	23.0	23.0	23.0	5.0	28.0	28.0	20.0	20.0	20.0
Yellow Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	0.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Total Lost Time (s)	6.0	6.0	6.0	6.0	6.0	6.0	4.0	5.0	5.0	5.0	5.0	5.0
Lead/Lag							Lead			Lag	Lag	Lag
Lead-Lag Optimize?												
Walk Time (s)	5.0	5.0	5.0	5.0	5.0	5.0		5.0	5.0	5.0	5.0	5.0
Flash Dont Walk (s)	16.0	16.0	16.0	16.0	16.0	16.0		15.0	15.0	15.0	15.0	15.0

# Lanes, Volumes, Timings

## 12: King Dr & 79th Street

02/23/2018



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Pedestrian Calls (#/hr)	0	0	0	0	0	0		0	0	0	0	0	
Act Effct Green (s)	22.0	22.0	22.0	22.0	22.0	22.0	28.0	27.0	27.0	19.0	19.0	19.0	
Actuated g/C Ratio	0.37	0.37	0.37	0.37	0.37	0.37	0.47	0.45	0.45	0.32	0.32	0.32	
v/c Ratio	0.14	0.65	0.15	0.20	0.62	0.09	0.25	0.45	0.10	0.18	0.51	0.07	
Control Delay	7.5	15.5	1.4	9.4	15.9	1.3	10.9	13.9	5.2	17.0	20.8	0.4	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Delay	7.5	15.5	1.4	9.4	15.9	1.3	10.9	13.9	5.2	17.0	20.8	0.4	
LOS	A	B	A	A	B	A	B	B	A	B	C	A	
Approach Delay					12.5			13.5			12.3		18.3
Approach LOS					B			B			B		
Stops (vph)	15	241	8	35	237	8	47	202	16	35	192	0	
Fuel Used(gal)	1	5	1	1	5	0	1	4	0	1	3	0	
CO Emissions (g/hr)	35	384	55	56	371	35	63	252	30	41	236	12	
NOx Emissions (g/hr)	7	75	11	11	72	7	12	49	6	8	46	2	
VOC Emissions (g/hr)	8	89	13	13	86	8	15	58	7	9	55	3	
Dilemma Vehicles (#)	0	0	0	0	0	0	0	0	0	0	0	0	
Queue Length 50th (ft)	3	73	0	7	95	1	18	79	3	13	77	0	
Queue Length 95th (ft)	m7	183	m2	m21	172	m2	41	139	20	35	139	1	
Internal Link Dist (ft)					1226			1244			591		595
Turn Bay Length (ft)	80		100	60		100	60		30	50		50	
Base Capacity (vph)	287	522	511	273	519	513	385	741	586	275	521	473	
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0	
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0	
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0	
Reduced v/c Ratio	0.14	0.65	0.15	0.20	0.62	0.09	0.25	0.45	0.10	0.18	0.51	0.07	

### Intersection Summary

Area Type: Other

Cycle Length: 60

Actuated Cycle Length: 60

Offset: 20 (33%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green

Natural Cycle: 60

Control Type: Pretimed

Maximum v/c Ratio: 0.65

Intersection Signal Delay: 13.8

Intersection LOS: B

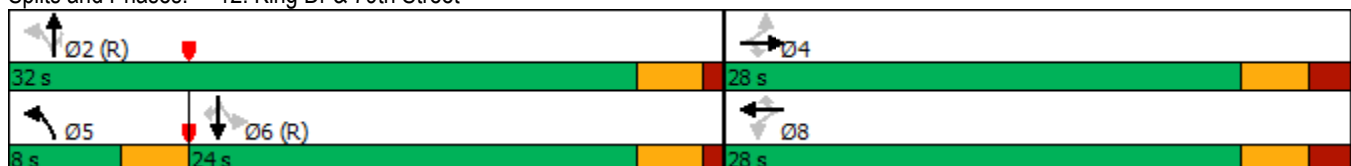
Intersection Capacity Utilization 87.1%

ICU Level of Service E

Analysis Period (min) 15

m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 12: King Dr & 79th Street



Lanes, Volumes, Timings  
 13: St Lawrence Avenue & 79th Street

02/23/2018

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↑	↗		↕				
Traffic Volume (vph)	25	386	0	0	363	25	25	100	25	0	0	0
Future Volume (vph)	25	386	0	0	363	25	25	100	25	0	0	0
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (ft)	0		30	0		30	0		0	0		0
Storage Lanes	0		0	0		1	0		0	0		0
Taper Length (ft)	0			0			0			0		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt						0.850		0.978				
Flt Protected		0.997						0.992				
Satd. Flow (prot)	0	1583	0	0	1588	1500	0	1712	0	0	0	0
Flt Permitted		0.968						0.992				
Satd. Flow (perm)	0	1537	0	0	1588	1500	0	1712	0	0	0	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)						23		16				
Link Speed (mph)		30			30			30				30
Link Distance (ft)		1324			660			692				656
Travel Time (s)		30.1			15.0			15.7				14.9
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Parking (#/hr)		0			0							
Adj. Flow (vph)	27	420	0	0	395	27	27	109	27	0	0	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	447	0	0	395	27	0	163	0	0	0	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		10			10			0				0
Link Offset(ft)		0			0			0				0
Crosswalk Width(ft)		16			16			16				16
Two way Left Turn Lane												
Headway Factor	1.07	1.22	1.07	1.07	1.22	1.07	1.07	1.07	1.07	1.07	1.07	1.07
Turning Speed (mph)	15		9	15		9	15		9	15		9
Turn Type	Perm	NA			NA	Perm	Perm	NA				
Protected Phases		4			8			2				
Permitted Phases	4					8	2					
Minimum Split (s)	16.0	16.0			16.0	16.0	17.0	17.0				
Total Split (s)	41.0	41.0			41.0	41.0	19.0	19.0				
Total Split (%)	68.3%	68.3%			68.3%	68.3%	31.7%	31.7%				
Maximum Green (s)	37.0	37.0			37.0	37.0	15.0	15.0				
Yellow Time (s)	3.0	3.0			3.0	3.0	3.0	3.0				
All-Red Time (s)	1.0	1.0			1.0	1.0	1.0	1.0				
Lost Time Adjust (s)		1.0			1.0	1.0		1.0				
Total Lost Time (s)		5.0			5.0	5.0		5.0				
Lead/Lag												
Lead-Lag Optimize?												
Walk Time (s)	5.0	5.0			5.0	5.0	5.0	5.0				
Flash Dont Walk (s)	7.0	7.0			7.0	7.0	8.0	8.0				
Pedestrian Calls (#/hr)	0	0			0	0	0	0				
Act Effct Green (s)		36.0			36.0	36.0		14.0				
Actuated g/C Ratio		0.60			0.60	0.60		0.23				

Lanes, Volumes, Timings  
 13: St Lawrence Avenue & 79th Street

02/23/2018

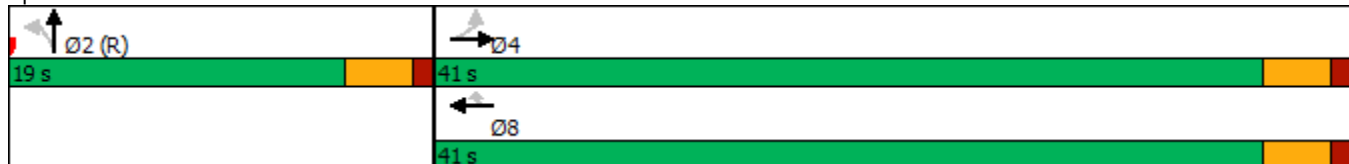


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
v/c Ratio		0.48			0.41	0.03			0.40			
Control Delay		4.1			8.0	2.7			20.9			
Queue Delay		0.0			0.0	0.0			0.0			
Total Delay		4.1			8.0	2.7			20.9			
LOS		A			A	A			C			
Approach Delay		4.1			7.7				20.9			
Approach LOS		A			A				C			
Stops (vph)		72			179	6			110			
Fuel Used(gal)		5			3	0			2			
CO Emissions (g/hr)		349			241	12			144			
NOx Emissions (g/hr)		68			47	2			28			
VOC Emissions (g/hr)		81			56	3			33			
Dilemma Vehicles (#)		0			0	0			0			
Queue Length 50th (ft)		27			66	1			45			
Queue Length 95th (ft)		50			115	8			92			
Internal Link Dist (ft)		1244			580				612			576
Turn Bay Length (ft)						30						
Base Capacity (vph)		922			952	909			411			
Starvation Cap Reductn		0			0	0			0			
Spillback Cap Reductn		0			0	0			0			
Storage Cap Reductn		0			0	0			0			
Reduced v/c Ratio		0.48			0.41	0.03			0.40			

Intersection Summary

Area Type: Other  
 Cycle Length: 60  
 Actuated Cycle Length: 60  
 Offset: 48 (80%), Referenced to phase 2:NBT, Start of Green  
 Natural Cycle: 40  
 Control Type: Pretimed  
 Maximum v/c Ratio: 0.48  
 Intersection Signal Delay: 8.2  
 Intersection Capacity Utilization 62.2%  
 Analysis Period (min) 15  
 Intersection LOS: A  
 ICU Level of Service B

Splits and Phases: 13: St Lawrence Avenue & 79th Street



Lanes, Volumes, Timings  
 14: Kenwood Avenue & 79th Street

02/23/2018



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↖			↗						↘	↙
Traffic Volume (vph)	0	165	25	25	210	0	0	0	0	25	100	25
Future Volume (vph)	0	165	25	25	210	0	0	0	0	25	100	25
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Fr't		0.982									0.978	
Flt Protected					0.995						0.992	
Satd. Flow (prot)	0	1560	0	0	1756	0	0	0	0	0	1712	0
Flt Permitted					0.959						0.992	
Satd. Flow (perm)	0	1560	0	0	1692	0	0	0	0	0	1712	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		24									26	
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		351			1665			668			659	
Travel Time (s)		8.0			37.8			15.2			15.0	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Parking (#/hr)		0										
Adj. Flow (vph)	0	179	27	27	228	0	0	0	0	27	109	27
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	206	0	0	255	0	0	0	0	0	163	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		9			9			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.07	1.22	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07
Turning Speed (mph)	15		9	15		9	15		9	15		9
Turn Type		NA		Perm	NA					Perm		NA
Protected Phases		4			8						6	
Permitted Phases				8						6		
Minimum Split (s)		16.0		16.0	16.0					17.0	17.0	
Total Split (s)		22.0		22.0	22.0					18.0	18.0	
Total Split (%)		55.0%		55.0%	55.0%					45.0%	45.0%	
Maximum Green (s)		18.0		18.0	18.0					14.0	14.0	
Yellow Time (s)		3.0		3.0	3.0					3.0	3.0	
All-Red Time (s)		1.0		1.0	1.0					1.0	1.0	
Lost Time Adjust (s)		1.0			1.0						1.0	
Total Lost Time (s)		5.0			5.0						5.0	
Lead/Lag												
Lead-Lag Optimize?												
Walk Time (s)		5.0		5.0	5.0					5.0	5.0	
Flash Dont Walk (s)		7.0		7.0	7.0					8.0	8.0	
Pedestrian Calls (#/hr)		0		0	0					0	0	
Act Effct Green (s)		17.0			17.0						13.0	
Actuated g/C Ratio		0.42			0.42						0.32	
v/c Ratio		0.30			0.35						0.28	
Control Delay		8.2			9.6						10.2	
Queue Delay		0.0			0.0						0.0	

Lanes, Volumes, Timings  
 14: Kenwood Avenue & 79th Street

02/23/2018

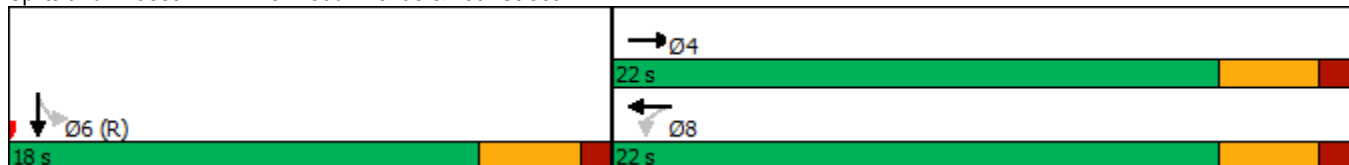


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Total Delay		8.2			9.6							10.2
LOS		A			A							B
Approach Delay		8.2			9.6							10.2
Approach LOS		A			A							B
Stops (vph)		103			147							90
Fuel Used(gal)		1			4							2
CO Emissions (g/hr)		98			302							111
NOx Emissions (g/hr)		19			59							22
VOC Emissions (g/hr)		23			70							26
Dilemma Vehicles (#)		0			0							0
Queue Length 50th (ft)		24			36							22
Queue Length 95th (ft)		56			73							53
Internal Link Dist (ft)		271			1585			588				579
Turn Bay Length (ft)												
Base Capacity (vph)		676			719							573
Starvation Cap Reductn		0			0							0
Spillback Cap Reductn		0			0							0
Storage Cap Reductn		0			0							0
Reduced v/c Ratio		0.30			0.35							0.28

Intersection Summary

Area Type:	Other
Cycle Length:	40
Actuated Cycle Length:	40
Offset:	0 (0%), Referenced to phase 6:SBTL, Start of Green
Natural Cycle:	40
Control Type:	Pretimed
Maximum v/c Ratio:	0.35
Intersection Signal Delay:	9.3
Intersection LOS:	A
Intersection Capacity Utilization:	47.2%
ICU Level of Service:	A
Analysis Period (min):	15

Splits and Phases: 14: Kenwood Avenue & 79th Street

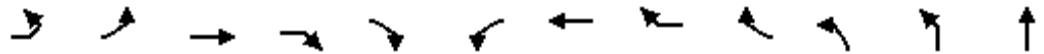




# Lanes, Volumes, Timings

## 15: Stony Island Avenue & South Chicago Avenue & 79th Street

02/23/2018



Lane Group	EBL2	EBL	EBT	EBR	EBR2	WBL	WBT	WBR	WBR2	NBL2	NBL	NBT
Lane Configurations												
Traffic Volume (vph)	1	23	136	22	8	100	161	52	30	11	126	1134
Future Volume (vph)	1	23	136	22	8	100	161	52	30	11	126	1134
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Width (ft)	9	9	10	11	11	9	10	11	11	12	12	12
Storage Length (ft)		100		100		175		150			90	
Storage Lanes		1		1		1		1			1	
Taper Length (ft)		25				25					25	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.91	1.00	0.91
Fr t				0.850				0.850				
Flt Protected		0.950				0.950					0.950	
Satd. Flow (prot)	0	1509	1647	1450	0	1509	1647	1450	0	0	1676	4818
Flt Permitted		0.482				0.554					0.950	
Satd. Flow (perm)	0	766	1647	1450	0	880	1647	1450	0	0	1676	4818
Right Turn on Red					No				No			
Satd. Flow (RTOR)												
Link Speed (mph)			30				30					30
Link Distance (ft)			1665				377					254
Travel Time (s)			37.8				8.6					5.8
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	1	24	143	23	8	105	169	55	32	12	133	1194
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	25	143	31	0	105	169	87	0	0	145	1194
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Right	Left	Left	Right	Right	Left	Left	Left
Median Width(ft)			9				9					12
Link Offset(ft)			0				0					0
Crosswalk Width(ft)			16				16					16
Two way Left Turn Lane												
Headway Factor	1.22	1.22	1.17	1.12	1.12	1.22	1.17	1.12	1.12	1.07	1.07	1.07
Turning Speed (mph)	15	15		9	9	15		9	9	15	15	
Turn Type	Perm	Perm	NA	Perm		pm+pt	NA	Prot		Prot	Prot	NA
Protected Phases			4			3	8	8		5	5	2
Permitted Phases	4	4		4		8						
Minimum Split (s)	21.0	21.0	21.0	21.0		8.0	21.0	21.0		8.0	8.0	34.0
Total Split (s)	26.0	26.0	26.0	26.0		12.0	38.0	38.0		24.0	24.0	54.0
Total Split (%)	18.6%	18.6%	18.6%	18.6%		8.6%	27.1%	27.1%		17.1%	17.1%	38.6%
Maximum Green (s)	21.0	21.0	21.0	21.0		8.5	33.0	33.0		21.0	21.0	47.0
Yellow Time (s)	3.0	3.0	3.0	3.0		3.0	3.0	3.0		3.0	3.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0		0.5	2.0	2.0		0.0	0.0	3.0
Lost Time Adjust (s)		1.0	1.0	1.0		1.0	1.0	1.0			1.0	1.0
Total Lost Time (s)		6.0	6.0	6.0		4.5	6.0	6.0			4.0	8.0
Lead/Lag										Lead	Lead	Lag
Lead-Lag Optimize?												
Walk Time (s)	5.0	5.0	5.0	5.0			5.0	5.0				5.0
Flash Dont Walk (s)	11.0	11.0	11.0	11.0			11.0	11.0				22.0
Pedestrian Calls (#/hr)	0	0	0	0			0	0				0
Act Effct Green (s)		20.0	20.0	20.0		33.5	32.0	32.0			20.0	46.0
Actuated g/C Ratio		0.14	0.14	0.14		0.24	0.23	0.23			0.14	0.33

# Lanes, Volumes, Timings

## 15: Stony Island Avenue & South Chicago Avenue & 79th Street

02/23/2018



Lane Group	NBR	NBR2	SBL2	SBL	SBT	SBR	SBR2	SET	SER	SER2	NWT	NWR
Lane Configurations												
Traffic Volume (vph)	73	14	18	58	712	61	9	187	73	2	200	65
Future Volume (vph)	73	14	18	58	712	61	9	187	73	2	200	65
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Width (ft)	12	12	12	12	12	12	12	12	12	12	12	12
Storage Length (ft)	130			0		0			0			0
Storage Lanes	2			1		1			0			0
Taper Length (ft)				0								
Lane Util. Factor	1.00	0.91	0.91	1.00	0.91	1.00	0.91	0.95	0.95	0.95	0.95	0.95
Fr <sub>t</sub>	0.850					0.850		0.957				0.962
Fl <sub>t</sub> Protected				0.950								
Satd. Flow (prot)	1500	0	0	1676	4818	1500	0	3209	0	0	3226	0
Fl <sub>t</sub> Permitted				0.950								
Satd. Flow (perm)	1500	0	0	1676	4818	1500	0	3209	0	0	3226	0
Right Turn on Red		No					No			No		
Satd. Flow (RTOR)												
Link Speed (mph)					30			30				30
Link Distance (ft)					690			712				889
Travel Time (s)					15.7			16.2				20.2
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	77	15	19	61	749	64	9	197	77	2	211	68
Shared Lane Traffic (%)												
Lane Group Flow (vph)	92	0	0	80	749	73	0	276	0	0	282	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Right	Right	Left	Left	Left	Right	Right	Left	Right	Right	Left	Right
Median Width(ft)					12			0				0
Link Offset(ft)					0			0				0
Crosswalk Width(ft)					16			16				16
Two way Left Turn Lane												
Headway Factor	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07
Turning Speed (mph)	9	9	15	15		9	9		9	9		9
Turn Type	Perm		Prot	Prot	NA	Perm		NA			NA	
Protected Phases			1	1	6			10				14
Permitted Phases	2					6						
Minimum Split (s)	34.0		8.0	8.0	45.0	45.0		31.0				31.0
Total Split (s)	54.0		17.0	17.0	47.0	47.0		31.0				31.0
Total Split (%)	38.6%		12.1%	12.1%	33.6%	33.6%		22.1%				22.1%
Maximum Green (s)	47.0		14.0	14.0	40.0	40.0		25.0				25.0
Yellow Time (s)	4.0		3.0	3.0	4.0	4.0		4.0				4.0
All-Red Time (s)	3.0		0.0	0.0	3.0	3.0		2.0				2.0
Lost Time Adjust (s)	1.0			1.0	1.0	1.0		1.0				1.0
Total Lost Time (s)	8.0			4.0	8.0	8.0		7.0				7.0
Lead/Lag	Lag		Lead	Lead	Lag	Lag						
Lead-Lag Optimize?												
Walk Time (s)	5.0				5.0	5.0		4.0				4.0
Flash Dont Walk (s)	22.0				33.0	33.0		21.0				21.0
Pedestrian Calls (#/hr)	0				0	0		0				0
Act Effct Green (s)	46.0			13.0	39.0	39.0		24.0				24.0
Actuated g/C Ratio	0.33			0.09	0.28	0.28		0.17				0.17

Lanes, Volumes, Timings  
 15: Stony Island Avenue & South Chicago Avenue & 79th Street

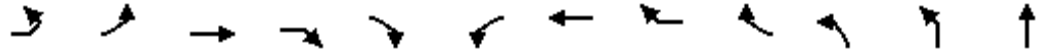
02/23/2018



Lane Group	NWR2
Lane Configurations	
Traffic Volume (vph)	3
Future Volume (vph)	3
Ideal Flow (vphpl)	1800
Lane Width (ft)	12
Storage Length (ft)	
Storage Lanes	
Taper Length (ft)	
Lane Util. Factor	0.95
Fr	
Flt Protected	
Satd. Flow (prot)	0
Flt Permitted	
Satd. Flow (perm)	0
Right Turn on Red	No
Satd. Flow (RTOR)	
Link Speed (mph)	
Link Distance (ft)	
Travel Time (s)	
Peak Hour Factor	0.95
Adj. Flow (vph)	3
Shared Lane Traffic (%)	
Lane Group Flow (vph)	0
Enter Blocked Intersection	No
Lane Alignment	Right
Median Width(ft)	
Link Offset(ft)	
Crosswalk Width(ft)	
Two way Left Turn Lane	
Headway Factor	1.07
Turning Speed (mph)	9
Turn Type	
Protected Phases	
Permitted Phases	
Minimum Split (s)	
Total Split (s)	
Total Split (%)	
Maximum Green (s)	
Yellow Time (s)	
All-Red Time (s)	
Lost Time Adjust (s)	
Total Lost Time (s)	
Lead/Lag	
Lead-Lag Optimize?	
Walk Time (s)	
Flash Dont Walk (s)	
Pedestrian Calls (#/hr)	
Act Effct Green (s)	
Actuated g/C Ratio	

Lanes, Volumes, Timings  
 15: Stony Island Avenue & South Chicago Avenue & 79th Street

02/23/2018

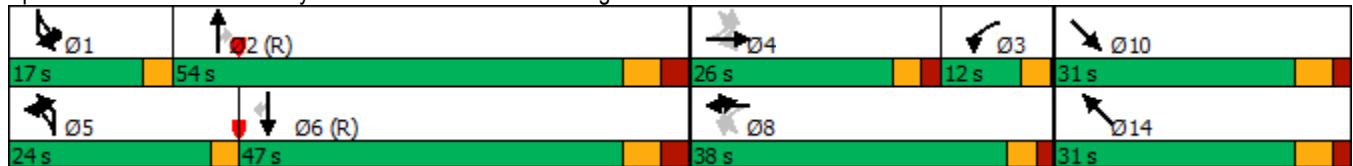


Lane Group	EBL2	EBL	EBT	EBR	EBR2	WBL	WBT	WBR	WBR2	NBL2	NBL	NBT
v/c Ratio		0.23	0.61	0.15		0.43	0.45	0.26			0.61	0.75
Control Delay		59.2	68.3	54.8		53.4	50.5	46.3			68.0	45.6
Queue Delay		0.0	0.0	0.0		0.0	0.0	0.0			0.0	0.0
Total Delay		59.2	68.3	54.8		53.4	50.5	46.3			68.0	45.6
LOS		E	E	D		D	D	D			E	D
Approach Delay			65.1				50.3					47.2
Approach LOS			E				D					D
Stops (vph)		22	127	26		87	146	73			129	989
Fuel Used(gal)		1	4	1		3	4	2			3	23
CO Emissions (g/hr)		51	305	59		182	288	143			239	1575
NOx Emissions (g/hr)		10	59	11		35	56	28			46	306
VOC Emissions (g/hr)		12	71	14		42	67	33			55	365
Dilemma Vehicles (#)		0	0	0		0	0	0			0	0
Queue Length 50th (ft)		20	124	25		86	143	71			126	355
Queue Length 95th (ft)		52	200	57		147	225	128			202	412
Internal Link Dist (ft)			1585				297					174
Turn Bay Length (ft)		100		100		175		150			90	
Base Capacity (vph)		109	235	207		244	376	331			239	1583
Starvation Cap Reductn		0	0	0		0	0	0			0	0
Spillback Cap Reductn		0	0	0		0	0	0			0	0
Storage Cap Reductn		0	0	0		0	0	0			0	0
Reduced v/c Ratio		0.23	0.61	0.15		0.43	0.45	0.26			0.61	0.75

Intersection Summary

Area Type:	Other
Cycle Length:	140
Actuated Cycle Length:	140
Offset:	0 (0%), Referenced to phase 2:NBT and 6:SBT, Start of Green
Natural Cycle:	115
Control Type:	Pretimed
Maximum v/c Ratio:	0.75
Intersection Signal Delay:	50.0
Intersection LOS:	D
Intersection Capacity Utilization:	113.0%
ICU Level of Service:	H
Analysis Period (min):	15

Splits and Phases: 15: Stony Island Avenue & South Chicago Avenue & 79th Street



Lanes, Volumes, Timings

15: Stony Island Avenue & South Chicago Avenue & 79th Street

02/23/2018



Lane Group	NBR	NBR2	SBL2	SBL	SBT	SBR	SBR2	SET	SER	SER2	NWT	NWR
v/c Ratio	0.19			0.52	0.56	0.18		0.50				0.51
Control Delay	34.9			73.0	45.0	39.8		56.2				56.4
Queue Delay	0.0			0.0	0.0	0.0		0.0				0.0
Total Delay	34.9			73.0	45.0	39.8		56.2				56.4
LOS	C			E	D	D		E				E
Approach Delay					47.1			56.2				56.4
Approach LOS					D			E				E
Stops (vph)	61			72	594	51		233				239
Fuel Used(gal)	1			2	14	1		6				6
CO Emissions (g/hr)	102			135	954	85		401				437
NOx Emissions (g/hr)	20			26	186	16		78				85
VOC Emissions (g/hr)	24			31	221	20		93				101
Dilemma Vehicles (#)	0			0	0	0		0				0
Queue Length 50th (ft)	60			71	214	51		121				124
Queue Length 95th (ft)	106			128	260	94		170				173
Internal Link Dist (ft)					610			632				809
Turn Bay Length (ft)	130											
Base Capacity (vph)	492			155	1342	417		550				553
Starvation Cap Reductn	0			0	0	0		0				0
Spillback Cap Reductn	0			0	0	0		0				0
Storage Cap Reductn	0			0	0	0		0				0
Reduced v/c Ratio	0.19			0.52	0.56	0.18		0.50				0.51

Intersection Summary



Lane Group	NWR2
v/c Ratio	
Control Delay	
Queue Delay	
Total Delay	
LOS	
Approach Delay	
Approach LOS	
Stops (vph)	
Fuel Used(gal)	
CO Emissions (g/hr)	
NOx Emissions (g/hr)	
VOC Emissions (g/hr)	
Dilemma Vehicles (#)	
Queue Length 50th (ft)	
Queue Length 95th (ft)	
Internal Link Dist (ft)	
Turn Bay Length (ft)	
Base Capacity (vph)	
Starvation Cap Reductn	
Spillback Cap Reductn	
Storage Cap Reductn	
Reduced v/c Ratio	
Intersection Summary	

Lanes, Volumes, Timings  
16: 79th Street & Cregier Avenue

02/23/2018



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	25	205	0	0	318	25	25	100	25	0	0	0
Future Volume (vph)	25	205	0	0	318	25	25	100	25	0	0	0
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Fr <sub>t</sub>					0.990			0.978				
Fl <sub>t</sub> Protected		0.995						0.992				
Satd. Flow (prot)	0	1574	0	0	1747	0	0	1712	0	0	0	0
Fl <sub>t</sub> Permitted		0.945						0.992				
Satd. Flow (perm)	0	1495	0	0	1747	0	0	1712	0	0	0	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)					9			15				
Link Speed (mph)		30			30			30				30
Link Distance (ft)		946			328			152				657
Travel Time (s)		21.5			7.5			3.5				14.9
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Bus Blockages (#/hr)	0	1	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)		0										
Adj. Flow (vph)	27	223	0	0	346	27	27	109	27	0	0	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	250	0	0	373	0	0	163	0	0	0	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			0				0
Link Offset(ft)		0			0			0				0
Crosswalk Width(ft)		16			16			16				16
Two way Left Turn Lane												
Headway Factor	1.07	1.23	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07
Turning Speed (mph)	15		9	15		9	15		9	15		9
Turn Type	Perm	NA			NA		Perm	NA				
Protected Phases		4			8			2				
Permitted Phases	4						2					
Minimum Split (s)	19.0	19.0			19.0		23.0	23.0				
Total Split (s)	44.0	44.0			44.0		26.0	26.0				
Total Split (%)	62.9%	62.9%			62.9%		37.1%	37.1%				
Maximum Green (s)	40.0	40.0			40.0		22.0	22.0				
Yellow Time (s)	3.0	3.0			3.0		3.0	3.0				
All-Red Time (s)	1.0	1.0			1.0		1.0	1.0				
Lost Time Adjust (s)		1.0			1.0			1.0				
Total Lost Time (s)		5.0			5.0			5.0				
Lead/Lag												
Lead-Lag Optimize?												
Walk Time (s)	5.0	5.0			5.0		5.0	5.0				
Flash Dont Walk (s)	10.0	10.0			10.0		14.0	14.0				
Pedestrian Calls (#/hr)	0	0			0		0	0				
Act Effct Green (s)		39.0			39.0			21.0				
Actuated g/C Ratio		0.56			0.56			0.30				
v/c Ratio		0.30			0.38			0.31				
Control Delay		2.7			9.9			19.1				

Lanes, Volumes, Timings  
 16: 79th Street & Cregier Avenue

02/23/2018

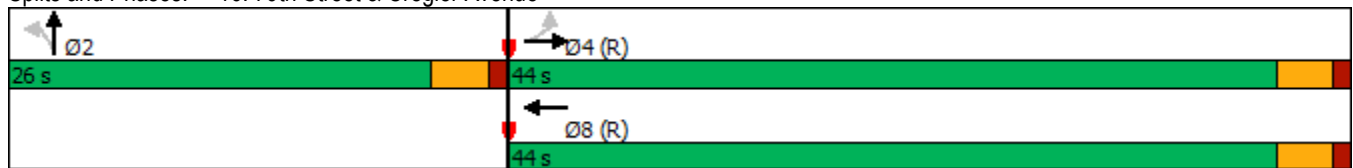


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Queue Delay		0.0			0.0			0.0				
Total Delay		2.7			9.9			19.1				
LOS		A			A			B				
Approach Delay		2.7			9.9			19.1				
Approach LOS		A			A			B				
Stops (vph)		32			177			101				
Fuel Used(gal)		3			3			1				
CO Emissions (g/hr)		187			178			92				
NOx Emissions (g/hr)		36			35			18				
VOC Emissions (g/hr)		43			41			21				
Dilemma Vehicles (#)		0			0			0				
Queue Length 50th (ft)		16			80			48				
Queue Length 95th (ft)		22			133			95				
Internal Link Dist (ft)		866			248			72			577	
Turn Bay Length (ft)												
Base Capacity (vph)		832			977			524				
Starvation Cap Reductn		0			0			0				
Spillback Cap Reductn		0			0			0				
Storage Cap Reductn		0			0			0				
Reduced v/c Ratio		0.30			0.38			0.31				

Intersection Summary

Area Type: Other  
 Cycle Length: 70  
 Actuated Cycle Length: 70  
 Offset: 0 (0%), Referenced to phase 4:EBTL and 8:WBT, Start of Green  
 Natural Cycle: 45  
 Control Type: Pretimed  
 Maximum v/c Ratio: 0.38  
 Intersection Signal Delay: 9.5  
 Intersection LOS: A  
 Intersection Capacity Utilization 57.7%  
 ICU Level of Service B  
 Analysis Period (min) 15

Splits and Phases: 16: 79th Street & Cregier Avenue





Lanes, Volumes, Timings  
 58: Paulina Street & 79th Street

02/23/2018



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑			↑		↗		↗	↗		↗
Traffic Volume (vph)	0	540	0	0	419	0	8	0	28	29	0	5
Future Volume (vph)	0	540	0	0	419	0	8	0	28	29	0	5
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Width (ft)	12	11	12	12	11	10	12	12	12	12	12	12
Storage Length (ft)	0		0	0		0	0		10	0		10
Storage Lanes	0		0	0		0	1		1	1		1
Taper Length (ft)	0			0			0			0		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Fr <sub>t</sub>									0.850			0.850
Fl <sub>t</sub> Protected							0.950			0.950		
Satd. Flow (prot)	0	1369	0	0	1335	0	1710	0	1471	1598	0	1530
Fl <sub>t</sub> Permitted							0.950			0.950		
Satd. Flow (perm)	0	1369	0	0	1335	0	1710	0	1471	1598	0	1530
Link Speed (mph)		30			30			30				30
Link Distance (ft)		664			664			657				669
Travel Time (s)		15.1			15.1			14.9				15.2
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.67	0.92	0.70	0.66	0.92	0.42
Heavy Vehicles (%)	2%	11%	2%	2%	10%	2%	0%	2%	4%	7%	2%	0%
Bus Blockages (#/hr)	0	6	6	0	6	6	0	0	0	0	0	0
Parking (#/hr)		1			7							
Adj. Flow (vph)	0	587	0	0	455	0	12	0	40	44	0	12
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	587	0	0	455	0	12	0	40	44	0	12
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		9			9			12				12
Link Offset(ft)		0			0			0				0
Crosswalk Width(ft)		16			16			16				16
Two way Left Turn Lane												
Headway Factor	1.07	1.33	1.07	1.07	1.38	1.17	1.07	1.07	1.07	1.07	1.07	1.07
Turning Speed (mph)	15		9	15		9	15		9	15		9
Sign Control		Free			Free			Stop				Stop

Intersection Summary	
Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	49.2%
	ICU Level of Service A
Analysis Period (min)	15

Lanes, Volumes, Timings  
69: Union Avenue & 79th Street

02/23/2018



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕				
Traffic Volume (vph)	25	519	0	0	408	16	2	8	8	0	0	0
Future Volume (vph)	25	519	0	0	408	16	2	8	8	0	0	0
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Width (ft)	12	10	12	12	10	12	12	16	12	12	16	16
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Fr <sub>t</sub>					0.991			0.942				
Fl <sub>t</sub> Protected		0.996						0.993				
Satd. Flow (prot)	0	1360	0	0	1371	0	0	1908	0	0	0	0
Fl <sub>t</sub> Permitted		0.996						0.993				
Satd. Flow (perm)	0	1360	0	0	1371	0	0	1908	0	0	0	0
Link Speed (mph)		30			30			30				30
Link Distance (ft)		665			358			654				664
Travel Time (s)		15.1			8.1			14.9				15.1
Peak Hour Factor	0.52	0.95	0.92	0.92	0.96	0.50	0.50	0.67	0.67	0.92	0.92	0.92
Heavy Vehicles (%)	8%	11%	2%	2%	10%	0%	0%	0%	0%	2%	2%	2%
Parking (#/hr)		0			0							
Adj. Flow (vph)	48	546	0	0	425	32	4	12	12	0	0	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	594	0	0	457	0	0	28	0	0	0	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			0				0
Link Offset(ft)		0			0			0				0
Crosswalk Width(ft)		16			16			16				16
Two way Left Turn Lane												
Headway Factor	1.07	1.33	1.07	1.07	1.33	1.07	1.07	0.91	1.07	1.07	0.91	0.91
Turning Speed (mph)	15		9	15		9	15		9	15		9
Sign Control		Free			Free			Stop			Stop	

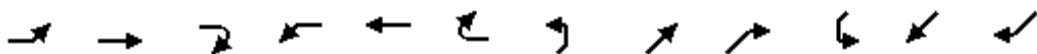
Intersection Summary

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	62.0%
ICU Level of Service	B
Analysis Period (min)	15

# **PM Reports**

Lanes, Volumes, Timings  
1: W. Columbus Ave. & W. 79th St.

02/23/2018



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Traffic Volume (vph)	211	523	5	135	476	0	0	511	147	0	669	22
Future Volume (vph)	211	523	5	135	476	0	0	511	147	0	669	22
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Width (ft)	10	10	10	10	10	11	12	12	10	12	11	11
Storage Length (ft)	180		100	0		0	0		115	0		0
Storage Lanes	1		1	1		1	0		0	0		0
Taper Length (ft)	75			0			0			0		
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.91	0.91	1.00	0.95	0.95
Frt			0.850					0.966			0.995	
Flt Protected	0.950			0.950								
Satd. Flow (prot)	1438	2669	1428	1451	2705	1706	0	4599	0	0	3184	0
Flt Permitted	0.359			0.439								
Satd. Flow (perm)	543	2669	1428	670	2705	1706	0	4599	0	0	3184	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			136					82			4	
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		965			345			696			414	
Travel Time (s)		21.9			7.8			15.8			9.4	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	11%	13%	0%	10%	18%	2%	0%	3%	4%	2%	3%	13%
Parking (#/hr)		2										
Adj. Flow (vph)	229	568	5	147	517	0	0	555	160	0	727	24
Shared Lane Traffic (%)												
Lane Group Flow (vph)	229	568	5	147	517	0	0	715	0	0	751	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	L NA	Right	Left	Left	R NA	Left	Left	Right	Left	Left	Right
Median Width(ft)		10			10			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.17	1.26	1.17	1.17	1.17	1.12	1.07	1.07	1.17	1.07	1.12	1.12
Turning Speed (mph)	15		9	15		9	15		9	15		9
Turn Type	custom	NA	Perm	pm+pt	NA	custom		NA			NA	
Protected Phases	7	4 10		3	8	9		2			6	
Permitted Phases	4		4 10	8		8						
Minimum Split (s)	8.0			8.0	33.0	7.0		44.0			45.0	
Total Split (s)	11.0			9.0	33.0	7.0		44.0			49.0	
Total Split (%)	11.0%			9.0%	33.0%	7.0%		44.0%			49.0%	
Maximum Green (s)	8.0			5.0	27.0	4.5		38.0			43.0	
Yellow Time (s)	3.0			3.5	4.0	2.0		4.0			4.0	
All-Red Time (s)	0.0			0.5	2.0	0.5		2.0			2.0	
Lost Time Adjust (s)	1.0			1.0	1.0	1.0		1.0			1.0	
Total Lost Time (s)	4.0			5.0	7.0	3.5		7.0			7.0	
Lead/Lag					Lag	Lead		Lag				
Lead-Lag Optimize?					Yes							
Walk Time (s)					5.0			4.0			5.0	
Flash Dont Walk (s)					22.0			34.0			34.0	
Pedestrian Calls (#/hr)					0			0			0	

Lanes, Volumes, Timings  
 1: W. Columbus Ave. & W. 79th St.

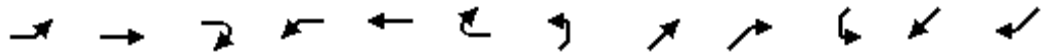
02/23/2018

Lane Group	Ø1	Ø4	Ø10
Lane Configurations			
Traffic Volume (vph)			
Future Volume (vph)			
Ideal Flow (vphpl)			
Lane Width (ft)			
Storage Length (ft)			
Storage Lanes			
Taper Length (ft)			
Lane Util. Factor			
Frt			
Flt Protected			
Satd. Flow (prot)			
Flt Permitted			
Satd. Flow (perm)			
Right Turn on Red			
Satd. Flow (RTOR)			
Link Speed (mph)			
Link Distance (ft)			
Travel Time (s)			
Peak Hour Factor			
Heavy Vehicles (%)			
Parking (#/hr)			
Adj. Flow (vph)			
Shared Lane Traffic (%)			
Lane Group Flow (vph)			
Enter Blocked Intersection			
Lane Alignment			
Median Width(ft)			
Link Offset(ft)			
Crosswalk Width(ft)			
Two way Left Turn Lane			
Headway Factor			
Turning Speed (mph)			
Turn Type			
Protected Phases	1	4	10
Permitted Phases			
Minimum Split (s)	5.0	33.0	7.0
Total Split (s)	5.0	35.0	7.0
Total Split (%)	5%	35%	7%
Maximum Green (s)	2.0	29.0	5.0
Yellow Time (s)	3.0	4.0	2.0
All-Red Time (s)	0.0	2.0	0.0
Lost Time Adjust (s)			
Total Lost Time (s)			
Lead/Lag	Lead	Lag	Lead
Lead-Lag Optimize?			
Walk Time (s)		5.0	
Flash Dont Walk (s)		22.0	
Pedestrian Calls (#/hr)		0	

# Lanes, Volumes, Timings

## 1: W. Columbus Ave. & W. 79th St.

02/23/2018



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NEL	NET	NER	SWL	SWT	SWR
Act Effct Green (s)	38.0	28.0	28.0	32.0	26.0			37.0			42.0	
Actuated g/C Ratio	0.38	0.28	0.28	0.32	0.26			0.37			0.42	
v/c Ratio	0.85	0.76	0.01	0.60	0.74			0.41			0.56	
Control Delay	60.5	40.6	0.0	16.4	26.4			21.3			18.7	
Queue Delay	0.0	0.0	0.0	0.0	0.0			0.0			0.7	
Total Delay	60.5	40.6	0.0	16.4	26.4			21.3			19.4	
LOS	E	D	A	B	C			C			B	
Approach Delay		46.0			24.2			21.3			19.4	
Approach LOS		D			C			C			B	
Stops (vph)	144	468	0	43	201			415			501	
Fuel Used(gal)	5	11	0	1	5			9			8	
CO Emissions (g/hr)	348	758	3	74	346			609			533	
NOx Emissions (g/hr)	68	148	1	14	67			119			104	
VOC Emissions (g/hr)	81	176	1	17	80			141			124	
Dilemma Vehicles (#)	0	0	0	0	0			0			0	
Queue Length 50th (ft)	102	174	0	19	61			107			189	
Queue Length 95th (ft)	#168	239	0	m27	118			141			237	
Internal Link Dist (ft)		885			265			616			334	
Turn Bay Length (ft)	180		100									
Base Capacity (vph)	268	747	497	245	703			1753			1339	
Starvation Cap Reductn	0	0	0	0	0			0			270	
Spillback Cap Reductn	0	0	0	0	0			0			0	
Storage Cap Reductn	0	0	0	0	0			0			0	
Reduced v/c Ratio	0.85	0.76	0.01	0.60	0.74			0.41			0.70	

### Intersection Summary

Area Type: Other

Cycle Length: 100

Actuated Cycle Length: 100

Offset: 96 (96%), Referenced to phase 1:Hold and 6:SWT, Start of Green

Natural Cycle: 100

Control Type: Pretimed

Maximum v/c Ratio: 0.85

Intersection Signal Delay: 28.2

Intersection LOS: C

Intersection Capacity Utilization 82.3%

ICU Level of Service E

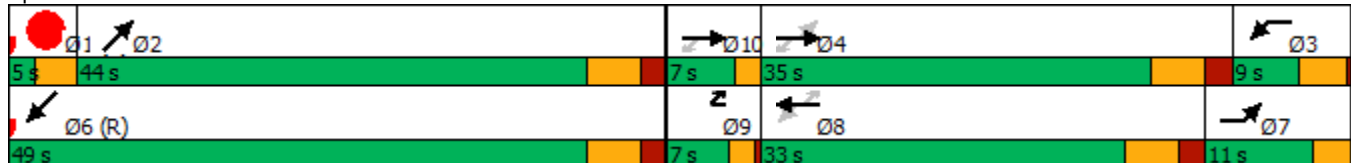
Analysis Period (min) 15

# 95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

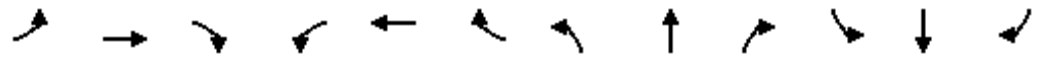
### Splits and Phases: 1: W. Columbus Ave. & W. 79th St.



Lane Group	Ø1	Ø4	Ø10
Act Effct Green (s)			
Actuated g/C Ratio			
v/c Ratio			
Control Delay			
Queue Delay			
Total Delay			
LOS			
Approach Delay			
Approach LOS			
Stops (vph)			
Fuel Used(gal)			
CO Emissions (g/hr)			
NOx Emissions (g/hr)			
VOC Emissions (g/hr)			
Dilemma Vehicles (#)			
Queue Length 50th (ft)			
Queue Length 95th (ft)			
Internal Link Dist (ft)			
Turn Bay Length (ft)			
Base Capacity (vph)			
Starvation Cap Reductn			
Spillback Cap Reductn			
Storage Cap Reductn			
Reduced v/c Ratio			
<b>Intersection Summary</b>			

Lanes, Volumes, Timings  
 2: S. Kedzie Ave. & W. 79th St.

02/23/2018



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑	↗	↖	↑↑			↔			↔	
Traffic Volume (vph)	0	522	148	26	500	45	107	433	32	25	619	4
Future Volume (vph)	0	522	148	26	500	45	107	433	32	25	619	4
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Width (ft)	11	11	12	9	11	12	12	11	12	12	11	12
Storage Length (ft)	0		0	40		0	0		0	0		0
Storage Lanes	0		1	1		0	0		0	0		0
Taper Length (ft)	0			25			0			0		
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Fr <sub>t</sub>			0.850		0.988			0.992			0.999	
Fl <sub>t</sub> Protected				0.950				0.991			0.998	
Satd. Flow (prot)	0	2978	1436	1193	2824	0	0	3143	0	0	3166	0
Fl <sub>t</sub> Permitted				0.324				0.595			0.909	
Satd. Flow (perm)	0	2978	1436	407	2824	0	0	1887	0	0	2883	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			161		9			9			1	
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		345			652			668			245	
Travel Time (s)		7.8			14.8			15.2			5.6	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	2%	11%	4%	29%	16%	12%	3%	3%	10%	0%	3%	0%
Bus Blockages (#/hr)	0	0	6	0	0	0	0	0	0	0	6	0
Adj. Flow (vph)	0	567	161	28	543	49	116	471	35	27	673	4
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	567	161	28	592	0	0	622	0	0	704	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	R NA	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		9			9			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.12	1.12	1.11	1.22	1.12	1.07	1.07	1.12	1.07	1.07	1.14	1.07
Turning Speed (mph)	15		9	15		9	15		9	15		9
Turn Type		NA	custom	custom	NA		pm+pt	NA		Perm	NA	
Protected Phases		4	9		8 10		5	2			6	
Permitted Phases			4	8			2			6		
Minimum Split (s)		24.0	7.0	24.0			11.0	34.0		34.0	34.0	
Total Split (s)		35.0	7.0	35.0			11.0	58.0		47.0	47.0	
Total Split (%)		35.0%	7.0%	35.0%			11.0%	58.0%		47.0%	47.0%	
Maximum Green (s)		29.0	5.0	29.0			6.0	52.0		41.0	41.0	
Yellow Time (s)		4.0	2.0	4.0			3.0	4.0		4.0	4.0	
All-Red Time (s)		2.0	0.0	2.0			2.0	2.0		2.0	2.0	
Lost Time Adjust (s)		1.0	1.0	1.0				1.0			1.0	
Total Lost Time (s)		7.0	3.0	7.0				7.0			7.0	
Lead/Lag		Lag	Lead	Lag			Lead			Lag	Lag	
Lead-Lag Optimize?				Yes			Yes			Yes	Yes	
Walk Time (s)		5.0		5.0				5.0		5.0	5.0	
Flash Dont Walk (s)		13.0		13.0				23.0		23.0	23.0	
Pedestrian Calls (#/hr)		0		0				0		0	0	



Lane Group	Ø10
Lane Configurations	
Traffic Volume (vph)	
Future Volume (vph)	
Ideal Flow (vphpl)	
Lane Width (ft)	
Storage Length (ft)	
Storage Lanes	
Taper Length (ft)	
Lane Util. Factor	
Fr <sub>t</sub>	
Fl <sub>t</sub> Protected	
Satd. Flow (prot)	
Fl <sub>t</sub> Permitted	
Satd. Flow (perm)	
Right Turn on Red	
Satd. Flow (RTOR)	
Link Speed (mph)	
Link Distance (ft)	
Travel Time (s)	
Peak Hour Factor	
Heavy Vehicles (%)	
Bus Blockages (#/hr)	
Adj. Flow (vph)	
Shared Lane Traffic (%)	
Lane Group Flow (vph)	
Enter Blocked Intersection	
Lane Alignment	
Median Width(ft)	
Link Offset(ft)	
Crosswalk Width(ft)	
Two way Left Turn Lane	
Headway Factor	
Turning Speed (mph)	
Turn Type	
Protected Phases	10
Permitted Phases	
Minimum Split (s)	7.0
Total Split (s)	7.0
Total Split (%)	7%
Maximum Green (s)	5.0
Yellow Time (s)	2.0
All-Red Time (s)	0.0
Lost Time Adjust (s)	
Total Lost Time (s)	
Lead/Lag	Lead
Lead-Lag Optimize?	Yes
Walk Time (s)	
Flash Dont Walk (s)	
Pedestrian Calls (#/hr)	

Lanes, Volumes, Timings  
2: S. Kedzie Ave. & W. 79th St.

02/23/2018

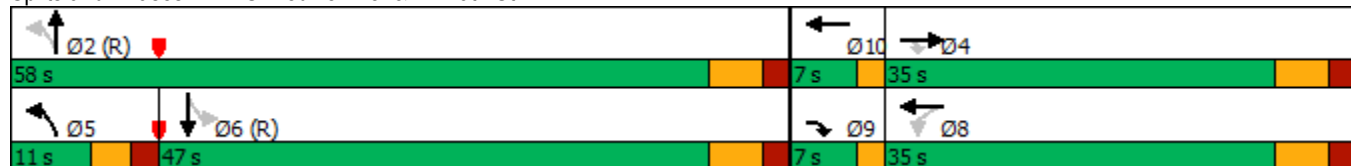


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Act Effct Green (s)		28.0	39.0	28.0	28.0			51.0				40.0
Actuated g/C Ratio		0.28	0.39	0.28	0.28			0.51				0.40
v/c Ratio		0.68	0.24	0.25	0.74			0.61				0.61
Control Delay		18.4	1.3	34.8	38.9			19.2				4.1
Queue Delay		0.3	0.0	0.0	0.0			0.0				0.1
Total Delay		18.7	1.3	34.8	38.9			19.3				4.2
LOS		B	A	C	D			B				A
Approach Delay		14.9			38.7			19.3				4.2
Approach LOS		B			D			B				A
Stops (vph)		178	6	22	478			328				88
Fuel Used(gal)		4	0	0	10			7				2
CO Emissions (g/hr)		304	33	31	680			492				159
NOx Emissions (g/hr)		59	6	6	132			96				31
VOC Emissions (g/hr)		70	8	7	158			114				37
Dilemma Vehicles (#)		0	0	0	0			0				0
Queue Length 50th (ft)		55	2	14	177			120				34
Queue Length 95th (ft)		106	m5	40	242			161				42
Internal Link Dist (ft)		265			572			588				165
Turn Bay Length (ft)				40								
Base Capacity (vph)		833	658	113	797			1017				1153
Starvation Cap Reductn		34	0	0	0			0				25
Spillback Cap Reductn		0	0	0	0			12				0
Storage Cap Reductn		0	0	0	0			0				0
Reduced v/c Ratio		0.71	0.24	0.25	0.74			0.62				0.62

Intersection Summary

Area Type: Other  
 Cycle Length: 100  
 Actuated Cycle Length: 100  
 Offset: 99 (99%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green  
 Natural Cycle: 80  
 Control Type: Pretimed  
 Maximum v/c Ratio: 0.74  
 Intersection Signal Delay: 18.6  
 Intersection LOS: B  
 Intersection Capacity Utilization 87.0%  
 ICU Level of Service E  
 Analysis Period (min) 15  
 m Volume for 95th percentile queue is metered by upstream signal.




















Splits and Phases: 2: S. Kedzie Ave. & W. 79th St.



Lane Group	Ø10
Act Effct Green (s)	
Actuated g/C Ratio	
v/c Ratio	
Control Delay	
Queue Delay	
Total Delay	
LOS	
Approach Delay	
Approach LOS	
Stops (vph)	
Fuel Used(gal)	
CO Emissions (g/hr)	
NOx Emissions (g/hr)	
VOC Emissions (g/hr)	
Dilemma Vehicles (#)	
Queue Length 50th (ft)	
Queue Length 95th (ft)	
Internal Link Dist (ft)	
Turn Bay Length (ft)	
Base Capacity (vph)	
Starvation Cap Reductn	
Spillback Cap Reductn	
Storage Cap Reductn	
Reduced v/c Ratio	
Intersection Summary	

Lanes, Volumes, Timings  
 3: W. Columbus Ave. & S. Kedzie Ave.

02/23/2018

												
Lane Group	NBL	NBT	NBR	SBL	SBT	SBR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Traffic Volume (vph)	0	401	77	8	559	481	354	365	3	86	410	11
Future Volume (vph)	0	401	77	8	559	481	354	365	3	86	410	11
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Width (ft)	12	11	12	12	10	10	11	11	11	10	11	12
Storage Length (ft)	0		0	0		100	0		0	90		0
Storage Lanes	0		0	0		1	1		0	1		0
Taper Length (ft)	0			0			0			25		
Lane Util. Factor	0.95	0.95	0.95	0.95	0.95	1.00	1.00	0.95	0.95	1.00	0.95	0.95
Fr <sub>t</sub>		0.976				0.850		0.999			0.996	
Fl <sub>t</sub> Protected					0.999		0.950			0.950		
Satd. Flow (prot)	0	3103	0	0	3047	1360	1574	3169	0	1580	3050	0
Fl <sub>t</sub> Permitted					0.945		0.308			0.516		
Satd. Flow (perm)	0	3103	0	0	2882	1360	510	3169	0	858	3050	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		24				64		1			2	
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		245			494			414			728	
Travel Time (s)		5.6			11.2			9.4			16.5	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	0%	4%	4%	50%	4%	5%	5%	4%	33%	1%	8%	6%
Adj. Flow (vph)	0	436	84	9	608	523	385	397	3	93	446	12
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	520	0	0	617	523	385	400	0	93	458	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			11			11	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.07	1.12	1.07	1.07	1.17	1.17	1.12	1.12	1.12	1.17	1.12	1.07
Turning Speed (mph)	15		9	15		9	15		9	15		9
Turn Type		NA		Perm	NA	pm+ov	pm+pt	NA		Perm	NA	
Protected Phases		2			6	7	7	4			8	
Permitted Phases	2			6		6	4			8		
Minimum Split (s)	28.0	28.0		28.0	28.0	8.0	8.0	26.0		26.0	26.0	
Total Split (s)	40.0	40.0		40.0	40.0	32.0	32.0	60.0		28.0	28.0	
Total Split (%)	40.0%	40.0%		40.0%	40.0%	32.0%	32.0%	60.0%		28.0%	28.0%	
Maximum Green (s)	34.0	34.0		34.0	34.0	29.0	29.0	54.0		22.0	22.0	
Yellow Time (s)	4.0	4.0		4.0	4.0	3.0	3.0	4.0		4.0	4.0	
All-Red Time (s)	2.0	2.0		2.0	2.0	0.0	0.0	2.0		2.0	2.0	
Lost Time Adjust (s)		1.0			1.0	1.0	1.0	1.0		1.0	1.0	
Total Lost Time (s)		7.0			7.0	4.0	4.0	7.0		7.0	7.0	
Lead/Lag						Lead	Lead			Lag	Lag	
Lead-Lag Optimize?						Yes	Yes			Yes	Yes	
Walk Time (s)	5.0	5.0		5.0	5.0			5.0		5.0	5.0	
Flash Dont Walk (s)	17.0	17.0		17.0	17.0			15.0		15.0	15.0	
Pedestrian Calls (#/hr)	0	0		0	0			0		0	0	
Act Effct Green (s)		33.0			33.0	68.0	56.0	53.0		21.0	21.0	

Lanes, Volumes, Timings  
 3: W. Columbus Ave. & S. Kedzie Ave.

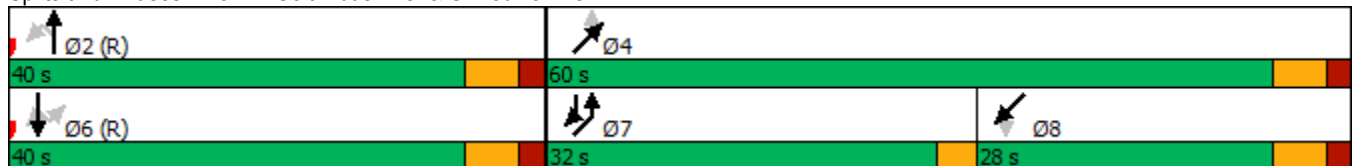
02/23/2018

Lane Group	NBL	NBT	NBR	SBL	SBT	SBR	NEL	NET	NER	SWL	SWT	SWR
Actuated g/C Ratio		0.33			0.33	0.68	0.56	0.53		0.21	0.21	
v/c Ratio		0.50			0.65	0.55	0.66	0.24		0.52	0.71	
Control Delay		13.4			32.4	9.7	27.8	20.4		46.6	43.6	
Queue Delay		1.4			0.0	0.0	1.0	0.0		0.0	0.0	
Total Delay		14.9			32.4	9.7	28.8	20.4		46.6	43.6	
LOS		B			C	A	C	C		D	D	
Approach Delay		14.9			22.0			24.5			44.1	
Approach LOS		B			C			C			D	
Stops (vph)		417			471	210	264	270		77	381	
Fuel Used(gal)		5			9	4	5	4		2	8	
CO Emissions (g/hr)		316			597	277	322	294		121	576	
NOx Emissions (g/hr)		62			116	54	63	57		24	112	
VOC Emissions (g/hr)		73			138	64	75	68		28	133	
Dilemma Vehicles (#)		0			0	0	0	0		0	0	
Queue Length 50th (ft)		92			175	131	195	104		53	143	
Queue Length 95th (ft)		110			236	214	m271	m148		107	199	
Internal Link Dist (ft)		165			414			334			648	
Turn Bay Length (ft)						100				90		
Base Capacity (vph)		1040			951	945	583	1680		180	642	
Starvation Cap Reductn		321			0	0	60	0		0	0	
Spillback Cap Reductn		0			0	0	0	0		0	0	
Storage Cap Reductn		0			0	0	0	0		0	0	
Reduced v/c Ratio		0.72			0.65	0.55	0.74	0.24		0.52	0.71	

Intersection Summary

Area Type: Other  
 Cycle Length: 100  
 Actuated Cycle Length: 100  
 Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green  
 Natural Cycle: 65  
 Control Type: Pretimed  
 Maximum v/c Ratio: 0.71  
 Intersection Signal Delay: 25.5 Intersection LOS: C  
 Intersection Capacity Utilization 81.4% ICU Level of Service D  
 Analysis Period (min) 15  
 m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 3: W. Columbus Ave. & S. Kedzie Ave.



Lanes, Volumes, Timings  
4: Ashland Avenue & 79th Street

02/23/2018



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	75	379	30	63	439	67	62	368	57	48	826	96
Future Volume (vph)	75	379	30	63	439	67	62	368	57	48	826	96
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Width (ft)	9	10	10	9	10	11	10	11	11	10	11	11
Storage Length (ft)	80		100	60		30	100		30	100		30
Storage Lanes	1		1	1		1	1		1	1		1
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Ped Bike Factor	0.98		0.93	0.97		0.94	0.98		0.86	0.93		0.85
Frt			0.850			0.850			0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1539	1268	1360	1494	1321	1324	1425	2667	977	1506	2661	906
Flt Permitted	0.362			0.425			0.198			0.513		
Satd. Flow (perm)	576	1268	1265	650	1321	1250	290	2667	844	758	2661	767
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			50			50			50			50
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		664			1315			665			670	
Travel Time (s)		15.1			29.9			15.1			15.2	
Confl. Peds. (#/hr)	41		54	54		41	47		41	41		47
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Heavy Vehicles (%)	0%	10%	5%	3%	10%	9%	12%	6%	4%	6%	5%	9%
Bus Blockages (#/hr)	0	0	0	0	0	6	0	0	8	0	0	8
Parking (#/hr)		14			7			38	38		42	42
Adj. Flow (vph)	82	416	33	69	482	74	68	404	63	53	908	105
Shared Lane Traffic (%)												
Lane Group Flow (vph)	82	416	33	69	482	74	68	404	63	53	908	105
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			10			10	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.22	1.47	1.17	1.22	1.40	1.15	1.17	1.36	1.77	1.17	1.38	1.83
Turning Speed (mph)	15		9	15		9	15		9	15		9
Turn Type	Perm	NA	Perm	Perm	NA	Perm	Perm	NA	Perm	Perm	NA	Perm
Protected Phases		4			8			2			6	
Permitted Phases	4		4	8		8	2		2	6		6
Minimum Split (s)	38.0	38.0	38.0	38.0	38.0	38.0	27.0	27.0	27.0	27.0	27.0	27.0
Total Split (s)	59.0	59.0	59.0	59.0	59.0	59.0	51.0	51.0	51.0	51.0	51.0	51.0
Total Split (%)	53.6%	53.6%	53.6%	53.6%	53.6%	53.6%	46.4%	46.4%	46.4%	46.4%	46.4%	46.4%
Maximum Green (s)	51.0	51.0	51.0	51.0	51.0	51.0	43.0	43.0	43.0	43.0	43.0	43.0
Yellow Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
All-Red Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Lost Time Adjust (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Total Lost Time (s)	9.0	9.0	9.0	9.0	9.0	9.0	9.0	9.0	9.0	9.0	9.0	9.0
Lead/Lag												
Lead-Lag Optimize?												

Lanes, Volumes, Timings  
 4: Ashland Avenue & 79th Street

02/23/2018

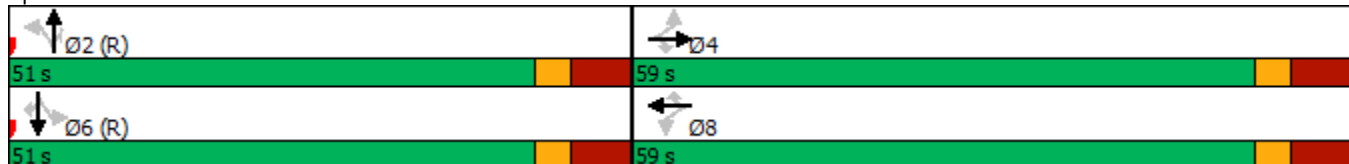


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Walk Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Flash Dont Walk (s)	25.0	25.0	25.0	25.0	25.0	25.0	14.0	14.0	14.0	14.0	14.0	14.0
Pedestrian Calls (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Act Effct Green (s)	50.0	50.0	50.0	50.0	50.0	50.0	42.0	42.0	42.0	42.0	42.0	42.0
Actuated g/C Ratio	0.45	0.45	0.45	0.45	0.45	0.45	0.38	0.38	0.38	0.38	0.38	0.38
v/c Ratio	0.31	0.72	0.05	0.23	0.80	0.12	0.62	0.40	0.18	0.18	0.89	0.33
Control Delay	23.3	33.1	2.6	18.9	33.0	6.4	55.0	26.2	9.8	24.8	44.5	16.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	23.3	33.1	2.6	18.9	33.0	6.4	55.0	26.2	9.8	24.8	44.5	16.3
LOS	C	C	A	B	C	A	E	C	A	C	D	B
Approach Delay	29.7			28.3			28.0			40.8		
Approach LOS	C			C			C			D		
Stops (vph)	48	306	3	33	305	18	51	260	15	33	729	38
Fuel Used(gal)	1	6	0	1	9	1	1	5	0	1	16	1
CO Emissions (g/hr)	71	434	13	75	638	61	91	371	34	47	1107	72
NOx Emissions (g/hr)	14	84	3	15	124	12	18	72	7	9	215	14
VOC Emissions (g/hr)	16	101	3	17	148	14	21	86	8	11	257	17
Dilemma Vehicles (#)	0	0	0	0	0	0	0	0	0	0	0	0
Queue Length 50th (ft)	36	232	0	25	209	5	38	107	6	25	312	26
Queue Length 95th (ft)	76	361	11	51	#475	26	#111	151	35	55	#437	71
Internal Link Dist (ft)	584			1235			585			590		
Turn Bay Length (ft)	80		100	60		30	100		30	100		30
Base Capacity (vph)	261	576	602	295	600	595	110	1018	353	289	1016	323
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.31	0.72	0.05	0.23	0.80	0.12	0.62	0.40	0.18	0.18	0.89	0.33

Intersection Summary

Area Type: Other  
 Cycle Length: 110  
 Actuated Cycle Length: 110  
 Offset: 93 (85%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green  
 Natural Cycle: 90  
 Control Type: Pretimed  
 Maximum v/c Ratio: 0.89  
 Intersection Signal Delay: 33.3  
 Intersection LOS: C  
 Intersection Capacity Utilization 119.9%  
 ICU Level of Service H  
 Analysis Period (min) 15  
 # 95th percentile volume exceeds capacity, queue may be longer.  
 Queue shown is maximum after two cycles.

Splits and Phases: 4: Ashland Avenue & 79th Street



Lanes, Volumes, Timings  
5: Loomis Blvd & 79th Street

02/23/2018



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	25	504	25	25	374	25	25	100	25	25	100	25
Future Volume (vph)	25	504	25	25	374	25	25	100	25	25	100	25
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (ft)	60		30	60		30	0		0	0		0
Storage Lanes	1		1	1		1	0		0	0		0
Taper Length (ft)	25			25			0			0		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.850			0.850		0.978			0.978	
Flt Protected	0.950			0.950				0.992			0.992	
Satd. Flow (prot)	1676	1588	1464	1676	1588	1500	0	1712	0	0	1712	0
Flt Permitted	0.490			0.400				0.941			0.941	
Satd. Flow (perm)	865	1588	1464	706	1588	1500	0	1624	0	0	1624	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			11			15		8			8	
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		1315			357			644			631	
Travel Time (s)		29.9			8.1			14.6			14.3	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Bus Blockages (#/hr)	0	0	6	0	0	0	0	0	0	0	0	0
Parking (#/hr)		0			0						0	
Adj. Flow (vph)	27	548	27	27	407	27	27	109	27	27	109	27
Shared Lane Traffic (%)												
Lane Group Flow (vph)	27	548	27	27	407	27	0	163	0	0	163	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.07	1.22	1.11	1.07	1.22	1.07	1.07	1.07	1.07	1.07	1.07	1.07
Turning Speed (mph)	15		9	15		9	15		9	15		9
Turn Type	Perm	NA	Perm	Perm	NA	Perm	Perm	NA		Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4		4	8		8	2			6		
Minimum Split (s)	18.0	18.0	18.0	18.0	18.0	18.0	19.0	19.0		19.0	19.0	
Total Split (s)	81.0	81.0	81.0	81.0	81.0	81.0	29.0	29.0		29.0	29.0	
Total Split (%)	73.6%	73.6%	73.6%	73.6%	73.6%	73.6%	26.4%	26.4%		26.4%	26.4%	
Maximum Green (s)	77.0	77.0	77.0	77.0	77.0	77.0	25.5	25.5		25.5	25.5	
Yellow Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	2.5	2.5		2.5	2.5	
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0		1.0	1.0	
Lost Time Adjust (s)	0.0	1.0	1.0	0.0	1.0	1.0		1.0			1.0	
Total Lost Time (s)	4.0	5.0	5.0	4.0	5.0	5.0		4.5			4.5	
Lead/Lag												
Lead-Lag Optimize?												
Walk Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0		5.0	5.0	
Flash Dont Walk (s)	9.0	9.0	9.0	9.0	9.0	9.0	10.0	10.0		10.0	10.0	
Pedestrian Calls (#/hr)	0	0	0	0	0	0	0	0		0	0	
Act Effct Green (s)	77.0	76.0	76.0	77.0	76.0	76.0		24.5			24.5	



Lanes, Volumes, Timings  
5: Loomis Blvd & 79th Street

02/23/2018

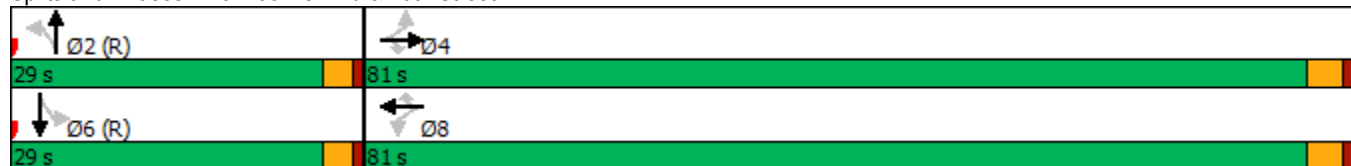


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Actuated g/C Ratio	0.70	0.69	0.69	0.70	0.69	0.69		0.22				0.22
v/c Ratio	0.04	0.50	0.03	0.05	0.37	0.03		0.44				0.44
Control Delay	4.5	6.7	3.2	5.5	8.2	3.4		39.5				39.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0		0.0				0.0
Total Delay	4.5	6.7	3.2	5.5	8.2	3.4		39.5				39.5
LOS	A	A	A	A	A	A		D				D
Approach Delay		6.4			7.8			39.5				39.5
Approach LOS		A			A			D				D
Stops (vph)	6	119	4	9	146	6		121				121
Fuel Used(gal)	0	7	0	0	2	0		3				3
CO Emissions (g/hr)	22	455	21	10	173	8		184				183
NOx Emissions (g/hr)	4	89	4	2	34	2		36				36
VOC Emissions (g/hr)	5	106	5	2	40	2		43				42
Dilemma Vehicles (#)	0	0	0	0	0	0		0				0
Queue Length 50th (ft)	4	87	1	5	107	2		95				95
Queue Length 95th (ft)	m9	158	m7	14	158	11		161				161
Internal Link Dist (ft)		1235			277			564				551
Turn Bay Length (ft)	60		30	60		30						
Base Capacity (vph)	605	1097	1014	494	1097	1041		367				367
Starvation Cap Reductn	0	0	0	0	0	0		0				0
Spillback Cap Reductn	0	0	0	0	0	0		0				0
Storage Cap Reductn	0	0	0	0	0	0		0				0
Reduced v/c Ratio	0.04	0.50	0.03	0.05	0.37	0.03		0.44				0.44

Intersection Summary

Area Type: Other  
 Cycle Length: 110  
 Actuated Cycle Length: 110  
 Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green  
 Natural Cycle: 50  
 Control Type: Pretimed  
 Maximum v/c Ratio: 0.50  
 Intersection Signal Delay: 14.6  
 Intersection LOS: B  
 Intersection Capacity Utilization 48.4%  
 ICU Level of Service A  
 Analysis Period (min) 15  
 m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 5: Loomis Blvd & 79th Street



Lanes, Volumes, Timings  
6: Morgan Street & 79th Street

02/23/2018



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	25	511	25	25	398	25	25	100	25	25	100	25
Future Volume (vph)	25	511	25	25	398	25	25	100	25	25	100	25
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (ft)	100		30	100		30	0		0	0		0
Storage Lanes	1		1	1		1	0		0	0		0
Taper Length (ft)	25			25			0			0		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.850			0.850		0.978			0.978	
Flt Protected	0.950			0.950				0.992			0.992	
Satd. Flow (prot)	1676	1588	1500	1676	1571	1500	0	1712	0	0	1712	0
Flt Permitted	0.462			0.368				0.935			0.935	
Satd. Flow (perm)	815	1588	1500	649	1571	1500	0	1614	0	0	1614	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			18			19		16			16	
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		323			1321			593			659	
Travel Time (s)		7.3			30.0			13.5			15.0	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Parking (#/hr)		0			2							
Adj. Flow (vph)	27	555	27	27	433	27	27	109	27	27	109	27
Shared Lane Traffic (%)												
Lane Group Flow (vph)	27	555	27	27	433	27	0	163	0	0	163	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.07	1.22	1.07	1.07	1.24	1.07	1.07	1.07	1.07	1.07	1.07	1.07
Turning Speed (mph)	15		9	15		9	15		9	15		9
Turn Type	Perm	NA	Perm	Perm	NA	Perm	Perm	NA		Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4		4	8		8	2			6		
Minimum Split (s)	17.0	17.0	17.0	17.0	17.0	17.0	21.0	21.0		21.0	21.0	
Total Split (s)	39.0	39.0	39.0	39.0	39.0	39.0	21.0	21.0		21.0	21.0	
Total Split (%)	65.0%	65.0%	65.0%	65.0%	65.0%	65.0%	35.0%	35.0%		35.0%	35.0%	
Maximum Green (s)	35.0	35.0	35.0	35.0	35.0	35.0	17.0	17.0		17.0	17.0	
Yellow Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0		1.0	1.0	
Lost Time Adjust (s)	1.0	1.0	1.0	1.0	1.0	1.0		1.0			1.0	
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0	5.0		5.0			5.0	
Lead/Lag												
Lead-Lag Optimize?												
Walk Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0		5.0	5.0	
Flash Dont Walk (s)	8.0	8.0	8.0	8.0	8.0	8.0	12.0	12.0		12.0	12.0	
Pedestrian Calls (#/hr)	0	0	0	0	0	0	0	0		0	0	
Act Effct Green (s)	34.0	34.0	34.0	34.0	34.0	34.0		16.0			16.0	
Actuated g/C Ratio	0.57	0.57	0.57	0.57	0.57	0.57		0.27			0.27	

Lanes, Volumes, Timings  
6: Morgan Street & 79th Street

02/23/2018

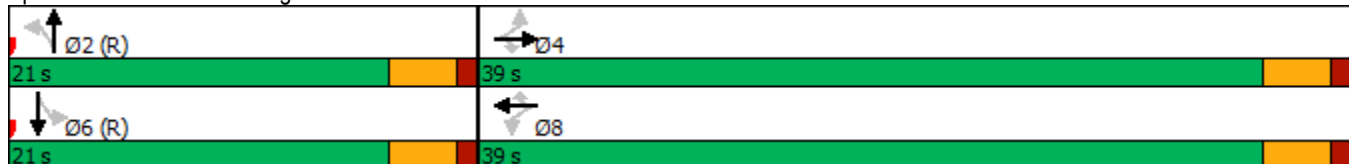


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
v/c Ratio	0.06	0.62	0.03	0.07	0.49	0.03		0.37				0.37
Control Delay	6.3	12.4	3.7	6.6	10.1	3.6		19.0				19.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0		0.0				0.0
Total Delay	6.3	12.4	3.7	6.6	10.1	3.6		19.0				19.0
LOS	A	B	A	A	B	A		B				B
Approach Delay		11.8			9.6			19.0				19.0
Approach LOS		B			A			B				B
Stops (vph)	12	326	7	12	223	7		107				107
Fuel Used(gal)	0	4	0	0	6	0		2				2
CO Emissions (g/hr)	11	306	8	25	430	22		130				136
NOx Emissions (g/hr)	2	60	2	5	84	4		25				26
VOC Emissions (g/hr)	3	71	2	6	100	5		30				31
Dilemma Vehicles (#)	0	0	0	0	0	0		0				0
Queue Length 50th (ft)	4	119	1	4	83	1		43				43
Queue Length 95th (ft)	13	208	10	13	146	9		89				89
Internal Link Dist (ft)		243			1241			513				579
Turn Bay Length (ft)	100		30	100		30						
Base Capacity (vph)	461	899	857	367	890	858		442				442
Starvation Cap Reductn	0	0	0	0	0	0		0				0
Spillback Cap Reductn	0	0	0	0	0	0		0				0
Storage Cap Reductn	0	0	0	0	0	0		0				0
Reduced v/c Ratio	0.06	0.62	0.03	0.07	0.49	0.03		0.37				0.37

Intersection Summary

Area Type: Other  
 Cycle Length: 60  
 Actuated Cycle Length: 60  
 Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green  
 Natural Cycle: 50  
 Control Type: Pretimed  
 Maximum v/c Ratio: 0.62  
 Intersection Signal Delay: 12.7  
 Intersection Capacity Utilization 50.9%  
 Analysis Period (min) 15  
 Intersection LOS: B  
 ICU Level of Service A

Splits and Phases: 6: Morgan Street & 79th Street



Lanes, Volumes, Timings  
7: Halsted Street & 79th Street

02/23/2018

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	53	463	70	74	382	38	78	313	83	73	594	53
Future Volume (vph)	53	463	70	74	382	38	78	313	83	73	594	53
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Width (ft)	9	10	10	9	10	10	10	11	13	10	10	13
Storage Length (ft)	100		100	60		100	100		100	100		100
Storage Lanes	1		1	1		1	1		1	1		1
Taper Length (ft)	100			100			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.850			0.850			0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1539	1375	1389	1539	1356	1386	1596	1689	1520	1550	1585	1506
Flt Permitted	0.393			0.304			0.186			0.482		
Satd. Flow (perm)	637	1375	1389	492	1356	1386	312	1689	1520	786	1585	1506
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			42			40			77			40
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		1321			665			631			665	
Travel Time (s)		30.0			15.1			14.3			15.1	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	0%	10%	2%	0%	9%	3%	0%	3%	4%	3%	6%	5%
Bus Blockages (#/hr)	0	0	2	0	0	0	0	0	0	0	0	0
Parking (#/hr)		0			4							
Adj. Flow (vph)	58	503	76	80	415	41	85	340	90	79	646	58
Shared Lane Traffic (%)												
Lane Group Flow (vph)	58	503	76	80	415	41	85	340	90	79	646	58
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			10			10	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.22	1.33	1.18	1.22	1.37	1.17	1.17	1.12	1.03	1.17	1.17	1.03
Turning Speed (mph)	15		9	15		9	15		9	15		9
Turn Type	Perm	NA	Perm	Perm	NA	Perm	Perm	NA	Perm	Perm	NA	Perm
Protected Phases		4			8			2			6	
Permitted Phases	4		4	8		8	2		2	6		6
Minimum Split (s)	30.0	30.0	30.0	30.0	30.0	30.0	27.0	27.0	27.0	27.0	27.0	27.0
Total Split (s)	54.0	54.0	54.0	54.0	54.0	54.0	56.0	56.0	56.0	56.0	56.0	56.0
Total Split (%)	49.1%	49.1%	49.1%	49.1%	49.1%	49.1%	50.9%	50.9%	50.9%	50.9%	50.9%	50.9%
Maximum Green (s)	47.0	47.0	47.0	47.0	47.0	47.0	49.0	49.0	49.0	49.0	49.0	49.0
Yellow Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
All-Red Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lost Time Adjust (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Total Lost Time (s)	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0
Lead/Lag												
Lead-Lag Optimize?												
Walk Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Flash Dont Walk (s)	18.0	18.0	18.0	18.0	18.0	18.0	15.0	15.0	15.0	15.0	15.0	15.0

# Lanes, Volumes, Timings

## 7: Halsted Street & 79th Street

02/23/2018



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Pedestrian Calls (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Act Effct Green (s)	46.0	46.0	46.0	46.0	46.0	46.0	48.0	48.0	48.0	48.0	48.0	48.0
Actuated g/C Ratio	0.42	0.42	0.42	0.42	0.42	0.42	0.44	0.44	0.44	0.44	0.44	0.44
v/c Ratio	0.22	0.87	0.13	0.39	0.73	0.07	0.62	0.46	0.13	0.23	0.93	0.09
Control Delay	23.3	47.5	10.8	29.4	36.0	6.5	47.7	24.4	5.9	21.8	52.2	8.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	23.3	47.5	10.8	29.4	36.0	6.5	47.7	24.4	5.9	21.8	52.2	8.6
LOS	C	D	B	C	D	A	D	C	A	C	D	A
Approach Delay		40.9			32.8			25.1			45.9	
Approach LOS		D			C			C			D	
Stops (vph)	33	396	22	54	318	7	62	215	15	45	508	14
Fuel Used(gal)	1	11	1	1	7	0	1	4	1	1	12	0
CO Emissions (g/hr)	69	799	70	79	457	20	104	300	41	66	853	31
NOx Emissions (g/hr)	13	155	14	15	89	4	20	58	8	13	166	6
VOC Emissions (g/hr)	16	185	16	18	106	5	24	69	10	15	198	7
Dilemma Vehicles (#)	0	0	0	0	0	0	0	0	0	0	0	0
Queue Length 50th (ft)	26	319	14	38	241	0	46	166	5	34	424	7
Queue Length 95th (ft)	58	#524	44	85	368	21	#128	248	35	70	#665	32
Internal Link Dist (ft)		1241			585			551			585	
Turn Bay Length (ft)	100		100	60		100	100		100	100		100
Base Capacity (vph)	266	575	605	205	567	602	136	737	706	342	691	679
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.22	0.87	0.13	0.39	0.73	0.07	0.63	0.46	0.13	0.23	0.93	0.09

### Intersection Summary

Area Type: Other

Cycle Length: 110

Actuated Cycle Length: 110

Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green

Natural Cycle: 90

Control Type: Pretimed

Maximum v/c Ratio: 0.93

Intersection Signal Delay: 37.4

Intersection LOS: D

Intersection Capacity Utilization 121.2%

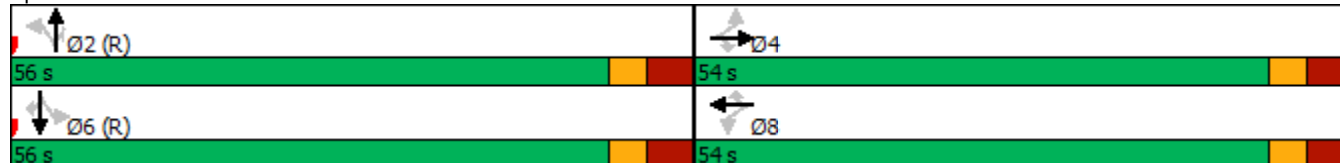
ICU Level of Service H

Analysis Period (min) 15

# 95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

### Splits and Phases: 7: Halsted Street & 79th Street



Lanes, Volumes, Timings  
8: 79th Street & 150 W.

02/23/2018



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Volume (vph)	10	733	10	10	424	10	10	10	10	10	10	10
Future Volume (vph)	10	733	10	10	424	10	10	10	10	10	10	10
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Fr't		0.998			0.997			0.955			0.955	
Flt Protected		0.999			0.999			0.984			0.984	
Satd. Flow (prot)	0	1583	0	0	1582	0	0	1658	0	0	1658	0
Flt Permitted		0.993			0.982			0.925			0.925	
Satd. Flow (perm)	0	1574	0	0	1555	0	0	1559	0	0	1559	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		2			3			11			11	
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		558			495			173			227	
Travel Time (s)		12.7			11.3			3.9			5.2	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Parking (#/hr)		0			0			0			0	
Adj. Flow (vph)	11	797	11	11	461	11	11	11	11	11	11	11
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	819	0	0	483	0	0	33	0	0	33	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			0			0	
Link Offset(ft)		0			0			0			-30	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.07	1.22	1.07	1.07	1.22	1.07	1.07	1.07	1.07	1.07	1.07	1.07
Turning Speed (mph)	15		9	15		9	15		9	15		9
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Minimum Split (s)	9.0	9.0		9.0	9.0		21.0	21.0		21.0	21.0	
Total Split (s)	79.0	79.0		79.0	79.0		21.0	21.0		21.0	21.0	
Total Split (%)	79.0%	79.0%		79.0%	79.0%		21.0%	21.0%		21.0%	21.0%	
Maximum Green (s)	75.0	75.0		75.0	75.0		17.0	17.0		17.0	17.0	
Yellow Time (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
All-Red Time (s)	1.0	1.0		1.0	1.0		1.0	1.0		1.0	1.0	
Lost Time Adjust (s)		1.0			1.0			1.0			1.0	
Total Lost Time (s)		5.0			5.0			5.0			5.0	
Lead/Lag												
Lead-Lag Optimize?												
Walk Time (s)							5.0	5.0		5.0	5.0	
Flash Dont Walk (s)							12.0	12.0		12.0	12.0	
Pedestrian Calls (#/hr)							0	0		0	0	
Act Effct Green (s)		74.0			74.0			16.0			16.0	
Actuated g/C Ratio		0.74			0.74			0.16			0.16	
v/c Ratio		0.70			0.42			0.13			0.13	
Control Delay		11.2			6.3			28.3			28.3	
Queue Delay		0.0			0.0			0.0			0.0	

Lanes, Volumes, Timings  
8: 79th Street & 150 W.

02/23/2018



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Total Delay		11.2			6.3			28.3			28.3	
LOS		B			A			C			C	
Approach Delay		11.2			6.3			28.3			28.3	
Approach LOS		B			A			C			C	
Stops (vph)		393			197			21			21	
Fuel Used(gal)		7			5			0			0	
CO Emissions (g/hr)		500			315			23			24	
NOx Emissions (g/hr)		97			61			4			5	
VOC Emissions (g/hr)		116			73			5			6	
Dilemma Vehicles (#)		0			0			0			0	
Queue Length 50th (ft)		237			166			12			12	
Queue Length 95th (ft)		371			132			40			40	
Internal Link Dist (ft)		478			415			93			147	
Turn Bay Length (ft)												
Base Capacity (vph)		1165			1151			258			258	
Starvation Cap Reductn		0			0			0			0	
Spillback Cap Reductn		0			0			0			0	
Storage Cap Reductn		0			0			0			0	
Reduced v/c Ratio		0.70			0.42			0.13			0.13	

Intersection Summary

Area Type:	Other
Cycle Length:	100
Actuated Cycle Length:	100
Offset:	3 (3%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
Natural Cycle:	60
Control Type:	Pretimed
Maximum v/c Ratio:	0.70
Intersection Signal Delay:	10.3
Intersection LOS:	B
Intersection Capacity Utilization:	68.9%
ICU Level of Service:	C
Analysis Period (min):	15

Splits and Phases: 8: 79th Street & 150 W.



Lanes, Volumes, Timings  
9: Lafayette Avenue & 79th Street

02/23/2018

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑↑	↗	↖	↑↑	↗				↖	↑↑↑	↗
Traffic Volume (vph)	0	577	193	239	439	0	0	0	0	165	1110	77
Future Volume (vph)	0	577	193	239	439	0	0	0	0	165	1110	77
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Width (ft)	10	10	12	12	10	11	12	12	12	12	10	8
Storage Length (ft)	75		150	0		0	0		0	0		0
Storage Lanes	2		1	1		1	0		0	1		1
Taper Length (ft)	100			0			0			0		
Lane Util. Factor	1.00	0.91	1.00	1.00	0.95	1.00	1.00	1.00	1.00	0.86	0.86	1.00
Ped Bike Factor			0.69	0.90								0.97
Frt			0.850									0.850
Flt Protected				0.950						0.950	0.999	
Satd. Flow (prot)	0	4208	1286	1660	2682	870	0	0	0	1337	4083	1087
Flt Permitted				0.321						0.950	0.999	
Satd. Flow (perm)	0	4208	886	504	2682	870	0	0	0	1337	4083	1051
Right Turn on Red			Yes			No			Yes			Yes
Satd. Flow (RTOR)			151									125
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		330			322			703			664	
Travel Time (s)		7.5			7.3			16.0			15.1	
Confl. Peds. (#/hr)	5		130	130		5	20					20
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	2%	9%	19%	3%	8%	100%	2%	2%	2%	10%	6%	22%
Parking (#/hr)					17							
Adj. Flow (vph)	0	627	210	260	477	0	0	0	0	179	1207	84
Shared Lane Traffic (%)										10%		
Lane Group Flow (vph)	0	627	210	260	477	0	0	0	0	161	1225	84
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	L NA	Left	L NA	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.17	1.17	1.07	1.07	1.32	1.12	1.07	1.07	1.07	1.07	1.17	1.28
Turning Speed (mph)	15		9	15		9	15		9	15		9
Turn Type		NA	Perm	pm+pt	NA	custom				Perm	NA	Perm
Protected Phases		4 9		3	8	9					6	
Permitted Phases			4 9	8		8				6		6
Minimum Split (s)				8.0	26.0	8.0				36.0	36.0	36.0
Total Split (s)				17.0	46.0	8.0				46.0	46.0	46.0
Total Split (%)				17.0%	46.0%	8.0%				46.0%	46.0%	46.0%
Maximum Green (s)				14.0	38.0	4.5				38.0	38.0	38.0
Yellow Time (s)				3.0	3.0	3.5				3.0	3.0	3.0
All-Red Time (s)				0.0	5.0	0.0				5.0	5.0	5.0
Lost Time Adjust (s)				1.0	1.0	1.0				1.0	1.0	1.0
Total Lost Time (s)				4.0	9.0	4.5				9.0	9.0	9.0
Lead/Lag				Lead								
Lead-Lag Optimize?												
Walk Time (s)					5.0					5.0	5.0	5.0



Lane Group	Ø4
Lane Configurations	
Traffic Volume (vph)	
Future Volume (vph)	
Ideal Flow (vphpl)	
Lane Width (ft)	
Storage Length (ft)	
Storage Lanes	
Taper Length (ft)	
Lane Util. Factor	
Ped Bike Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Right Turn on Red	
Satd. Flow (RTOR)	
Link Speed (mph)	
Link Distance (ft)	
Travel Time (s)	
Confl. Peds. (#/hr)	
Peak Hour Factor	
Heavy Vehicles (%)	
Parking (#/hr)	
Adj. Flow (vph)	
Shared Lane Traffic (%)	
Lane Group Flow (vph)	
Enter Blocked Intersection	
Lane Alignment	
Median Width(ft)	
Link Offset(ft)	
Crosswalk Width(ft)	
Two way Left Turn Lane	
Headway Factor	
Turning Speed (mph)	
Turn Type	
Protected Phases	4
Permitted Phases	
Minimum Split (s)	20.0
Total Split (s)	29.0
Total Split (%)	29%
Maximum Green (s)	21.0
Yellow Time (s)	3.0
All-Red Time (s)	5.0
Lost Time Adjust (s)	
Total Lost Time (s)	
Lead/Lag	Lag
Lead-Lag Optimize?	
Walk Time (s)	5.0

Lanes, Volumes, Timings  
 9: Lafayette Avenue & 79th Street

02/23/2018

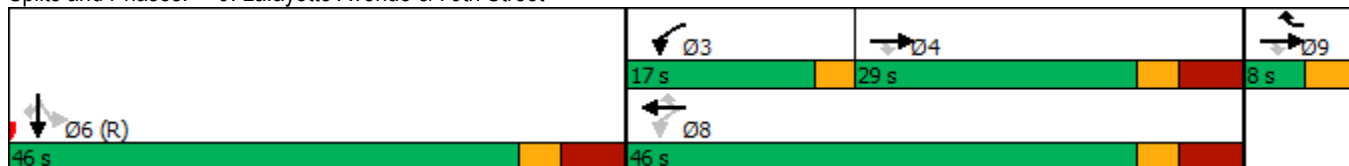


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Flash Dont Walk (s)					13.0					23.0	23.0	23.0
Pedestrian Calls (#/hr)					0					0	0	0
Act Effct Green (s)		20.0	20.0	42.0	37.0					37.0	37.0	37.0
Actuated g/C Ratio		0.20	0.20	0.42	0.37					0.37	0.37	0.37
v/c Ratio		0.75	0.70	0.72	0.48					0.33	0.81	0.18
Control Delay		36.6	19.4	31.6	22.7					24.9	33.6	2.3
Queue Delay		0.0	0.0	0.0	0.4					0.1	0.5	0.0
Total Delay		36.6	19.4	31.6	23.2					25.0	34.1	2.3
LOS		D	B	C	C					C	C	A
Approach Delay		32.3			26.2						31.3	
Approach LOS		C			C						C	
Stops (vph)		523	104	131	308					104	983	4
Fuel Used(gal)		11	3	3	5					2	19	0
CO Emissions (g/hr)		762	180	200	338					146	1326	32
NOx Emissions (g/hr)		148	35	39	66					28	258	6
VOC Emissions (g/hr)		177	42	46	78					34	307	7
Dilemma Vehicles (#)		0	0	0	0					0	0	0
Queue Length 50th (ft)		137	33	88	90					84	268	0
Queue Length 95th (ft)		170	m#91	#128	117					146	331	13
Internal Link Dist (ft)		250			242			623			584	
Turn Bay Length (ft)			150									
Base Capacity (vph)		841	298	361	992					494	1510	467
Starvation Cap Reductn		0	0	0	181					0	0	0
Spillback Cap Reductn		0	0	0	0					21	66	0
Storage Cap Reductn		0	0	0	0					0	0	0
Reduced v/c Ratio		0.75	0.70	0.72	0.59					0.34	0.85	0.18

Intersection Summary

Area Type: Other  
 Cycle Length: 100  
 Actuated Cycle Length: 100  
 Offset: 0 (0%), Referenced to phase 6:SBTL, Start of Green  
 Natural Cycle: 75  
 Control Type: Pretimed  
 Maximum v/c Ratio: 0.81  
 Intersection Signal Delay: 30.3      Intersection LOS: C  
 Intersection Capacity Utilization 75.0%      ICU Level of Service D  
 Analysis Period (min) 15  
 # 95th percentile volume exceeds capacity, queue may be longer.  
 Queue shown is maximum after two cycles.  
 m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 9: Lafayette Avenue & 79th Street



Lane Group	Ø4
Flash Dont Walk (s)	7.0
Pedestrian Calls (#/hr)	0
Act Effct Green (s)	
Actuated g/C Ratio	
v/c Ratio	
Control Delay	
Queue Delay	
Total Delay	
LOS	
Approach Delay	
Approach LOS	
Stops (vph)	
Fuel Used(gal)	
CO Emissions (g/hr)	
NOx Emissions (g/hr)	
VOC Emissions (g/hr)	
Dilemma Vehicles (#)	
Queue Length 50th (ft)	
Queue Length 95th (ft)	
Internal Link Dist (ft)	
Turn Bay Length (ft)	
Base Capacity (vph)	
Starvation Cap Reductn	
Spillback Cap Reductn	
Storage Cap Reductn	
Reduced v/c Ratio	
Intersection Summary	

# Lanes, Volumes, Timings

## 10: State Street & 79th Street

02/23/2018

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	330	412	0	0	386	152	292	212	214	0	0	0
Future Volume (vph)	330	412	0	0	386	152	292	212	214	0	0	0
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Width (ft)	10	10	11	10	10	11	12	11	16	12	12	12
Storage Length (ft)	0		0	200		115	0		0	0		0
Storage Lanes	2		1	1		1	1		1	0		0
Taper Length (ft)	0			50			0			0		
Lane Util. Factor	0.97	1.00	1.00	1.00	0.91	1.00	0.91	0.91	1.00	1.00	1.00	1.00
Ped Bike Factor	0.86					0.82	0.99	1.00	0.84			
Fr						0.850			0.850			
Flt Protected	0.950						0.950	0.981				
Satd. Flow (prot)	3036	1260	870	0	4496	1450	1526	3046	1700	0	0	0
Flt Permitted	0.451						0.950	0.981				
Satd. Flow (perm)	1242	1260	870	0	4496	1183	1513	3035	1421	0	0	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)						121			112			
Link Speed (mph)		30			30			30				30
Link Distance (ft)		322			463			683				659
Travel Time (s)		7.3			10.5			15.5				15.0
Confl. Peds. (#/hr)	82		240	240		82	8		145	145		8
Peak Hour Factor	0.89	0.90	0.92	0.92	0.90	0.78	0.91	0.95	0.78	0.92	0.92	0.92
Heavy Vehicles (%)	2%	2%	100%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Parking (#/hr)		27										
Adj. Flow (vph)	371	458	0	0	429	195	321	223	274	0	0	0
Shared Lane Traffic (%)							45%					
Lane Group Flow (vph)	371	458	0	0	429	195	177	367	274	0	0	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	L NA	Right	Left	L NA	Right	L NA	L NA	Right	Left	Left	Right
Median Width(ft)		20			20			12				12
Link Offset(ft)		0			0			0				0
Crosswalk Width(ft)		16			16			16				16
Two way Left Turn Lane												
Headway Factor	1.17	1.62	1.12	1.17	1.17	1.12	1.07	1.12	0.91	1.07	1.07	1.07
Turning Speed (mph)	15		9	15		9	15		9	15		9
Turn Type	pm+pt	NA	Perm		NA	Perm	Perm	NA	Perm			
Protected Phases	7	4			8			2				
Permitted Phases	4		4			8	2		2			
Minimum Split (s)	8.0	26.0	26.0		22.0	22.0	36.0	36.0	36.0			
Total Split (s)	11.0	63.0	63.0		52.0	52.0	37.0	37.0	37.0			
Total Split (%)	11.0%	63.0%	63.0%		52.0%	52.0%	37.0%	37.0%	37.0%			
Maximum Green (s)	8.0	55.0	55.0		44.0	44.0	29.0	29.0	29.0			
Yellow Time (s)	3.0	3.0	3.0		3.0	3.0	3.0	3.0	3.0			
All-Red Time (s)	0.0	5.0	5.0		5.0	5.0	5.0	5.0	5.0			
Lost Time Adjust (s)	1.0	1.0	1.0		1.0	1.0	1.0	1.0	1.0			
Total Lost Time (s)	4.0	9.0	9.0		9.0	9.0	9.0	9.0	9.0			
Lead/Lag	Lead				Lag	Lag						
Lead-Lag Optimize?												
Walk Time (s)		5.0	5.0		5.0	5.0	5.0	5.0	5.0			

Lanes, Volumes, Timings  
 10: State Street & 79th Street

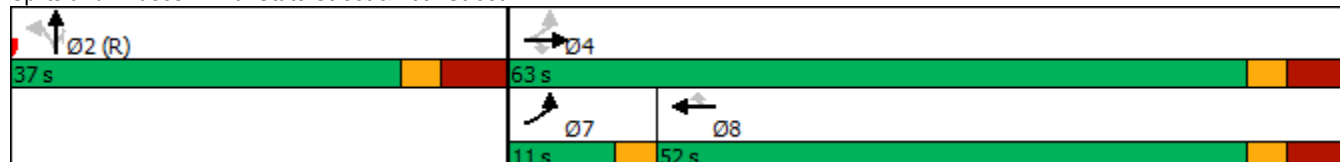
02/23/2018

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Flash Dont Walk (s)		13.0	13.0		9.0	9.0	23.0	23.0	23.0			
Pedestrian Calls (#/hr)		0	0		0	0	0	0	0			
Act Effct Green (s)	59.0	54.0			43.0	43.0	28.0	28.0	28.0			
Actuated g/C Ratio	0.59	0.54			0.43	0.43	0.28	0.28	0.28			
v/c Ratio	0.43	0.67			0.22	0.34	0.42	0.43	0.57			
Control Delay	11.2	26.4			18.3	9.3	33.0	31.4	23.2			
Queue Delay	0.0	1.9			0.0	0.0	0.0	0.0	0.0			
Total Delay	11.2	28.2			18.3	9.3	33.0	31.4	23.2			
LOS	B	C			B	A	C	C	C			
Approach Delay		20.6			15.5			29.0				
Approach LOS		C			B			C				
Stops (vph)	165	334			232	41	128	273	112			
Fuel Used(gal)	2	5			7	2	3	6	3			
CO Emissions (g/hr)	174	356			471	146	185	387	194			
NOx Emissions (g/hr)	34	69			92	28	36	75	38			
VOC Emissions (g/hr)	40	83			109	34	43	90	45			
Dilemma Vehicles (#)	0	0			0	0	0	0	0			
Queue Length 50th (ft)	26	135			61	28	101	105	86			
Queue Length 95th (ft)	m59	m236			84	57	171	151	132			
Internal Link Dist (ft)		242			383			603			579	
Turn Bay Length (ft)						115						
Base Capacity (vph)	858	680			1933	577	423	849	478			
Starvation Cap Reductn	0	103			0	0	0	0	0			
Spillback Cap Reductn	0	0			7	0	0	0	0			
Storage Cap Reductn	0	0			0	0	0	0	0			
Reduced v/c Ratio	0.43	0.79			0.22	0.34	0.42	0.43	0.57			

Intersection Summary

Area Type: Other  
 Cycle Length: 100  
 Actuated Cycle Length: 100  
 Offset: 0 (0%), Referenced to phase 2:NBTL, Start of Green  
 Natural Cycle: 75  
 Control Type: Pretimed  
 Maximum v/c Ratio: 0.67  
 Intersection Signal Delay: 22.2      Intersection LOS: C  
 Intersection Capacity Utilization 66.9%      ICU Level of Service C  
 Analysis Period (min) 15  
 m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 10: State Street & 79th Street



Lanes, Volumes, Timings  
 11: Indiana Avenue & 79th Street

02/23/2018

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	394	88	25	388	0	0	0	0	25	25	69
Future Volume (vph)	0	394	88	25	388	0	0	0	0	25	25	69
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (ft)	0		30	0		0	0		0	0		0
Storage Lanes	0		1	0		0	0		0	0		0
Taper Length (ft)	0			0			0			0		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.850									0.922
Flt Protected					0.997							0.990
Satd. Flow (prot)	0	1588	1488	0	1583	0	0	0	0	0	1611	0
Flt Permitted					0.964							0.990
Satd. Flow (perm)	0	1588	1488	0	1531	0	0	0	0	0	1611	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			68									75
Link Speed (mph)		30			30			30				30
Link Distance (ft)		869			1306			672				662
Travel Time (s)		19.8			29.7			15.3				15.0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Bus Blockages (#/hr)	0	0	2	0	0	0	0	0	0	0	0	0
Parking (#/hr)		0			0							
Adj. Flow (vph)	0	428	96	27	422	0	0	0	0	27	27	75
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	428	96	0	449	0	0	0	0	0	129	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		10			10			0				0
Link Offset(ft)		0			0			0				0
Crosswalk Width(ft)		16			16			16				16
Two way Left Turn Lane												
Headway Factor	1.07	1.22	1.08	1.07	1.22	1.07	1.07	1.07	1.07	1.07	1.07	1.07
Turning Speed (mph)	15		9	15		9	15		9	15		9
Turn Type		NA	Perm	Perm	NA					Perm		NA
Protected Phases		4			8							6
Permitted Phases			4	8						6		
Minimum Split (s)		18.0	18.0	18.0	18.0					19.0	19.0	
Total Split (s)		50.0	50.0	50.0	50.0					20.0	20.0	
Total Split (%)		71.4%	71.4%	71.4%	71.4%					28.6%	28.6%	
Maximum Green (s)		45.0	45.0	45.0	45.0					16.0	16.0	
Yellow Time (s)		3.0	3.0	3.0	3.0					3.0	3.0	
All-Red Time (s)		2.0	2.0	2.0	2.0					1.0	1.0	
Lost Time Adjust (s)		1.0	1.0		1.0							1.0
Total Lost Time (s)		6.0	6.0		6.0							5.0
Lead/Lag												
Lead-Lag Optimize?												
Walk Time (s)		5.0	5.0	5.0	5.0					5.0	5.0	
Flash Dont Walk (s)		8.0	8.0	8.0	8.0					10.0	10.0	
Pedestrian Calls (#/hr)		0	0	0	0					0	0	
Act Efect Green (s)		44.0	44.0		44.0							15.0

Lanes, Volumes, Timings  
 11: Indiana Avenue & 79th Street

02/23/2018

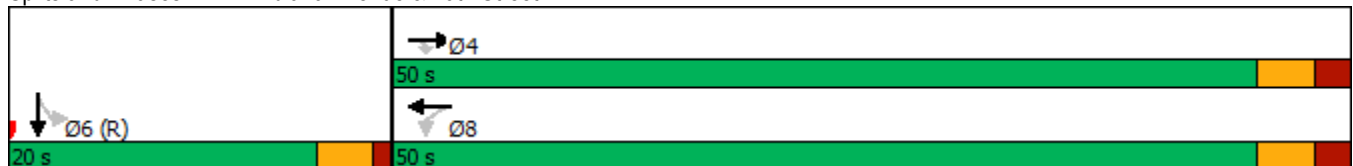


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Actuated g/C Ratio		0.63	0.63		0.63							0.21
v/c Ratio		0.43	0.10		0.47							0.32
Control Delay		8.3	2.5		2.7							13.7
Queue Delay		0.0	0.0		0.0							0.0
Total Delay		8.3	2.5		2.7							13.7
LOS		A	A		A							B
Approach Delay		7.2			2.7							13.7
Approach LOS		A			A							B
Stops (vph)		187	15		38							49
Fuel Used(gal)		6	1		5							1
CO Emissions (g/hr)		405	73		325							85
NOx Emissions (g/hr)		79	14		63							17
VOC Emissions (g/hr)		94	17		75							20
Dilemma Vehicles (#)		0	0		0							0
Queue Length 50th (ft)		81	4		17							19
Queue Length 95th (ft)		136	19		m33							61
Internal Link Dist (ft)		789			1226			592				582
Turn Bay Length (ft)			30									
Base Capacity (vph)		998	960		962							404
Starvation Cap Reductn		0	0		0							0
Spillback Cap Reductn		0	0		0							0
Storage Cap Reductn		0	0		0							0
Reduced v/c Ratio		0.43	0.10		0.47							0.32

Intersection Summary

























Area Type: Other  
 Cycle Length: 70  
 Actuated Cycle Length: 70  
 Offset: 51 (73%), Referenced to phase 6:SBTL, Start of Green  
 Natural Cycle: 45  
 Control Type: Pretimed  
 Maximum v/c Ratio: 0.47  
 Intersection Signal Delay: 6.1  
 Intersection LOS: A  
 Intersection Capacity Utilization 64.9%  
 ICU Level of Service C  
 Analysis Period (min) 15  
 m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 11: Indiana Avenue & 79th Street



Lanes, Volumes, Timings  
 12: King Dr & 79th Street

02/23/2018

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	29	337	48	56	404	41	59	282	52	58	525	18
Future Volume (vph)	29	337	48	56	404	41	59	282	52	58	525	18
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Width (ft)	10	10	11	10	10	11	10	10	10	10	10	10
Storage Length (ft)	80		100	60		100	60		30	50		50
Storage Lanes	1		1	1		1	1		1	1		1
Taper Length (ft)	100			75			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	0.94		0.85	0.93		0.86	0.98		0.88	0.94		0.92
Frt			0.850			0.850			0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1565	1425	1450	1565	1416	1450	1565	1647	1400	1565	1647	1400
Flt Permitted	0.391			0.467			0.232			0.506		
Satd. Flow (perm)	608	1425	1236	715	1416	1248	375	1647	1230	782	1647	1286
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			52			45			36			31
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		1306			1324			671			675	
Travel Time (s)		29.7			30.1			15.3			15.3	
Confl. Peds. (#/hr)	73		78	78		73	36		59	59		36
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Parking (#/hr)		7			8							
Adj. Flow (vph)	32	366	52	61	439	45	64	307	57	63	571	20
Shared Lane Traffic (%)												
Lane Group Flow (vph)	32	366	52	61	439	45	64	307	57	63	571	20
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		10			10			10			10	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.17	1.40	1.12	1.17	1.41	1.12	1.17	1.17	1.17	1.17	1.17	1.17
Turning Speed (mph)	15		9	15		9	15		9	15		9
Turn Type	Perm	NA	Perm	Perm	NA	Perm	Perm	NA	Perm	Perm	NA	Perm
Protected Phases		4			8			2			6	
Permitted Phases	4		4	8		8	2		2	6		6
Minimum Split (s)	26.0	26.0	26.0	26.0	26.0	26.0	24.0	24.0	24.0	24.0	24.0	24.0
Total Split (s)	36.0	36.0	36.0	36.0	36.0	36.0	34.0	34.0	34.0	34.0	34.0	34.0
Total Split (%)	51.4%	51.4%	51.4%	51.4%	51.4%	51.4%	48.6%	48.6%	48.6%	48.6%	48.6%	48.6%
Maximum Green (s)	31.0	31.0	31.0	31.0	31.0	31.0	30.0	30.0	30.0	30.0	30.0	30.0
Yellow Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Total Lost Time (s)	6.0	6.0	6.0	6.0	6.0	6.0	5.0	5.0	5.0	5.0	5.0	5.0
Lead/Lag												
Lead-Lag Optimize?												
Walk Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Flash Dont Walk (s)	16.0	16.0	16.0	16.0	16.0	16.0	15.0	15.0	15.0	15.0	15.0	15.0





Lanes, Volumes, Timings  
 13: St Lawrence Avenue & 79th Street

02/23/2018



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↑	↗		↕				
Traffic Volume (vph)	25	386	0	0	363	25	25	100	25	0	0	0
Future Volume (vph)	25	386	0	0	363	25	25	100	25	0	0	0
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (ft)	0		30	0		30	0		0	0		0
Storage Lanes	0		0	0		1	0		0	0		0
Taper Length (ft)	0			0			0			0		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt						0.850		0.978				
Flt Protected		0.997						0.992				
Satd. Flow (prot)	0	1583	0	0	1588	1500	0	1712	0	0	0	0
Flt Permitted		0.968						0.992				
Satd. Flow (perm)	0	1537	0	0	1588	1500	0	1712	0	0	0	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)						24		13				
Link Speed (mph)		30			30			30				30
Link Distance (ft)		1324			660			692				656
Travel Time (s)		30.1			15.0			15.7				14.9
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Parking (#/hr)		0			0							
Adj. Flow (vph)	27	420	0	0	395	27	27	109	27	0	0	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	447	0	0	395	27	0	163	0	0	0	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		10			10			0				0
Link Offset(ft)		0			0			0				0
Crosswalk Width(ft)		16			16			16				16
Two way Left Turn Lane												
Headway Factor	1.07	1.22	1.07	1.07	1.22	1.07	1.07	1.07	1.07	1.07	1.07	1.07
Turning Speed (mph)	15		9	15		9	15		9	15		9
Turn Type	Perm	NA			NA	Perm	Perm	NA				
Protected Phases		4			8			2				
Permitted Phases	4					8	2					
Minimum Split (s)	16.0	16.0			16.0	16.0	17.0	17.0				
Total Split (s)	52.0	52.0			52.0	52.0	18.0	18.0				
Total Split (%)	74.3%	74.3%			74.3%	74.3%	25.7%	25.7%				
Maximum Green (s)	48.0	48.0			48.0	48.0	14.0	14.0				
Yellow Time (s)	3.0	3.0			3.0	3.0	3.0	3.0				
All-Red Time (s)	1.0	1.0			1.0	1.0	1.0	1.0				
Lost Time Adjust (s)		1.0			1.0	1.0		1.0				
Total Lost Time (s)		5.0			5.0	5.0		5.0				
Lead/Lag												
Lead-Lag Optimize?												
Walk Time (s)	5.0	5.0			5.0	5.0	5.0	5.0				
Flash Dont Walk (s)	7.0	7.0			7.0	7.0	8.0	8.0				
Pedestrian Calls (#/hr)	0	0			0	0	0	0				
Act Effct Green (s)		47.0			47.0	47.0		13.0				
Actuated g/C Ratio		0.67			0.67	0.67		0.19				

Lanes, Volumes, Timings  
 13: St Lawrence Avenue & 79th Street

02/23/2018

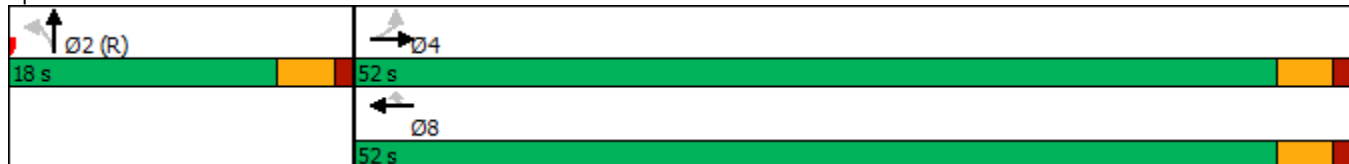


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
v/c Ratio		0.43			0.37	0.03		0.50				
Control Delay		2.2			6.2	2.0		29.4				
Queue Delay		0.0			0.0	0.0		0.0				
Total Delay		2.2			6.2	2.0		29.4				
LOS		A			A	A		C				
Approach Delay		2.2			6.0			29.4				
Approach LOS		A			A			C				
Stops (vph)		31			144	4		122				
Fuel Used(gal)		5			3	0		2				
CO Emissions (g/hr)		322			218	11		167				
NOx Emissions (g/hr)		63			42	2		32				
VOC Emissions (g/hr)		75			51	3		39				
Dilemma Vehicles (#)		0			0	0		0				
Queue Length 50th (ft)		14			62	0		58				
Queue Length 95th (ft)		23			104	7		114				
Internal Link Dist (ft)		1244			580			612			576	
Turn Bay Length (ft)						30						
Base Capacity (vph)		1031			1066	1015		328				
Starvation Cap Reductn		0			0	0		0				
Spillback Cap Reductn		0			0	0		0				
Storage Cap Reductn		0			0	0		0				
Reduced v/c Ratio		0.43			0.37	0.03		0.50				

Intersection Summary

Area Type: Other  
 Cycle Length: 70  
 Actuated Cycle Length: 70  
 Offset: 53 (76%), Referenced to phase 2:NBT, Start of Green  
 Natural Cycle: 40  
 Control Type: Pretimed  
 Maximum v/c Ratio: 0.50  
 Intersection Signal Delay: 8.1  
 Intersection Capacity Utilization 62.2%  
 Analysis Period (min) 15  
 Intersection LOS: A  
 ICU Level of Service B

Splits and Phases: 13: St Lawrence Avenue & 79th Street



Lanes, Volumes, Timings  
 14: Kenwood Avenue & 79th Street

02/23/2018



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	165	25	25	210	0	0	0	0	25	100	25
Future Volume (vph)	0	165	25	25	210	0	0	0	0	25	100	25
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Fr <sub>t</sub>	0.982										0.978	
Fl <sub>t</sub> Protected					0.995						0.992	
Satd. Flow (prot)	0	1560	0	0	1756	0	0	0	0	0	1712	0
Fl <sub>t</sub> Permitted					0.960						0.992	
Satd. Flow (perm)	0	1560	0	0	1694	0	0	0	0	0	1712	0
Right Turn on Red			Yes				Yes				Yes	
Satd. Flow (RTOR)	25										26	
Link Speed (mph)	30				30				30		30	
Link Distance (ft)	351				1665				668		659	
Travel Time (s)	8.0				37.8				15.2		15.0	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Parking (#/hr)	0											
Adj. Flow (vph)	0	179	27	27	228	0	0	0	0	27	109	27
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	206	0	0	255	0	0	0	0	0	163	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)	9				9				0		0	
Link Offset(ft)	0				0				0		0	
Crosswalk Width(ft)	16				16				16		16	
Two way Left Turn Lane												
Headway Factor	1.07	1.22	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07
Turning Speed (mph)	15		9	15		9	15		9	15		9
Turn Type	NA		Perm		NA						Perm	
Protected Phases	4				8						6	
Permitted Phases			8								6	
Minimum Split (s)	16.0		16.0		16.0						17.0	
Total Split (s)	23.0		23.0		23.0						17.0	
Total Split (%)	57.5%		57.5%		57.5%						42.5%	
Maximum Green (s)	19.0		19.0		19.0						13.0	
Yellow Time (s)	3.0		3.0		3.0						3.0	
All-Red Time (s)	1.0		1.0		1.0						1.0	
Lost Time Adjust (s)	1.0				1.0						1.0	
Total Lost Time (s)	5.0				5.0						5.0	
Lead/Lag												
Lead-Lag Optimize?												
Walk Time (s)	5.0		5.0		5.0						5.0	
Flash Dont Walk (s)	7.0		7.0		7.0						8.0	
Pedestrian Calls (#/hr)	0		0		0						0	
Act Effct Green (s)	18.0				18.0						12.0	
Actuated g/C Ratio	0.45				0.45						0.30	
v/c Ratio	0.29				0.33						0.31	
Control Delay	7.4				8.7						11.2	
Queue Delay	0.0				0.0						0.0	

Lanes, Volumes, Timings  
 14: Kenwood Avenue & 79th Street

02/23/2018

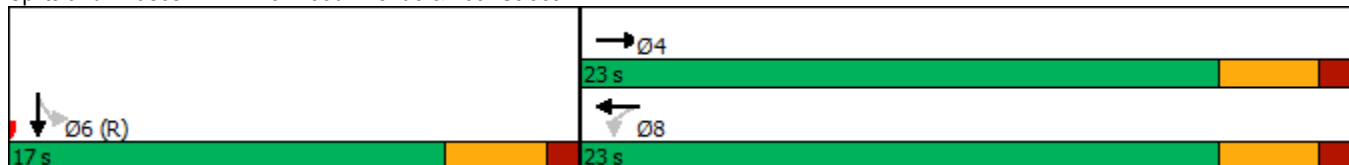


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Total Delay		7.4			8.7							11.2
LOS		A			A							B
Approach Delay		7.4			8.7							11.2
Approach LOS		A			A							B
Stops (vph)		98			140							95
Fuel Used(gal)		1			4							2
CO Emissions (g/hr)		94			296							114
NOx Emissions (g/hr)		18			58							22
VOC Emissions (g/hr)		22			69							27
Dilemma Vehicles (#)		0			0							0
Queue Length 50th (ft)		23			33							23
Queue Length 95th (ft)		52			69							56
Internal Link Dist (ft)		271			1585			588				579
Turn Bay Length (ft)												
Base Capacity (vph)		715			762							531
Starvation Cap Reductn		0			0							0
Spillback Cap Reductn		0			0							0
Storage Cap Reductn		0			0							0
Reduced v/c Ratio		0.29			0.33							0.31

Intersection Summary

Area Type:	Other
Cycle Length:	40
Actuated Cycle Length:	40
Offset:	0 (0%), Referenced to phase 6:SBTL, Start of Green
Natural Cycle:	40
Control Type:	Pretimed
Maximum v/c Ratio:	0.33
Intersection Signal Delay:	8.9
Intersection LOS:	A
Intersection Capacity Utilization:	47.2%
ICU Level of Service:	A
Analysis Period (min):	15

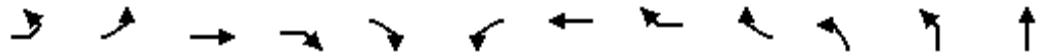
Splits and Phases: 14: Kenwood Avenue & 79th Street



Lanes, Volumes, Timings

15: Stony Island Avenue & South Chicago Avenue & 79th Street

02/23/2018



Lane Group	EBL2	EBL	EBT	EBR	EBR2	WBL	WBT	WBR	WBR2	NBL2	NBL	NBT
Lane Configurations												
Traffic Volume (vph)	3	30	157	29	15	79	176	55	33	13	82	825
Future Volume (vph)	3	30	157	29	15	79	176	55	33	13	82	825
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Width (ft)	9	9	10	11	11	9	10	11	11	12	12	12
Storage Length (ft)		100		100		175		150			90	
Storage Lanes		1		1		1		1			1	
Taper Length (ft)		25				25					25	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.91	1.00	0.91
Fr <sub>t</sub>				0.850				0.850				
Fl <sub>t</sub> Protected		0.950				0.950					0.950	
Satd. Flow (prot)	0	1509	1647	1450	0	1509	1392	1450	0	0	1676	4818
Fl <sub>t</sub> Permitted		0.319				0.423					0.950	
Satd. Flow (perm)	0	507	1647	1450	0	672	1392	1450	0	0	1676	4818
Right Turn on Red					No				No			
Satd. Flow (RTOR)												
Link Speed (mph)			30				30					30
Link Distance (ft)			1665				377					254
Travel Time (s)			37.8				8.6					5.8
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Parking (#/hr)							11					
Adj. Flow (vph)	3	32	165	31	16	83	185	58	35	14	86	868
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	35	165	47	0	83	185	93	0	0	100	868
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Right	Left	Left	Right	Right	Left	Left	Left
Median Width(ft)			9				9					12
Link Offset(ft)			0				0					0
Crosswalk Width(ft)			16				16					16
Two way Left Turn Lane												
Headway Factor	1.22	1.22	1.17	1.12	1.12	1.22	1.44	1.12	1.12	1.07	1.07	1.07
Turning Speed (mph)	15	15		9	9	15		9	9	15	15	
Turn Type	Perm	Perm	NA	Perm		pm+pt	NA	Prot		Prot	Prot	NA
Protected Phases			4			3	8	8		5	5	2
Permitted Phases	4	4		4		8						
Minimum Split (s)	21.0	21.0	21.0	21.0		8.0	21.0	21.0		8.0	8.0	34.0
Total Split (s)	26.0	26.0	26.0	26.0		10.0	36.0	36.0		17.0	17.0	57.0
Total Split (%)	15.3%	15.3%	15.3%	15.3%		5.9%	21.2%	21.2%		10.0%	10.0%	33.5%
Maximum Green (s)	21.0	21.0	21.0	21.0		6.0	31.0	31.0		14.0	14.0	50.0
Yellow Time (s)	3.0	3.0	3.0	3.0		3.5	3.0	3.0		3.0	3.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0		0.5	2.0	2.0		0.0	0.0	3.0
Lost Time Adjust (s)		1.0	1.0	1.0		1.0	1.0	1.0			1.0	1.0
Total Lost Time (s)		6.0	6.0	6.0		5.0	6.0	6.0			4.0	8.0
Lead/Lag										Lead	Lead	Lag
Lead-Lag Optimize?												
Walk Time (s)	5.0	5.0	5.0	5.0			5.0	5.0				5.0
Flash Dont Walk (s)	11.0	11.0	11.0	11.0			11.0	11.0				22.0
Pedestrian Calls (#/hr)	0	0	0	0			0	0				0
Act Efect Green (s)		20.0	20.0	20.0		31.0	30.0	30.0			13.0	49.0

Lanes, Volumes, Timings

15: Stony Island Avenue & South Chicago Avenue & 79th Street

02/23/2018



Lane Group	NBR	NBR2	SBL2	SBL	SBT	SBR	SBR2	SET	SER	SER2	NWT	NWR
Lane Configurations	↔			↔	↑↑↑	↔		↑↔			↑↔	
Traffic Volume (vph)	83	3	26	152	1643	161	13	389	181	5	225	38
Future Volume (vph)	83	3	26	152	1643	161	13	389	181	5	225	38
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Width (ft)	12	12	12	12	12	12	12	12	12	12	12	12
Storage Length (ft)	130			0		0			0			0
Storage Lanes	2			1		1			0			0
Taper Length (ft)				0								
Lane Util. Factor	1.00	0.91	0.91	1.00	0.91	1.00	0.91	0.95	0.95	0.95	0.95	0.95
Frt	0.850					0.850		0.951			0.977	
Flt Protected				0.950								
Satd. Flow (prot)	1500	0	0	1676	4818	1500	0	3189	0	0	3276	0
Flt Permitted				0.950								
Satd. Flow (perm)	1500	0	0	1676	4818	1500	0	3189	0	0	3276	0
Right Turn on Red		No					No			No		
Satd. Flow (RTOR)												
Link Speed (mph)					30			30			30	
Link Distance (ft)					690			712			889	
Travel Time (s)					15.7			16.2			20.2	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Parking (#/hr)												
Adj. Flow (vph)	87	3	27	160	1729	169	14	409	191	5	237	40
Shared Lane Traffic (%)												
Lane Group Flow (vph)	90	0	0	187	1729	183	0	605	0	0	279	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Right	Right	Left	Left	Left	Right	Right	Left	Right	Right	Left	Right
Median Width(ft)					12			0			0	
Link Offset(ft)					0			0			0	
Crosswalk Width(ft)					16			16			16	
Two way Left Turn Lane												
Headway Factor	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07
Turning Speed (mph)	9	9	15	15		9	9		9	9		9
Turn Type	Perm		Prot	Prot	NA	Perm		NA			NA	
Protected Phases			1	1	6			10			14	
Permitted Phases	2					6						
Minimum Split (s)	34.0		8.0	8.0	45.0	45.0		31.0			31.0	
Total Split (s)	57.0		34.0	34.0	74.0	74.0		43.0			43.0	
Total Split (%)	33.5%		20.0%	20.0%	43.5%	43.5%		25.3%			25.3%	
Maximum Green (s)	50.0		31.0	31.0	67.0	67.0		37.0			37.0	
Yellow Time (s)	4.0		3.0	3.0	4.0	4.0		4.0			4.0	
All-Red Time (s)	3.0		0.0	0.0	3.0	3.0		2.0			2.0	
Lost Time Adjust (s)	1.0			1.0	1.0	1.0		1.0			1.0	
Total Lost Time (s)	8.0			4.0	8.0	8.0		7.0			7.0	
Lead/Lag	Lag		Lead	Lead	Lag	Lag						
Lead-Lag Optimize?												
Walk Time (s)	5.0				5.0	5.0		4.0			4.0	
Flash Dont Walk (s)	22.0				33.0	33.0		21.0			21.0	
Pedestrian Calls (#/hr)	0				0	0		0			0	
Act Effct Green (s)	49.0			30.0	66.0	66.0		36.0			36.0	

Lanes, Volumes, Timings  
 15: Stony Island Avenue & South Chicago Avenue & 79th Street

02/23/2018



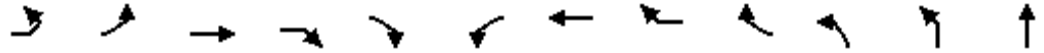
Lane Group	NWR2
Lane Configurations	
Traffic Volume (vph)	2
Future Volume (vph)	2
Ideal Flow (vphpl)	1800
Lane Width (ft)	12
Storage Length (ft)	
Storage Lanes	
Taper Length (ft)	
Lane Util. Factor	0.95
Fr <sub>t</sub>	
Fl <sub>t</sub> Protected	
Satd. Flow (prot)	0
Fl <sub>t</sub> Permitted	
Satd. Flow (perm)	0
Right Turn on Red	No
Satd. Flow (RTOR)	
Link Speed (mph)	
Link Distance (ft)	
Travel Time (s)	
Peak Hour Factor	0.95
Parking (#/hr)	
Adj. Flow (vph)	2
Shared Lane Traffic (%)	
Lane Group Flow (vph)	0
Enter Blocked Intersection	No
Lane Alignment	Right
Median Width(ft)	
Link Offset(ft)	
Crosswalk Width(ft)	
Two way Left Turn Lane	
Headway Factor	1.07
Turning Speed (mph)	9
Turn Type	
Protected Phases	
Permitted Phases	
Minimum Split (s)	
Total Split (s)	
Total Split (%)	
Maximum Green (s)	
Yellow Time (s)	
All-Red Time (s)	
Lost Time Adjust (s)	
Total Lost Time (s)	
Lead/Lag	
Lead-Lag Optimize?	
Walk Time (s)	
Flash Dont Walk (s)	
Pedestrian Calls (#/hr)	
Act Effct Green (s)	



Lanes, Volumes, Timings

15: Stony Island Avenue & South Chicago Avenue & 79th Street

02/23/2018

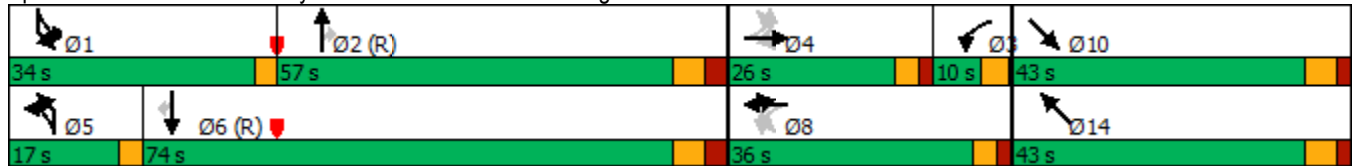


Lane Group	EBL2	EBL	EBT	EBR	EBR2	WBL	WBT	WBR	WBR2	NBL2	NBL	NBT
Actuated g/C Ratio		0.12	0.12	0.12		0.18	0.18	0.18			0.08	0.29
v/c Ratio		0.59	0.85	0.28		0.56	0.76	0.36			0.78	0.63
Control Delay		109.0	108.3	73.2		78.9	82.6	63.2			112.9	54.9
Queue Delay		0.0	0.0	0.0		0.0	0.0	0.0			0.0	0.0
Total Delay		109.0	108.3	73.2		78.9	82.6	63.2			112.9	54.9
LOS		F	F	E		E	F	E			F	D
Approach Delay		101.7				76.7						59.7
Approach LOS		F				E						E
Stops (vph)		30	144	40		68	165	77			86	703
Fuel Used(gal)		1	6	1		2	6	2			3	18
CO Emissions (g/hr)		93	440	103		172	397	172			224	1248
NOx Emissions (g/hr)		18	86	20		33	77	34			44	243
VOC Emissions (g/hr)		21	102	24		40	92	40			52	289
Dilemma Vehicles (#)		0	0	0		0	0	0			0	0
Queue Length 50th (ft)		38	183	49		82	201	93			112	309
Queue Length 95th (ft)		#97	#321	95		142	#316	156			#217	360
Internal Link Dist (ft)		1585				297						174
Turn Bay Length (ft)		100		100		175		150			90	
Base Capacity (vph)		59	193	170		147	245	255			128	1388
Starvation Cap Reductn		0	0	0		0	0	0			0	0
Spillback Cap Reductn		0	0	0		0	0	0			0	0
Storage Cap Reductn		0	0	0		0	0	0			0	0
Reduced v/c Ratio		0.59	0.85	0.28		0.56	0.76	0.36			0.78	0.63

Intersection Summary

Area Type: Other  
 Cycle Length: 170  
 Actuated Cycle Length: 170  
 Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBT, Start of Green  
 Natural Cycle: 115  
 Control Type: Pretimed  
 Maximum v/c Ratio: 0.92  
 Intersection Signal Delay: 65.7 Intersection LOS: E  
 Intersection Capacity Utilization 112.4% ICU Level of Service H  
 Analysis Period (min) 15  
 # 95th percentile volume exceeds capacity, queue may be longer.  
 Queue shown is maximum after two cycles.

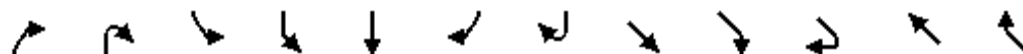
Splits and Phases: 15: Stony Island Avenue & South Chicago Avenue & 79th Street



Lanes, Volumes, Timings

15: Stony Island Avenue & South Chicago Avenue & 79th Street

02/23/2018



Lane Group	NBR	NBR2	SBL2	SBL	SBT	SBR	SBR2	SET	SER	SER2	NWT	NWR
Actuated g/C Ratio	0.29			0.18	0.39	0.39		0.21			0.21	
v/c Ratio	0.21			0.63	0.92	0.31		0.90			0.40	
Control Delay	47.5			75.6	58.9	38.1		81.9			59.8	
Queue Delay	0.0			0.0	0.0	0.0		0.0			0.0	
Total Delay	47.5			75.6	58.9	38.1		81.9			59.8	
LOS	D			E	E	D		F			E	
Approach Delay					58.6			81.9			59.8	
Approach LOS					E			F			E	
Stops (vph)	64			163	1509	120		536			224	
Fuel Used(gal)	2			5	37	3		16			6	
CO Emissions (g/hr)	117			321	2579	206		1100			440	
NOx Emissions (g/hr)	23			63	502	40		214			86	
VOC Emissions (g/hr)	27			75	598	48		255			102	
Dilemma Vehicles (#)	0			0	0	0		0			0	
Queue Length 50th (ft)	76			196	672	142		349			142	
Queue Length 95th (ft)	129			289	742	211		#454			192	
Internal Link Dist (ft)					610			632			809	
Turn Bay Length (ft)	130											
Base Capacity (vph)	432			295	1870	582		675			693	
Starvation Cap Reductn	0			0	0	0		0			0	
Spillback Cap Reductn	0			0	0	0		0			0	
Storage Cap Reductn	0			0	0	0		0			0	
Reduced v/c Ratio	0.21			0.63	0.92	0.31		0.90			0.40	

Intersection Summary



Lane Group	NWR2
Actuated g/C Ratio	
v/c Ratio	
Control Delay	
Queue Delay	
Total Delay	
LOS	
Approach Delay	
Approach LOS	
Stops (vph)	
Fuel Used(gal)	
CO Emissions (g/hr)	
NOx Emissions (g/hr)	
VOC Emissions (g/hr)	
Dilemma Vehicles (#)	
Queue Length 50th (ft)	
Queue Length 95th (ft)	
Internal Link Dist (ft)	
Turn Bay Length (ft)	
Base Capacity (vph)	
Starvation Cap Reductn	
Spillback Cap Reductn	
Storage Cap Reductn	
Reduced v/c Ratio	
Intersection Summary	

Lanes, Volumes, Timings  
 16: 79th Street & Cregier Avenue

02/23/2018



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔			↔			↔↔				
Traffic Volume (vph)	25	205	0	0	318	25	25	100	25	0	0	0
Future Volume (vph)	25	205	0	0	318	25	25	100	25	0	0	0
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Fr <sub>t</sub>					0.990			0.978				
Fl <sub>t</sub> Protected		0.995						0.992				
Satd. Flow (prot)	0	1574	0	0	1747	0	0	1712	0	0	0	0
Fl <sub>t</sub> Permitted		0.945						0.992				
Satd. Flow (perm)	0	1495	0	0	1747	0	0	1712	0	0	0	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)					10			11				
Link Speed (mph)		30			30			30				30
Link Distance (ft)		946			328			152				657
Travel Time (s)		21.5			7.5			3.5				14.9
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Bus Blockages (#/hr)	0	1	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)		0										
Adj. Flow (vph)	27	223	0	0	346	27	27	109	27	0	0	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	250	0	0	373	0	0	163	0	0	0	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			0				0
Link Offset(ft)		0			0			0				0
Crosswalk Width(ft)		16			16			16				16
Two way Left Turn Lane												
Headway Factor	1.07	1.23	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07
Turning Speed (mph)	15		9	15		9	15		9	15		9
Turn Type	Perm	NA			NA		Perm	NA				
Protected Phases		4			8			2				
Permitted Phases	4						2					
Minimum Split (s)	19.0	19.0			19.0		23.0	23.0				
Total Split (s)	62.0	62.0			62.0		23.0	23.0				
Total Split (%)	72.9%	72.9%			72.9%		27.1%	27.1%				
Maximum Green (s)	58.0	58.0			58.0		19.0	19.0				
Yellow Time (s)	3.0	3.0			3.0		3.0	3.0				
All-Red Time (s)	1.0	1.0			1.0		1.0	1.0				
Lost Time Adjust (s)		1.0			1.0			1.0				
Total Lost Time (s)		5.0			5.0			5.0				
Lead/Lag												
Lead-Lag Optimize?												
Walk Time (s)	5.0	5.0			5.0		5.0	5.0				
Flash Dont Walk (s)	10.0	10.0			10.0		14.0	14.0				
Pedestrian Calls (#/hr)	0	0			0		0	0				
Act Effct Green (s)		57.0			57.0			18.0				
Actuated g/C Ratio		0.67			0.67			0.21				
v/c Ratio		0.25			0.32			0.44				
Control Delay		1.6			6.5			31.4				

Lanes, Volumes, Timings  
 16: 79th Street & Cregier Avenue

02/23/2018



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Queue Delay		0.0			0.0			0.0				
Total Delay		1.6			6.5			31.4				
LOS		A			A			C				
Approach Delay		1.6			6.5			31.4				
Approach LOS		A			A			C				
Stops (vph)		20			129			119				
Fuel Used(gal)		3			2			2				
CO Emissions (g/hr)		179			143			126				
NOx Emissions (g/hr)		35			28			24				
VOC Emissions (g/hr)		41			33			29				
Dilemma Vehicles (#)		0			0			0				
Queue Length 50th (ft)		12			70			71				
Queue Length 95th (ft)		m15			111			130				
Internal Link Dist (ft)		866			248			72			577	
Turn Bay Length (ft)												
Base Capacity (vph)		1002			1174			371				
Starvation Cap Reductn		0			0			0				
Spillback Cap Reductn		0			0			0				
Storage Cap Reductn		0			0			0				
Reduced v/c Ratio		0.25			0.32			0.44				

Intersection Summary













Area Type: Other  
 Cycle Length: 85  
 Actuated Cycle Length: 85  
 Offset: 0 (0%), Referenced to phase 4:EBTL and 8:WBT, Start of Green  
 Natural Cycle: 45  
 Control Type: Pretimed  
 Maximum v/c Ratio: 0.44  
 Intersection Signal Delay: 10.1  
 Intersection LOS: B  
 Intersection Capacity Utilization 57.7%  
 ICU Level of Service B  
 Analysis Period (min) 15  
 m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 16: 79th Street & Cregier Avenue



Lanes, Volumes, Timings  
58: Paulina Street & 79th Street

02/23/2018

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑			↑		↖		↗	↖		↗
Traffic Volume (vph)	0	540	0	0	419	0	8	0	28	29	0	5
Future Volume (vph)	0	540	0	0	419	0	8	0	28	29	0	5
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Width (ft)	12	11	12	12	11	10	12	12	12	12	12	12
Storage Length (ft)	0		0	0		0	0		10	0		10
Storage Lanes	0		0	0		0	1		1	1		1
Taper Length (ft)	0			0			0			0		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Fr <sub>t</sub>									0.850			0.850
Fl <sub>t</sub> Protected							0.950			0.950		
Satd. Flow (prot)	0	1369	0	0	1335	0	1710	0	1471	1598	0	1530
Fl <sub>t</sub> Permitted							0.950			0.950		
Satd. Flow (perm)	0	1369	0	0	1335	0	1710	0	1471	1598	0	1530
Link Speed (mph)		30			30			30				30
Link Distance (ft)		664			664			657				669
Travel Time (s)		15.1			15.1			14.9				15.2
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.67	0.92	0.70	0.66	0.92	0.42
Heavy Vehicles (%)	2%	11%	2%	2%	10%	2%	0%	2%	4%	7%	2%	0%
Bus Blockages (#/hr)	0	6	6	0	6	6	0	0	0	0	0	0
Parking (#/hr)		1			7							
Adj. Flow (vph)	0	587	0	0	455	0	12	0	40	44	0	12
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	587	0	0	455	0	12	0	40	44	0	12
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		9			9			12				12
Link Offset(ft)		0			0			0				0
Crosswalk Width(ft)		16			16			16				16
Two way Left Turn Lane												
Headway Factor	1.07	1.33	1.07	1.07	1.38	1.17	1.07	1.07	1.07	1.07	1.07	1.07
Turning Speed (mph)	15		9	15		9	15		9	15		9
Sign Control		Free			Free			Stop			Stop	
<b>Intersection Summary</b>												
Area Type:	Other											
Control Type:	Unsignalized											
Intersection Capacity Utilization	49.2%						ICU Level of Service A					
Analysis Period (min)	15											

Lanes, Volumes, Timings  
69: Union Avenue & 79th Street

02/23/2018



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔			↔			↔				
Traffic Volume (vph)	25	518	0	0	523	16	2	8	8	0	0	0
Future Volume (vph)	25	518	0	0	523	16	2	8	8	0	0	0
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Width (ft)	12	10	12	12	10	12	12	16	12	12	16	16
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Fr <sub>t</sub>					0.993			0.942				
Fl <sub>t</sub> Protected		0.996						0.993				
Satd. Flow (prot)	0	1360	0	0	1372	0	0	1908	0	0	0	0
Fl <sub>t</sub> Permitted		0.996						0.993				
Satd. Flow (perm)	0	1360	0	0	1372	0	0	1908	0	0	0	0
Link Speed (mph)		30			30			30				30
Link Distance (ft)		665			358			654				664
Travel Time (s)		15.1			8.1			14.9				15.1
Peak Hour Factor	0.52	0.95	0.92	0.92	0.96	0.50	0.50	0.67	0.67	0.92	0.92	0.92
Heavy Vehicles (%)	8%	11%	2%	2%	10%	0%	0%	0%	0%	2%	2%	2%
Parking (#/hr)		0			0							
Adj. Flow (vph)	48	545	0	0	545	32	4	12	12	0	0	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	593	0	0	577	0	0	28	0	0	0	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		9			9			0				0
Link Offset(ft)		0			0			0				0
Crosswalk Width(ft)		16			16			16				16
Two way Left Turn Lane												
Headway Factor	1.07	1.33	1.07	1.07	1.33	1.07	1.07	0.91	1.07	1.07	0.91	0.91
Turning Speed (mph)	15		9	15		9	15		9	15		9
Sign Control		Free			Free			Stop			Stop	

Intersection Summary

Area Type: Other

Control Type: Unsignalized

Intersection Capacity Utilization 61.9% ICU Level of Service B

Analysis Period (min) 15

**Synchro Reports -  
2040 Volumes  
Existing Geometry  
Optimized**



# **AM Reports**

Lanes, Volumes, Timings  
 1: W. Columbus Ave. & W. 79th St. & S. Sawyer Ave.

11/22/2017



Lane Group	EBL	EBT	EBR	WBL	WBT	SBR2	NEL2	NET	NER	SWT	SWR	Ø1
Lane Configurations												
Traffic Volume (vph)	313	484	7	110	358	3	1	879	131	550	150	
Future Volume (vph)	313	484	7	110	358	3	1	879	131	550	150	
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	
Lane Width (ft)	9	11	9	10	12	12	12	12	12	11	11	
Storage Length (ft)	180		100	0					0		0	
Storage Lanes	1		1	1					0		0	
Taper Length (ft)	25			25								
Satd. Flow (prot)	1248	3644	0	1306	2577	1401	1539	2928	0	2739	0	
Flt Permitted	0.363			0.443			0.360					
Satd. Flow (perm)	477	3644	0	609	2577	1401	583	2928	0	2739	0	
Right Turn on Red			Yes			Yes			Yes			
Satd. Flow (RTOR)		3				188		20				
Link Speed (mph)		30			30			30		30		
Link Distance (ft)		965			345			696		414		
Travel Time (s)		21.9			7.8			15.8		9.4		
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	
Heavy Vehicles (%)	11%	13%	0%	10%	18%	0%	0%	3%	4%	3%	13%	
Bus Blockages (#/hr)	0	0	6	0	6	0	0	0	0	0	0	
Parking (#/hr)		2										
Shared Lane Traffic (%)												
Lane Group Flow (vph)	340	534	0	120	389	3	1	1097	0	761	0	
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Right	
Median Width(ft)		14			10			12		12		
Link Offset(ft)		0			0			0		0		
Crosswalk Width(ft)		16			16			16		16		
Two way Left Turn Lane												
Headway Factor	1.39	1.34	1.39	1.33	1.24	1.22	1.22	1.22	1.22	1.28	1.28	
Turning Speed (mph)	15		9	15		9	15		9		9	
Turn Type	pm+pt	NA		Perm	NA	Perm	Perm	NA		NA		
Protected Phases	7	4			8			2		6		1
Permitted Phases	4			8		6 7	2					
Minimum Split (s)	8.5	33.0		33.0	33.0		44.0	44.0		45.0		10.0
Total Split (s)	13.0	46.0		33.0	33.0		44.0	44.0		54.0		10.0
Total Split (%)	13.0%	46.0%		33.0%	33.0%		44.0%	44.0%		54.0%		10%
Yellow Time (s)	3.0	4.0		4.0	4.0		4.0	4.0		4.0		3.0
All-Red Time (s)	0.0	2.0		2.0	2.0		2.0	2.0		2.0		0.0
Lost Time Adjust (s)	1.0	-2.0		-2.0	-2.0		-2.0	-2.0		-2.0		
Total Lost Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0		
Lead/Lag	Lead			Lag	Lag		Lag	Lag				Lead
Lead-Lag Optimize?												
Act Effect Green (s)	42.0	42.0		29.0	29.0	63.0	40.0	40.0		50.0		
Actuated g/C Ratio	0.42	0.42		0.29	0.29	0.63	0.40	0.40		0.50		
v/c Ratio	1.26	0.35		0.68	0.52	0.00	0.00	0.93		0.56		
Control Delay	171.1	20.4		53.3	32.7	0.0	18.0	42.6		28.4		
Queue Delay	0.8	0.0		0.0	0.0	0.0	0.0	0.0		0.5		
Total Delay	171.9	20.4		53.3	32.7	0.0	18.0	42.6		29.0		
LOS	F	C		D	C	A	B	D		C		

Lanes, Volumes, Timings

1: W. Columbus Ave. & W. 79th St. & S. Sawyer Ave.

11/22/2017

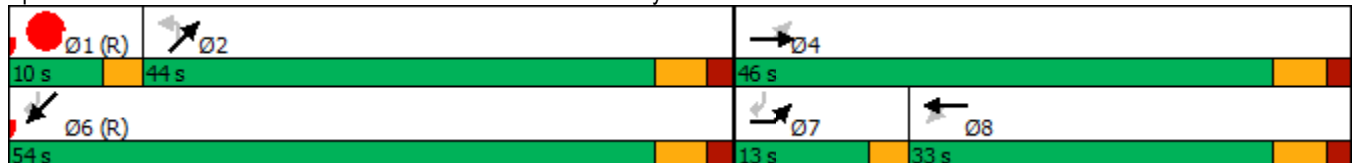


Lane Group	EBL	EBT	EBR	WBL	WBT	SBR2	NEL2	NET	NER	SWT	SWR	Ø1
Approach Delay		79.4			37.5			42.6		29.0		
Approach LOS		E			D			D		C		
Queue Length 50th (ft)	~229	82		67	108	0	0	339		201		
Queue Length 95th (ft)	#447	110		#156	157	0	4	#481		269		
Internal Link Dist (ft)		885			265			616		334		
Turn Bay Length (ft)	180						115					
Base Capacity (vph)	269	1532		176	747	952	233	1183		1369		
Starvation Cap Reductn	0	0		0	0	0	0	0		247		
Spillback Cap Reductn	16	0		0	0	0	0	0		0		
Storage Cap Reductn	0	0		0	0	0	0	0		0		
Reduced v/c Ratio	1.34	0.35		0.68	0.52	0.00	0.00	0.93		0.68		

Intersection Summary

Area Type: CBD  
 Cycle Length: 100  
 Actuated Cycle Length: 100  
 Offset: 0 (0%), Referenced to phase 1:Hold and 6:SWT, Start of Green  
 Natural Cycle: 100  
 Control Type: Pretimed  
 Maximum v/c Ratio: 1.26  
 Intersection Signal Delay: 48.5 Intersection LOS: D  
 Intersection Capacity Utilization 98.4% ICU Level of Service F  
 Analysis Period (min) 15  
 ~ Volume exceeds capacity, queue is theoretically infinite.  
 Queue shown is maximum after two cycles.  
 # 95th percentile volume exceeds capacity, queue may be longer.  
 Queue shown is maximum after two cycles.

Splits and Phases: 1: W. Columbus Ave. & W. 79th St. & S. Sawyer Ave.



Lanes, Volumes, Timings  
 2: S. Kedzie Ave. & W. 79th St.

11/22/2017



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑	↗	↖	↑↑			↔			↔	
Traffic Volume (vph)	0	521	94	8	369	41	94	614	24	9	463	5
Future Volume (vph)	0	521	94	8	369	41	94	614	24	9	463	5
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Width (ft)	12	12	10	9	11	12	12	11	12	12	11	12
Storage Length (ft)	0		0	40		0	0		0	0		0
Storage Lanes	0		1	1		0	0		0	0		0
Taper Length (ft)	25			25			25			25		
Satd. Flow (prot)	0	2773	1206	1074	2535	0	0	2851	0	0	2851	0
Flt Permitted				0.439				0.772			0.936	
Satd. Flow (perm)	0	2773	1206	496	2535	0	0	2214	0	0	2671	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			102		10			4			1	
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		345			652			668			245	
Travel Time (s)		7.8			14.8			15.2			5.6	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	2%	11%	4%	29%	16%	12%	3%	3%	10%	0%	3%	0%
Bus Blockages (#/hr)	0	0	6	0	0	6	0	0	0	0	6	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	566	102	9	446	0	0	795	0	0	518	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		9			9			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.22	1.22	1.37	1.39	1.28	1.22	1.22	1.28	1.22	1.22	1.30	1.22
Turning Speed (mph)	15		9	15		9	15		9	15		9
Turn Type		NA	Perm	Perm	NA		pm+pt	NA		Perm	NA	
Protected Phases		4			8		5	2			6	
Permitted Phases			4	8			2			6		
Minimum Split (s)		23.0	23.0	23.0	23.0		9.5	34.0		34.0	34.0	
Total Split (s)		50.0	50.0	32.0	32.0		9.5	60.0		50.5	50.5	
Total Split (%)		45.5%	45.5%	29.1%	29.1%		8.6%	54.5%		45.9%	45.9%	
Yellow Time (s)		4.0	4.0	4.0	4.0		3.0	4.0		4.0	4.0	
All-Red Time (s)		1.0	1.0	1.0	1.0		0.0	2.0		2.0	2.0	
Lost Time Adjust (s)		-1.0	-1.0	-1.0	-1.0			-2.0			-2.0	
Total Lost Time (s)		4.0	4.0	4.0	4.0			4.0			4.0	
Lead/Lag				Lag	Lag		Lag			Lead	Lead	
Lead-Lag Optimize?				Yes	Yes		Yes			Yes	Yes	
Act Effct Green (s)		46.0	46.0	28.0	28.0			56.0			46.5	
Actuated g/C Ratio		0.42	0.42	0.25	0.25			0.51			0.42	
v/c Ratio		0.49	0.18	0.07	0.68			0.69			0.46	
Control Delay		25.2	4.7	33.1	42.4			24.4			24.3	
Queue Delay		1.5	0.0	0.0	0.0			0.0			10.3	
Total Delay		26.7	4.7	33.1	42.4			24.4			34.7	
LOS		C	A	C	D			C			C	
Approach Delay		23.3			42.2			24.4			34.7	

Lane Group	Ø7
Lane Configurations	
Traffic Volume (vph)	
Future Volume (vph)	
Ideal Flow (vphpl)	
Lane Width (ft)	
Storage Length (ft)	
Storage Lanes	
Taper Length (ft)	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Right Turn on Red	
Satd. Flow (RTOR)	
Link Speed (mph)	
Link Distance (ft)	
Travel Time (s)	
Peak Hour Factor	
Heavy Vehicles (%)	
Bus Blockages (#/hr)	
Shared Lane Traffic (%)	
Lane Group Flow (vph)	
Enter Blocked Intersection	
Lane Alignment	
Median Width(ft)	
Link Offset(ft)	
Crosswalk Width(ft)	
Two way Left Turn Lane	
Headway Factor	
Turning Speed (mph)	
Turn Type	
Protected Phases	7
Permitted Phases	
Minimum Split (s)	18.0
Total Split (s)	18.0
Total Split (%)	16%
Yellow Time (s)	3.0
All-Red Time (s)	0.0
Lost Time Adjust (s)	
Total Lost Time (s)	
Lead/Lag	Lead
Lead-Lag Optimize?	Yes
Act Effct Green (s)	
Actuated g/C Ratio	
v/c Ratio	
Control Delay	
Queue Delay	
Total Delay	
LOS	
Approach Delay	

Lanes, Volumes, Timings  
 2: S. Kedzie Ave. & W. 79th St.

11/22/2017

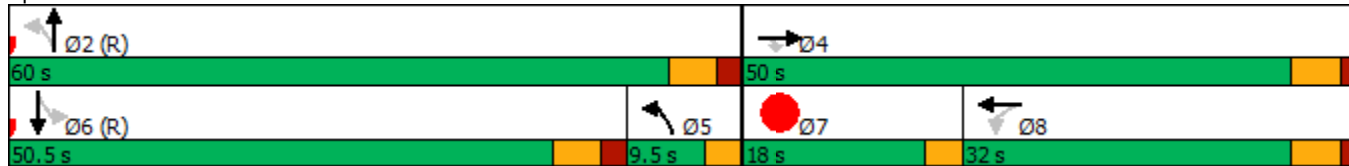


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Approach LOS		C				D				C		
Queue Length 50th (ft)		151	0	5	146			192			134	
Queue Length 95th (ft)		202	32	19	205			250			183	
Internal Link Dist (ft)		265			572			588			165	
Turn Bay Length (ft)				40								
Base Capacity (vph)		1159	563	126	652			1160			1129	
Starvation Cap Reductn		391	0	0	0			0			577	
Spillback Cap Reductn		0	0	0	0			0			0	
Storage Cap Reductn		0	0	0	0			0			0	
Reduced v/c Ratio		0.74	0.18	0.07	0.68			0.69			0.94	

Intersection Summary

Area Type:	CBD
Cycle Length:	110
Actuated Cycle Length:	110
Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green	
Natural Cycle:	85
Control Type:	Pretimed
Maximum v/c Ratio:	0.69
Intersection Signal Delay:	29.6
Intersection LOS:	C
Intersection Capacity Utilization	74.2%
ICU Level of Service	D
Analysis Period (min)	15

Splits and Phases: 2: S. Kedzie Ave. & W. 79th St.



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Lane Group	Ø7
Approach LOS	
Queue Length 50th (ft)	
Queue Length 95th (ft)	
Internal Link Dist (ft)	
Turn Bay Length (ft)	
Base Capacity (vph)	
Starvation Cap Reductn	
Spillback Cap Reductn	
Storage Cap Reductn	
Reduced v/c Ratio	
Intersection Summary	

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Lanes, Volumes, Timings  
 3: W. Columbus Ave. & S. Kedzie Ave.

11/22/2017

Lane Group	NBL	NBT	NBR	SBL	SBT	SBR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Traffic Volume (vph)	1	527	127	7	404	407	508	681	3	70	292	54
Future Volume (vph)	1	527	127	7	404	407	508	681	3	70	292	54
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Width (ft)	12	11	12	12	10	10	11	11	11	10	11	12
Storage Length (ft)	0		0	0		100	0		0	90		0
Storage Lanes	0		0	0		1	1		0	1		0
Taper Length (ft)	25			25			25			25		
Satd. Flow (prot)	0	2778	0	0	2738	1224	1417	2855	0	1422	2697	0
Flt Permitted		0.955			0.940		0.448			0.268		
Satd. Flow (perm)	0	2653	0	0	2576	1224	668	2855	0	401	2697	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		32				250		1			21	
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		245			494			414			728	
Travel Time (s)		5.6			11.2			9.4			16.5	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	0%	4%	4%	50%	4%	5%	5%	4%	33%	1%	8%	6%
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	712	0	0	447	442	552	743	0	76	376	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			11			11	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.22	1.28	1.22	1.22	1.33	1.33	1.28	1.28	1.28	1.33	1.28	1.22
Turning Speed (mph)	15		9	15		9	15		9	15		9
Turn Type	Perm	NA		Perm	NA	pm+ov	pm+pt	NA		Perm	NA	
Protected Phases		2			6	7	7	4			8	
Permitted Phases	2			6		6	4			8		
Minimum Split (s)	28.0	28.0		28.0	28.0	11.0	11.0	26.0		26.0	26.0	
Total Split (s)	38.0	38.0		38.0	38.0	30.0	30.0	62.0		32.0	32.0	
Total Split (%)	38.0%	38.0%		38.0%	38.0%	30.0%	30.0%	62.0%		32.0%	32.0%	
Yellow Time (s)	4.0	4.0		4.0	4.0	3.0	3.0	4.0		4.0	4.0	
All-Red Time (s)	2.0	2.0		2.0	2.0	0.0	0.0	2.0		2.0	2.0	
Lost Time Adjust (s)		-2.0			-2.0	1.0	1.0	-2.0		-2.0	-2.0	
Total Lost Time (s)		4.0			4.0	4.0	4.0	4.0		4.0	4.0	
Lead/Lag						Lag	Lag			Lead	Lead	
Lead-Lag Optimize?						Yes	Yes			Yes	Yes	
Act Effct Green (s)		34.0			34.0	64.0	58.0	58.0		28.0	28.0	
Actuated g/C Ratio		0.34			0.34	0.64	0.58	0.58		0.28	0.28	
v/c Ratio		0.77			0.51	0.51	0.95	0.45		0.68	0.49	
Control Delay		34.9			28.9	6.0	32.0	9.9		64.1	30.8	
Queue Delay		51.5			0.0	0.0	0.0	1.2		0.0	0.0	
Total Delay		86.4			28.9	6.0	32.0	11.1		64.1	30.8	
LOS		F			C	A	C	B		E	C	
Approach Delay		86.4			17.5			20.0			36.4	
Approach LOS		F			B			C			D	



Lanes, Volumes, Timings  
 3: W. Columbus Ave. & S. Kedzie Ave.

11/22/2017

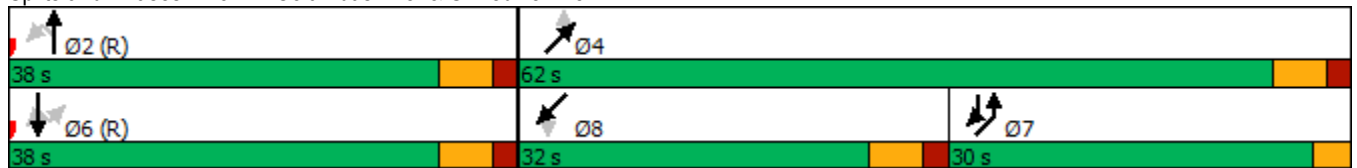


Lane Group	NBL	NBT	NBR	SBL	SBT	SBR	NEL	NET	NER	SWL	SWT	SWR
Queue Length 50th (ft)		203			118	48	270	164		43	98	
Queue Length 95th (ft)		276			167	114	m256	m144		#120	144	
Internal Link Dist (ft)		165			414			334			648	
Turn Bay Length (ft)						100				90		
Base Capacity (vph)		923			875	873	582	1656		112	770	
Starvation Cap Reductn		331			0	0	0	642		0	0	
Spillback Cap Reductn		0			0	0	0	0		0	0	
Storage Cap Reductn		0			0	0	0	0		0	0	
Reduced v/c Ratio		1.20			0.51	0.51	0.95	0.73		0.68	0.49	

Intersection Summary

























Area Type:	CBD
Cycle Length:	100
Actuated Cycle Length:	100
Offset:	0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
Natural Cycle:	80
Control Type:	Pretimed
Maximum v/c Ratio:	0.95
Intersection Signal Delay:	35.7
Intersection LOS:	D
Intersection Capacity Utilization:	82.4%
ICU Level of Service:	E
Analysis Period (min):	15
#	95th percentile volume exceeds capacity, queue may be longer. Queue shown is maximum after two cycles.
m	Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 3: W. Columbus Ave. & S. Kedzie Ave.



Lanes, Volumes, Timings  
4: Ashland Avenue & 79th Street

11/22/2017

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	107	526	48	41	394	62	52	643	56	35	379	45
Future Volume (vph)	107	526	48	41	394	62	52	643	56	35	379	45
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Width (ft)	9	10	9	9	10	9	10	11	11	10	11	11
Storage Length (ft)	80		30	60		30	100		30	100		30
Storage Lanes	1		1	1		1	1		1	1		1
Taper Length (ft)	25			25			25			25		
Satd. Flow (prot)	1385	1141	1152	1345	1189	1110	1282	2400	880	1355	2394	816
Flt Permitted	0.422			0.313			0.444			0.250		
Satd. Flow (perm)	605	1141	1083	436	1189	1056	566	2400	778	347	2394	710
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			61			61			61			61
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		664			1315			665			670	
Travel Time (s)		15.1			29.9			15.1			15.2	
Confl. Peds. (#/hr)	41		54	54		41	47		41	41		47
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Heavy Vehicles (%)	0%	10%	5%	3%	10%	9%	12%	6%	4%	6%	5%	9%
Bus Blockages (#/hr)	0	0	6	0	0	6	0	0	8	0	0	8
Parking (#/hr)		14			7			38	38		42	42
Shared Lane Traffic (%)												
Lane Group Flow (vph)	118	578	53	45	433	68	57	707	62	38	416	49
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			10			10	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.39	1.67	1.44	1.39	1.59	1.44	1.33	1.54	1.99	1.33	1.57	2.06
Turning Speed (mph)	15		9	15		9	15		9	15		9
Turn Type	Perm	NA	Perm	Perm	NA	Perm	Perm	NA	Perm	Perm	NA	Perm
Protected Phases		4			8			2			6	
Permitted Phases	4		4	8		8	2		2	6		6
Minimum Split (s)	38.0	38.0	38.0	38.0	38.0	38.0	27.0	27.0	27.0	27.0	27.0	27.0
Total Split (s)	54.0	54.0	54.0	54.0	54.0	54.0	36.0	36.0	36.0	36.0	36.0	36.0
Total Split (%)	60.0%	60.0%	60.0%	60.0%	60.0%	60.0%	40.0%	40.0%	40.0%	40.0%	40.0%	40.0%
Yellow Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
All-Red Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Lost Time Adjust (s)	-4.0	-4.0	-4.0	-4.0	-4.0	-4.0	-4.0	-4.0	-4.0	-4.0	-4.0	-4.0
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lead/Lag												
Lead-Lag Optimize?												
Act Effct Green (s)	50.0	50.0	50.0	50.0	50.0	50.0	32.0	32.0	32.0	32.0	32.0	32.0
Actuated g/C Ratio	0.56	0.56	0.56	0.56	0.56	0.56	0.36	0.36	0.36	0.36	0.36	0.36
v/c Ratio	0.35	0.91	0.08	0.19	0.66	0.11	0.28	0.83	0.20	0.31	0.49	0.17
Control Delay	14.8	40.1	2.6	14.4	24.3	7.2	25.6	36.6	7.4	29.5	25.0	5.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	14.8	40.1	2.6	14.4	24.3	7.2	25.6	36.6	7.4	29.5	25.0	5.6

Lanes, Volumes, Timings  
4: Ashland Avenue & 79th Street

11/22/2017

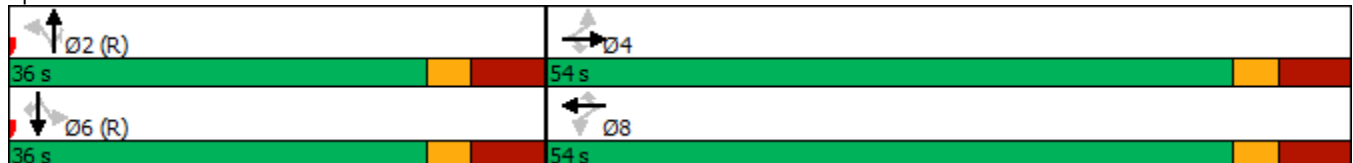


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
LOS	B	D	A	B	C	A	C	D	A	C	C	A
Approach Delay		33.4			21.3			33.6			23.5	
Approach LOS		C			C			C			C	
Queue Length 50th (ft)	35	277	0	16	215	13	23	190	0	15	95	0
Queue Length 95th (ft)	75	#512	14	m37	334	m36	56	#288	27	45	140	19
Internal Link Dist (ft)		584			1235			585			590	
Turn Bay Length (ft)	80		30	60		30	100		30	100		30
Base Capacity (vph)	336	633	628	242	660	613	201	853	315	123	851	291
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.35	0.91	0.08	0.19	0.66	0.11	0.28	0.83	0.20	0.31	0.49	0.17

Intersection Summary

Area Type: CBD  
 Cycle Length: 90  
 Actuated Cycle Length: 90  
 Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green, Master Intersection  
 Natural Cycle: 70  
 Control Type: Pretimed  
 Maximum v/c Ratio: 0.91  
 Intersection Signal Delay: 29.1 Intersection LOS: C  
 Intersection Capacity Utilization 107.5% ICU Level of Service G  
 Analysis Period (min) 15  
 # 95th percentile volume exceeds capacity, queue may be longer.  
 Queue shown is maximum after two cycles.  
 m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 4: Ashland Avenue & 79th Street



Lanes, Volumes, Timings  
5: Loomis Blvd & 79th Street

11/22/2017



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	25	567	25	25	447	25	25	100	25	25	100	25
Future Volume (vph)	25	567	25	25	447	25	25	100	25	25	100	25
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (ft)	60		30	60		30	0		0	0		0
Storage Lanes	1		1	1		1	0		0	0		0
Taper Length (ft)	25			25			25			25		
Satd. Flow (prot)	1509	1429	1318	1509	1429	1350	0	1541	0	0	1541	0
Flt Permitted	0.429			0.348				0.936			0.936	
Satd. Flow (perm)	681	1429	1318	553	1429	1350	0	1454	0	0	1454	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			12			15		11			11	
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		1315			357			644			631	
Travel Time (s)		29.9			8.1			14.6			14.3	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Bus Blockages (#/hr)	0	0	6	0	0	0	0	0	0	0	0	0
Parking (#/hr)		0			0							
Shared Lane Traffic (%)												
Lane Group Flow (vph)	27	616	27	27	486	27	0	163	0	0	163	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.22	1.39	1.26	1.22	1.39	1.22	1.22	1.22	1.22	1.22	1.22	1.22
Turning Speed (mph)	15		9	15		9	15		9	15		9
Turn Type	Perm	NA	Perm	Perm	NA	Perm	Perm	NA		Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4		4	8		8	2			6		
Minimum Split (s)	18.0	18.0	18.0	18.0	18.0	18.0	19.0	19.0		19.0	19.0	
Total Split (s)	64.0	64.0	64.0	64.0	64.0	64.0	26.0	26.0		26.0	26.0	
Total Split (%)	71.1%	71.1%	71.1%	71.1%	71.1%	71.1%	28.9%	28.9%		28.9%	28.9%	
Yellow Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0		1.0	1.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0		0.0			0.0	
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0		4.0			4.0	
Lead/Lag												
Lead-Lag Optimize?												
Act Effct Green (s)	60.0	60.0	60.0	60.0	60.0	60.0		22.0			22.0	
Actuated g/C Ratio	0.67	0.67	0.67	0.67	0.67	0.67		0.24			0.24	
v/c Ratio	0.06	0.65	0.03	0.07	0.51	0.03		0.45			0.45	
Control Delay	1.3	4.1	0.2	5.9	9.9	3.3		31.5			31.5	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0		0.0			0.0	
Total Delay	1.3	4.1	0.2	5.9	9.9	3.3		31.5			31.5	
LOS	A	A	A	A	A	A		C			C	
Approach Delay		3.8			9.4			31.5			31.5	
Approach LOS		A			A			C			C	

Lanes, Volumes, Timings  
5: Loomis Blvd & 79th Street

11/22/2017

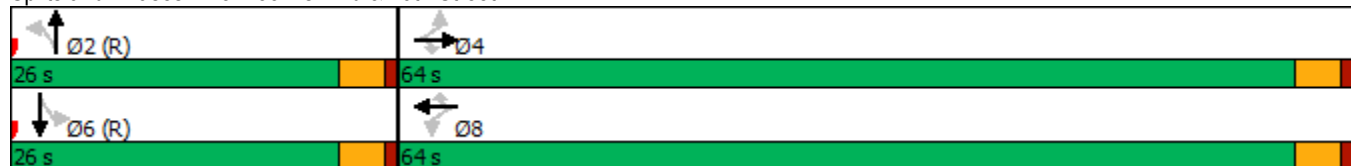


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Queue Length 50th (ft)	1	16	1	5	123	2		73			73	
Queue Length 95th (ft)	m1	m27	m1	14	196	10		134			134	
Internal Link Dist (ft)		1235			277			564			551	
Turn Bay Length (ft)	60		30	60		30						
Base Capacity (vph)	454	952	882	368	952	905		363			363	
Starvation Cap Reductn	0	0	0	0	0	0		0			0	
Spillback Cap Reductn	0	0	0	0	0	0		0			0	
Storage Cap Reductn	0	0	0	0	0	0		0			0	
Reduced v/c Ratio	0.06	0.65	0.03	0.07	0.51	0.03		0.45			0.45	

Intersection Summary






















Area Type:	CBD
Cycle Length:	90
Actuated Cycle Length:	90
Offset:	42 (47%), Referenced to phase 2:NBT and 6:SBT, Start of Green
Natural Cycle:	60
Control Type:	Pretimed
Maximum v/c Ratio:	0.65
Intersection Signal Delay:	11.7
Intersection LOS:	B
Intersection Capacity Utilization:	54.5%
ICU Level of Service:	A
Analysis Period (min):	15
m Volume for 95th percentile queue is metered by upstream signal.	

Splits and Phases: 5: Loomis Blvd & 79th Street



Lanes, Volumes, Timings  
6: Morgan Street & 79th Street

11/22/2017

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	25	607	25	25	510	25	25	100	25	25	100	25
Future Volume (vph)	25	607	25	25	510	25	25	100	25	25	100	25
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (ft)	100		30	100		30	0		0	0		0
Storage Lanes	1		1	1		1	0		0	0		0
Taper Length (ft)	25			25			25			25		
Satd. Flow (prot)	1509	1429	1350	1509	1414	1350	0	1541	0	0	1541	0
Flt Permitted	0.395			0.333				0.943			0.943	
Satd. Flow (perm)	627	1429	1350	529	1414	1350	0	1465	0	0	1465	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			12			14		10			10	
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		323			1321			593			659	
Travel Time (s)		7.3			30.0			13.5			15.0	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Parking (#/hr)		0			2							
Shared Lane Traffic (%)												
Lane Group Flow (vph)	27	660	27	27	554	27	0	163	0	0	163	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.22	1.39	1.22	1.22	1.41	1.22	1.22	1.22	1.22	1.22	1.22	1.22
Turning Speed (mph)	15		9	15		9	15		9	15		9
Turn Type	Perm	NA	Perm	Perm	NA	Perm	Perm	NA		Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4		4	8		8	2			6		
Minimum Split (s)	17.0	17.0	17.0	17.0	17.0	17.0	21.0	21.0		21.0	21.0	
Total Split (s)	66.0	66.0	66.0	66.0	66.0	66.0	24.0	24.0		24.0	24.0	
Total Split (%)	73.3%	73.3%	73.3%	73.3%	73.3%	73.3%	26.7%	26.7%		26.7%	26.7%	
Yellow Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0		1.0	1.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0		0.0			0.0	
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0		4.0			4.0	
Lead/Lag												
Lead-Lag Optimize?												
Act Effect Green (s)	62.0	62.0	62.0	62.0	62.0	62.0		20.0			20.0	
Actuated g/C Ratio	0.69	0.69	0.69	0.69	0.69	0.69		0.22			0.22	
v/c Ratio	0.06	0.67	0.03	0.07	0.57	0.03		0.49			0.49	
Control Delay	5.0	12.4	3.2	2.4	9.3	1.1		34.4			34.4	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0		0.0			0.0	
Total Delay	5.0	12.4	3.2	2.4	9.3	1.1		34.4			34.4	
LOS	A	B	A	A	A	A		C			C	
Approach Delay		11.7			8.6			34.4			34.4	
Approach LOS		B			A			C			C	
Queue Length 50th (ft)	4	188	2	3	251	2		76			76	

Lanes, Volumes, Timings  
6: Morgan Street & 79th Street

11/22/2017



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Queue Length 95th (ft)	13	307	10	m4	m275	m2		139			139	
Internal Link Dist (ft)		243			1241			513			579	
Turn Bay Length (ft)	100		30	100		30						
Base Capacity (vph)	431	984	933	364	974	934		333			333	
Starvation Cap Reductn	0	0	0	0	0	0		0			0	
Spillback Cap Reductn	0	0	0	0	0	0		0			0	
Storage Cap Reductn	0	0	0	0	0	0		0			0	
Reduced v/c Ratio	0.06	0.67	0.03	0.07	0.57	0.03		0.49			0.49	

Intersection Summary

Area Type: CBD  
 Cycle Length: 90  
 Actuated Cycle Length: 90  
 Offset: 57 (63%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green  
 Natural Cycle: 60  
 Control Type: Pretimed  
 Maximum v/c Ratio: 0.67  
 Intersection Signal Delay: 15.1  
 Intersection LOS: B  
 Intersection Capacity Utilization 58.3%  
 ICU Level of Service B  
 Analysis Period (min) 15  
 m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 6: Morgan Street & 79th Street



Lanes, Volumes, Timings  
7: Halsted Street & 79th Street

11/22/2017

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	45	541	71	33	453	39	67	501	57	31	236	40
Future Volume (vph)	45	541	71	33	453	39	67	501	57	31	236	40
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Width (ft)	9	10	9	9	10	9	10	11	13	10	10	13
Storage Length (ft)	100		30	60		30	100		100	100		100
Storage Lanes	1		1	1		1	1		1	1		1
Taper Length (ft)	25			25			25			25		
Satd. Flow (prot)	1385	1237	1215	1385	1221	1203	1436	1520	1368	1395	1426	1355
Flt Permitted	0.352			0.276			0.517			0.212		
Satd. Flow (perm)	513	1237	1215	402	1221	1203	782	1520	1368	311	1426	1355
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			48			48			48			48
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		1321			665			631			665	
Travel Time (s)		30.0			15.1			14.3			15.1	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	0%	10%	2%	0%	9%	3%	0%	3%	4%	3%	6%	5%
Parking (#/hr)		0			4							
Shared Lane Traffic (%)												
Lane Group Flow (vph)	49	588	77	36	492	42	73	545	62	34	257	43
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			10			10	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.39	1.52	1.39	1.39	1.56	1.39	1.33	1.28	1.18	1.33	1.33	1.18
Turning Speed (mph)	15		9	15		9	15		9	15		9
Turn Type	Perm	NA	Perm	Perm	NA	Perm	Perm	NA	Perm	Perm	NA	Perm
Protected Phases		4			8			2			6	
Permitted Phases	4		4	8		8	2		2	6		6
Minimum Split (s)	30.0	30.0	30.0	30.0	30.0	30.0	27.0	27.0	27.0	27.0	27.0	27.0
Total Split (s)	50.0	50.0	50.0	50.0	50.0	50.0	40.0	40.0	40.0	40.0	40.0	40.0
Total Split (%)	55.6%	55.6%	55.6%	55.6%	55.6%	55.6%	44.4%	44.4%	44.4%	44.4%	44.4%	44.4%
Yellow Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
All-Red Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lost Time Adjust (s)	-3.0	-3.0	-3.0	-3.0	-3.0	-3.0	-3.0	-3.0	-3.0	-3.0	-3.0	-3.0
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lead/Lag												
Lead-Lag Optimize?												
Act Effct Green (s)	46.0	46.0	46.0	46.0	46.0	46.0	36.0	36.0	36.0	36.0	36.0	36.0
Actuated g/C Ratio	0.51	0.51	0.51	0.51	0.51	0.51	0.40	0.40	0.40	0.40	0.40	0.40
v/c Ratio	0.19	0.93	0.12	0.18	0.79	0.07	0.23	0.90	0.11	0.27	0.45	0.08
Control Delay	9.2	38.2	3.3	14.6	29.3	3.4	20.4	45.3	7.5	25.5	23.0	5.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	9.2	38.2	3.3	14.6	29.3	3.4	20.4	45.3	7.5	25.5	23.0	5.1
LOS	A	D	A	B	C	A	C	D	A	C	C	A
Approach Delay		32.4			26.5			39.2			20.9	



Lanes, Volumes, Timings  
 7: Halsted Street & 79th Street

11/22/2017

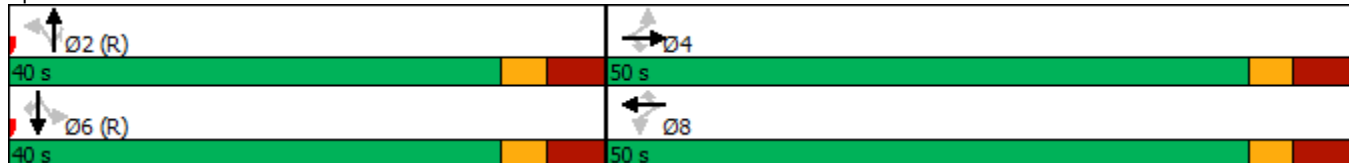


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Approach LOS	C			C			D			C		
Queue Length 50th (ft)	14	326	10	10	218	0	27	283	5	13	105	0
Queue Length 95th (ft)	m18	#547	m13	30	#405	14	60	#484	29	40	174	18
Internal Link Dist (ft)	1241			585			551			585		
Turn Bay Length (ft)	100		30	60		30	100		100	100		100
Base Capacity (vph)	262	632	644	205	624	638	312	608	576	124	570	570
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.19	0.93	0.12	0.18	0.79	0.07	0.23	0.90	0.11	0.27	0.45	0.08

Intersection Summary

Area Type: CBD  
 Cycle Length: 90  
 Actuated Cycle Length: 90  
 Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green  
 Natural Cycle: 75  
 Control Type: Pretimed  
 Maximum v/c Ratio: 0.93  
 Intersection Signal Delay: 31.3 Intersection LOS: C  
 Intersection Capacity Utilization 101.5% ICU Level of Service G  
 Analysis Period (min) 15  
 # 95th percentile volume exceeds capacity, queue may be longer.  
 Queue shown is maximum after two cycles.  
 m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 7: Halsted Street & 79th Street



Lanes, Volumes, Timings  
8: 79th Street & 150 W.

11/22/2017



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Volume (vph)	10	817	10	10	492	10	10	10	10	10	10	10
Future Volume (vph)	10	817	10	10	492	10	10	10	10	10	10	10
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Satd. Flow (prot)	0	1425	0	0	1424	0	0	1492	0	0	1492	0
Flt Permitted		0.994			0.983			0.931			0.931	
Satd. Flow (perm)	0	1418	0	0	1401	0	0	1412	0	0	1412	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		2			3			11			11	
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		558			495			173			227	
Travel Time (s)		12.7			11.3			3.9			5.2	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Parking (#/hr)		0			0							
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	910	0	0	557	0	0	33	0	0	33	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			0			0	
Link Offset(ft)		0			0			0			-30	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.22	1.39	1.22	1.22	1.39	1.22	1.22	1.22	1.22	1.22	1.22	1.22
Turning Speed (mph)	15		9	15		9	15		9	15		9
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Minimum Split (s)	9.0	9.0		9.0	9.0		21.0	21.0		21.0	21.0	
Total Split (s)	69.0	69.0		69.0	69.0		21.0	21.0		21.0	21.0	
Total Split (%)	76.7%	76.7%		76.7%	76.7%		23.3%	23.3%		23.3%	23.3%	
Yellow Time (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
All-Red Time (s)	1.0	1.0		1.0	1.0		1.0	1.0		1.0	1.0	
Lost Time Adjust (s)		0.0			0.0			0.0			0.0	
Total Lost Time (s)		4.0			4.0			4.0			4.0	
Lead/Lag												
Lead-Lag Optimize?												
Act Effct Green (s)		65.0			65.0			17.0			17.0	
Actuated g/C Ratio		0.72			0.72			0.19			0.19	
v/c Ratio		0.89			0.55			0.12			0.12	
Control Delay		22.9			9.0			24.1			24.1	
Queue Delay		0.0			0.0			0.0			0.0	
Total Delay		22.9			9.0			24.1			24.1	
LOS		C			A			C			C	
Approach Delay		22.9			9.0			24.1			24.1	
Approach LOS		C			A			C			C	
Queue Length 50th (ft)		335			85			10			10	
Queue Length 95th (ft)		#707			136			36			36	
Internal Link Dist (ft)		478			415			93			147	
Turn Bay Length (ft)												

Lanes, Volumes, Timings  
 8: 79th Street & 150 W.

11/22/2017



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Base Capacity (vph)		1024			1012			275			275	
Starvation Cap Reductn		0			0			0			0	
Spillback Cap Reductn		0			0			0			0	
Storage Cap Reductn		0			0			0			0	
Reduced v/c Ratio		0.89			0.55			0.12			0.12	

Intersection Summary

Area Type:	CBD
Cycle Length:	90
Actuated Cycle Length:	90
Offset:	55 (61%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
Natural Cycle:	80
Control Type:	Pretimed
Maximum v/c Ratio:	0.89
Intersection Signal Delay:	17.9
Intersection LOS:	B
Intersection Capacity Utilization	77.9%
ICU Level of Service	D
Analysis Period (min)	15
# 95th percentile volume exceeds capacity, queue may be longer. Queue shown is maximum after two cycles.	

Splits and Phases: 8: 79th Street & 150 W.



Lanes, Volumes, Timings  
 9: Lafayette Avenue & 79th Street

11/22/2017



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑↑↑		↖	↑↑					↘	↑↑↑↑	↗
Traffic Volume (vph)	0	646	191	219	383	0	0	0	0	268	203	129
Future Volume (vph)	0	646	191	219	383	0	0	0	0	268	203	129
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Width (ft)	11	11	11	12	12	12	12	12	12	12	10	8
Storage Length (ft)	100		0	0		0	0		0	0		0
Storage Lanes	2		0	1		0	0		0	1		1
Taper Length (ft)	25			25			25			25		
Satd. Flow (prot)	0	4357	0	1494	2509	0	0	0	0	1203	3553	978
Flt Permitted				0.178						0.950	0.980	
Satd. Flow (perm)	0	4357	0	267	2509	0	0	0	0	1203	3553	948
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		88										140
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		330			322			703			664	
Travel Time (s)		7.5			7.3			16.0			15.1	
Confl. Peds. (#/hr)	5		130	130		5	20					20
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	2%	9%	19%	3%	8%	2%	2%	2%	2%	10%	6%	22%
Bus Blockages (#/hr)	0	0	0	0	15	0	0	0	0	0	0	0
Parking (#/hr)					17							
Shared Lane Traffic (%)										50%		
Lane Group Flow (vph)	0	910	0	238	416	0	0	0	0	145	367	140
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.28	1.28	1.28	1.22	1.43	1.22	1.22	1.22	1.22	1.22	1.33	1.46
Turning Speed (mph)	15		9	15		9	15		9	15		9
Turn Type		NA		pm+pt	NA					Perm	NA	Perm
Protected Phases		4		3	8						6	
Permitted Phases				8						6		6
Minimum Split (s)		20.0		8.0	26.0					33.0	33.0	33.0
Total Split (s)		33.0		23.0	56.0					34.0	34.0	34.0
Total Split (%)		36.7%		25.6%	62.2%					37.8%	37.8%	37.8%
Yellow Time (s)		3.0		3.0	3.0					3.0	3.0	3.0
All-Red Time (s)		5.0		0.0	5.0					2.0	2.0	2.0
Lost Time Adjust (s)		-4.0		1.0	-4.0					-1.0	-1.0	-1.0
Total Lost Time (s)		4.0		4.0	4.0					4.0	4.0	4.0
Lead/Lag		Lag		Lead								
Lead-Lag Optimize?												
Act Effct Green (s)		29.0		52.0	52.0					30.0	30.0	30.0
Actuated g/C Ratio		0.32		0.58	0.58					0.33	0.33	0.33
v/c Ratio		0.62		0.58	0.29					0.36	0.31	0.34
Control Delay		17.0		14.6	6.1					26.0	23.2	6.6
Queue Delay		0.0		0.0	0.0					0.0	0.0	0.0
Total Delay		17.0		14.6	6.1					26.0	23.2	6.6

Lanes, Volumes, Timings  
 9: Lafayette Avenue & 79th Street

11/22/2017

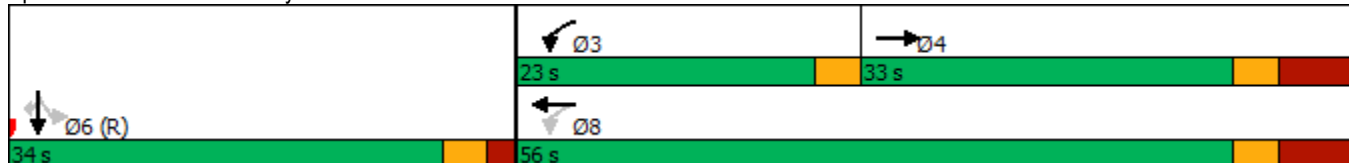


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
LOS		B		B	A					C	C	A
Approach Delay		17.0			9.2						20.3	
Approach LOS		B			A						C	
Queue Length 50th (ft)		93		82	75					72	59	0
Queue Length 95th (ft)		m113		m152	m106					132	86	41
Internal Link Dist (ft)		250			242			623			584	
Turn Bay Length (ft)												
Base Capacity (vph)		1463		413	1449					401	1184	409
Starvation Cap Reductn		0		0	0					0	0	0
Spillback Cap Reductn		0		0	0					0	0	0
Storage Cap Reductn		0		0	0					0	0	0
Reduced v/c Ratio		0.62		0.58	0.29					0.36	0.31	0.34

Intersection Summary

Area Type: CBD  
 Cycle Length: 90  
 Actuated Cycle Length: 90  
 Offset: 61 (68%), Referenced to phase 6:SBTL, Start of Green  
 Natural Cycle: 65  
 Control Type: Pretimed  
 Maximum v/c Ratio: 0.62  
 Intersection Signal Delay: 15.6  
 Intersection LOS: B  
 Intersection Capacity Utilization 70.1%  
 ICU Level of Service C  
 Analysis Period (min) 15  
 m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 9: Lafayette Avenue & 79th Street



# Lanes, Volumes, Timings

## 10: State Street & 79th Street

11/22/2017



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖↖	↗↗			↖↖↖	↗	↖	↖↖	↗			
Traffic Volume (vph)	456	458	0	0	373	169	229	1016	96	0	0	0
Future Volume (vph)	456	458	0	0	373	169	229	1016	96	0	0	0
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Width (ft)	12	12	12	12	12	12	12	11	16	12	12	12
Storage Length (ft)	0		0	200		100	0		0	0		0
Storage Lanes	2		0	1		1	1		1	0		0
Taper Length (ft)	25			25			25			25		
Satd. Flow (prot)	2927	2583	0	0	4336	1350	1373	2791	1530	0	0	0
Flt Permitted	0.950						0.950	0.999				
Satd. Flow (perm)	2493	2583	0	0	4336	1125	1362	2791	1302	0	0	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)						61			97			
Link Speed (mph)		30			30			30				30
Link Distance (ft)		322			463			683				659
Travel Time (s)		7.3			10.5			15.5				15.0
Confl. Peds. (#/hr)	82		240	240		82	8		145	145		8
Peak Hour Factor	0.89	0.90	0.92	0.92	0.90	0.78	0.91	0.95	0.78	0.92	0.92	0.92
Bus Blockages (#/hr)	0	15	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)		27										
Shared Lane Traffic (%)							10%					
Lane Group Flow (vph)	512	509	0	0	414	217	227	1094	123	0	0	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		24			24			12				12
Link Offset(ft)		0			0			0				0
Crosswalk Width(ft)		16			16			16				16
Two way Left Turn Lane												
Headway Factor	1.22	1.48	1.22	1.22	1.22	1.22	1.22	1.28	1.05	1.22	1.22	1.22
Turning Speed (mph)	15		9	15		9	15		9	15		9
Turn Type	Prot	NA			NA	Perm	Perm	NA	Perm			
Protected Phases	7	4			8			2				
Permitted Phases						8	2		2			
Minimum Split (s)	8.0	26.0			22.0	22.0	33.0	33.0	33.0			
Total Split (s)	20.0	48.0			28.0	28.0	42.0	42.0	42.0			
Total Split (%)	22.2%	53.3%			31.1%	31.1%	46.7%	46.7%	46.7%			
Yellow Time (s)	3.0	3.0			3.0	3.0	3.0	3.0	3.0			
All-Red Time (s)	0.0	5.0			5.0	5.0	2.0	2.0	2.0			
Lost Time Adjust (s)	1.0	-4.0			-4.0	-4.0	-1.0	-1.0	-1.0			
Total Lost Time (s)	4.0	4.0			4.0	4.0	4.0	4.0	4.0			
Lead/Lag	Lead				Lag	Lag						
Lead-Lag Optimize?												
Act Effct Green (s)	16.0	44.0			24.0	24.0	38.0	38.0	38.0			
Actuated g/C Ratio	0.18	0.49			0.27	0.27	0.42	0.42	0.42			
v/c Ratio	0.98	0.40			0.36	0.63	0.39	0.93	0.20			
Control Delay	59.8	15.9			27.8	30.0	20.6	39.7	6.2			
Queue Delay	0.0	0.6			0.0	0.0	0.0	0.0	0.0			
Total Delay	59.8	16.5			27.8	30.0	20.6	39.7	6.2			
LOS	E	B			C	C	C	D	A			

Lanes, Volumes, Timings  
 10: State Street & 79th Street

11/22/2017

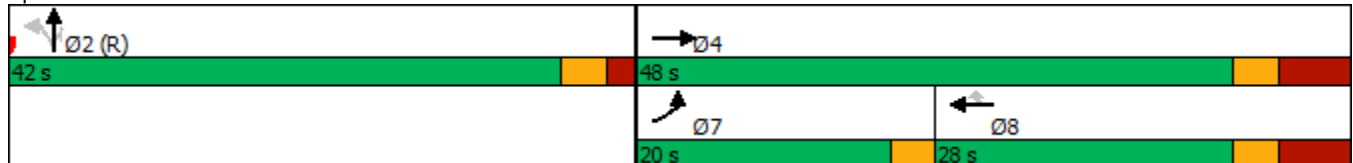


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Approach Delay		38.2			28.6			33.9				
Approach LOS		D			C			C				
Queue Length 50th (ft)	128	113			69	77	95	316	9			
Queue Length 95th (ft)	#243	164			98	125	162	#462	31			
Internal Link Dist (ft)		242			383			603			579	
Turn Bay Length (ft)						100						
Base Capacity (vph)	520	1262			1156	344	575	1178	605			
Starvation Cap Reductn	0	409			0	0	0	0	0			
Spillback Cap Reductn	0	0			0	0	0	0	0			
Storage Cap Reductn	0	0			0	0	0	0	0			
Reduced v/c Ratio	0.98	0.60			0.36	0.63	0.39	0.93	0.20			

Intersection Summary

Area Type: CBD  
 Cycle Length: 90  
 Actuated Cycle Length: 90  
 Offset: 18 (20%), Referenced to phase 2:NBTL, Start of Green  
 Natural Cycle: 80  
 Control Type: Pretimed  
 Maximum v/c Ratio: 0.98  
 Intersection Signal Delay: 34.2  
 Intersection LOS: C  
 Intersection Capacity Utilization 70.1%  
 ICU Level of Service C  
 Analysis Period (min) 15  
 # 95th percentile volume exceeds capacity, queue may be longer.  
 Queue shown is maximum after two cycles.

Splits and Phases: 10: State Street & 79th Street



Lanes, Volumes, Timings  
 11: Indiana Avenue & 79th Street

11/22/2017



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑	↗		↖						↕	
Traffic Volume (vph)	0	466	88	25	473	0	0	0	0	25	25	69
Future Volume (vph)	0	466	88	25	473	0	0	0	0	25	25	69
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (ft)	0		30	0		0	0		0	0		0
Storage Lanes	0		1	0		0	0		0	0		0
Taper Length (ft)	25			25			25			25		
Satd. Flow (prot)	0	1429	1339	0	1427	0	0	0	0	0	1450	0
Flt Permitted					0.967						0.990	
Satd. Flow (perm)	0	1429	1339	0	1382	0	0	0	0	0	1450	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			65									75
Link Speed (mph)		30			30			30				30
Link Distance (ft)		869			1306			672				662
Travel Time (s)		19.8			29.7			15.3				15.0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Bus Blockages (#/hr)	0	0	2	0	0	0	0	0	0	0	0	0
Parking (#/hr)		0			0							
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	507	96	0	541	0	0	0	0	0	129	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		10			10			0				0
Link Offset(ft)		0			0			0				0
Crosswalk Width(ft)		16			16			16				16
Two way Left Turn Lane												
Headway Factor	1.22	1.39	1.24	1.22	1.39	1.22	1.22	1.22	1.22	1.22	1.22	1.22
Turning Speed (mph)	15		9	15		9	15		9	15		9
Turn Type		NA	Perm	Perm	NA					Perm	NA	
Protected Phases		4			8							6
Permitted Phases			4	8						6		
Minimum Split (s)		18.0	18.0	18.0	18.0					19.0	19.0	
Total Split (s)		41.0	41.0	41.0	41.0					19.0	19.0	
Total Split (%)		68.3%	68.3%	68.3%	68.3%					31.7%	31.7%	
Yellow Time (s)		3.0	3.0	3.0	3.0					3.0	3.0	
All-Red Time (s)		2.0	2.0	2.0	2.0					1.0	1.0	
Lost Time Adjust (s)		-1.0	-1.0		-1.0							0.0
Total Lost Time (s)		4.0	4.0		4.0							4.0
Lead/Lag												
Lead-Lag Optimize?												
Act Effct Green (s)		37.0	37.0		37.0							15.0
Actuated g/C Ratio		0.62	0.62		0.62							0.25
v/c Ratio		0.58	0.11		0.63							0.31
Control Delay		10.1	2.5		4.8							11.4
Queue Delay		0.0	0.0		0.0							0.0
Total Delay		10.1	2.5		4.8							11.4
LOS		B	A		A							B
Approach Delay		8.9			4.8							11.4
Approach LOS		A			A							B



Lanes, Volumes, Timings  
 11: Indiana Avenue & 79th Street

11/22/2017



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Queue Length 50th (ft)		93	4		19							15
Queue Length 95th (ft)		170	18		m34							53
Internal Link Dist (ft)		789			1226			592				582
Turn Bay Length (ft)			30									
Base Capacity (vph)		881	850		852							418
Starvation Cap Reductn		0	0		0							0
Spillback Cap Reductn		0	0		0							0
Storage Cap Reductn		0	0		0							0
Reduced v/c Ratio		0.58	0.11		0.63							0.31

Intersection Summary

























Area Type: CBD  
 Cycle Length: 60  
 Actuated Cycle Length: 60  
 Offset: 53 (88%), Referenced to phase 6:SBTL, Start of Green  
 Natural Cycle: 55  
 Control Type: Pretimed  
 Maximum v/c Ratio: 0.63  
 Intersection Signal Delay: 7.4  
 Intersection LOS: A  
 Intersection Capacity Utilization 72.3%  
 ICU Level of Service C  
 Analysis Period (min) 15  
 m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 11: Indiana Avenue & 79th Street



Lanes, Volumes, Timings  
12: King Dr & 79th Street

11/22/2017

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	42	366	83	57	367	49	97	342	60	50	270	34
Future Volume (vph)	42	366	83	57	367	49	97	342	60	50	270	34
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Width (ft)	10	10	10	10	10	10	10	10	10	10	10	10
Storage Length (ft)	75		30	60		30	60		30	50		50
Storage Lanes	1		1	1		1	1		1	1		1
Taper Length (ft)	25			25			25			25		
Satd. Flow (prot)	1408	1282	1260	1408	1275	1260	1408	1482	1260	1408	1482	1260
Flt Permitted	0.390			0.391			0.384			0.540		
Satd. Flow (perm)	549	1282	1097	548	1275	1106	553	1482	1126	758	1482	1168
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			73			73			43			91
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		1306			1324			671			675	
Travel Time (s)		29.7			30.1			15.3			15.3	
Confl. Peds. (#/hr)	73		78	78		73	36		59	59		36
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Parking (#/hr)		7			8							
Shared Lane Traffic (%)												
Lane Group Flow (vph)	46	398	90	62	399	53	105	372	65	54	293	37
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		10			10			10			10	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.33	1.59	1.33	1.33	1.60	1.33	1.33	1.33	1.33	1.33	1.33	1.33
Turning Speed (mph)	15		9	15		9	15		9	15		9
Turn Type	Perm	NA	Perm	Perm	NA	Perm	pm+pt	NA	Perm	Perm	NA	Perm
Protected Phases		4			8		5	2			6	
Permitted Phases	4		4	8		8	2		2	6		6
Minimum Split (s)	26.0	26.0	26.0	26.0	26.0	26.0	8.0	24.0	24.0	24.0	24.0	24.0
Total Split (s)	28.0	28.0	28.0	28.0	28.0	28.0	8.0	32.0	32.0	24.0	24.0	24.0
Total Split (%)	46.7%	46.7%	46.7%	46.7%	46.7%	46.7%	13.3%	53.3%	53.3%	40.0%	40.0%	40.0%
Yellow Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	0.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0	1.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lead/Lag							Lead			Lag	Lag	Lag
Lead-Lag Optimize?												
Act Effct Green (s)	24.0	24.0	24.0	24.0	24.0	24.0	28.0	28.0	28.0	20.0	20.0	20.0
Actuated g/C Ratio	0.40	0.40	0.40	0.40	0.40	0.40	0.47	0.47	0.47	0.33	0.33	0.33
v/c Ratio	0.21	0.78	0.19	0.28	0.78	0.11	0.33	0.54	0.12	0.21	0.59	0.08
Control Delay	8.1	21.0	1.7	9.5	22.1	1.1	12.5	15.0	5.3	17.1	22.6	0.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	8.1	21.0	1.7	9.5	22.1	1.1	12.5	15.0	5.3	17.1	22.6	0.7
LOS	A	C	A	A	C	A	B	B	A	B	C	A
Approach Delay		16.6			18.4			13.4			19.7	

Lanes, Volumes, Timings  
12: King Dr & 79th Street

11/22/2017

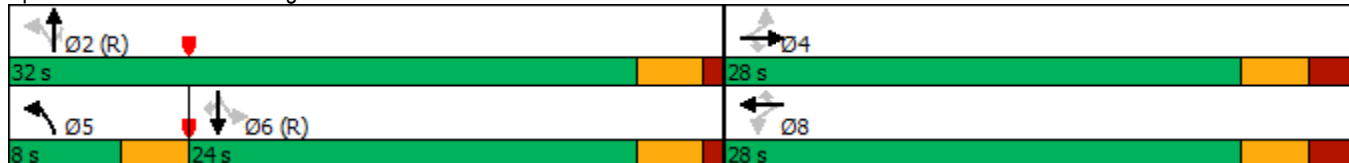


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Approach LOS	B			B			B			B		
Queue Length 50th (ft)	3	103	0	7	124	1	20	90	4	14	86	0
Queue Length 95th (ft)	m6	#260	m2	m14	#263	m1	45	161	22	38	158	3
Internal Link Dist (ft)	1226			1244			591			595		
Turn Bay Length (ft)	75		30	60		30	60		30	50		50
Base Capacity (vph)	219	512	482	219	510	486	315	691	548	252	494	450
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.21	0.78	0.19	0.28	0.78	0.11	0.33	0.54	0.12	0.21	0.59	0.08

Intersection Summary

Area Type: CBD  
 Cycle Length: 60  
 Actuated Cycle Length: 60  
 Offset: 22 (37%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green  
 Natural Cycle: 60  
 Control Type: Pretimed  
 Maximum v/c Ratio: 0.78  
 Intersection Signal Delay: 16.8 Intersection LOS: B  
 Intersection Capacity Utilization 91.3% ICU Level of Service F  
 Analysis Period (min) 15  
 # 95th percentile volume exceeds capacity, queue may be longer.  
 Queue shown is maximum after two cycles.  
 m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 12: King Dr & 79th Street



Lanes, Volumes, Timings  
13: St Lawrence Avenue & 79th Street

11/22/2017



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↑	↗		↕				
Traffic Volume (vph)	25	451	0	0	448	25	25	100	25	0	0	0
Future Volume (vph)	25	451	0	0	448	25	25	100	25	0	0	0
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (ft)	0		30	0		30	0		0	0		0
Storage Lanes	0		0	0		1	0		0	0		0
Taper Length (ft)	25			25			25			25		
Satd. Flow (prot)	0	1425	0	0	1429	1350	0	1541	0	0	0	0
Flt Permitted		0.968						0.992				
Satd. Flow (perm)	0	1384	0	0	1429	1350	0	1541	0	0	0	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)						19		16				
Link Speed (mph)		30			30			30				30
Link Distance (ft)		1324			660			692				656
Travel Time (s)		30.1			15.0			15.7				14.9
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Parking (#/hr)		0			0							
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	517	0	0	487	27	0	163	0	0	0	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		10			10			0				0
Link Offset(ft)		0			0			0				0
Crosswalk Width(ft)		16			16			16				16
Two way Left Turn Lane												
Headway Factor	1.22	1.39	1.22	1.22	1.39	1.22	1.22	1.22	1.22	1.22	1.22	1.22
Turning Speed (mph)	15		9	15		9	15		9	15		9
Turn Type	Perm	NA			NA	Perm	Perm	NA				
Protected Phases		4			8			2				
Permitted Phases	4					8	2					
Minimum Split (s)	16.0	16.0			16.0	16.0	17.0	17.0				
Total Split (s)	41.0	41.0			41.0	41.0	19.0	19.0				
Total Split (%)	68.3%	68.3%			68.3%	68.3%	31.7%	31.7%				
Yellow Time (s)	3.0	3.0			3.0	3.0	3.0	3.0				
All-Red Time (s)	1.0	1.0			1.0	1.0	1.0	1.0				
Lost Time Adjust (s)		0.0			0.0	0.0		0.0				
Total Lost Time (s)		4.0			4.0	4.0		4.0				
Lead/Lag												
Lead-Lag Optimize?												
Act Effct Green (s)		37.0			37.0	37.0		15.0				
Actuated g/C Ratio		0.62			0.62	0.62		0.25				
v/c Ratio		0.61			0.55	0.03		0.41				
Control Delay		4.8			9.7	2.8		20.6				
Queue Delay		0.0			0.0	0.0		0.0				
Total Delay		4.8			9.7	2.8		20.6				
LOS		A			A	A		C				
Approach Delay		4.8			9.3			20.6				
Approach LOS		A			A			C				
Queue Length 50th (ft)		30			87	1		44				

Lanes, Volumes, Timings  
 13: St Lawrence Avenue & 79th Street

11/22/2017



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Queue Length 95th (ft)		m46			158	8		92				
Internal Link Dist (ft)		1244			580			612			576	
Turn Bay Length (ft)						30						
Base Capacity (vph)		853			881	839		397				
Starvation Cap Reductn		0			0	0		0				
Spillback Cap Reductn		0			0	0		0				
Storage Cap Reductn		0			0	0		0				
Reduced v/c Ratio		0.61			0.55	0.03		0.41				

Intersection Summary

Area Type: CBD  
 Cycle Length: 60  
 Actuated Cycle Length: 60  
 Offset: 50 (83%), Referenced to phase 2:NBTL, Start of Green  
 Natural Cycle: 45  
 Control Type: Pretimed  
 Maximum v/c Ratio: 0.61  
 Intersection Signal Delay: 8.9 Intersection LOS: A  
 Intersection Capacity Utilization 69.3% ICU Level of Service C  
 Analysis Period (min) 15  
 m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 13: St Lawrence Avenue & 79th Street



Lanes, Volumes, Timings  
 14: Kenwood Avenue & 79th Street

11/22/2017



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔			↔						↔	
Traffic Volume (vph)	0	191	25	25	248	0	0	0	0	25	100	25
Future Volume (vph)	0	191	25	25	248	0	0	0	0	25	100	25
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Satd. Flow (prot)	0	1407	0	0	1580	0	0	0	0	0	1541	0
Flt Permitted					0.964						0.992	
Satd. Flow (perm)	0	1407	0	0	1531	0	0	0	0	0	1541	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		21									27	
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		351			1665			668			659	
Travel Time (s)		8.0			37.8			15.2			15.0	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Parking (#/hr)		0										
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	235	0	0	297	0	0	0	0	0	163	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.22	1.39	1.22	1.22	1.22	1.22	1.22	1.22	1.22	1.22	1.22	1.22
Turning Speed (mph)	15		9	15		9	15		9	15		9
Turn Type		NA		Perm	NA					Perm	NA	
Protected Phases		4			8						6	
Permitted Phases				8						6		
Minimum Split (s)		16.0		16.0	16.0					17.0	17.0	
Total Split (s)		22.0		22.0	22.0					18.0	18.0	
Total Split (%)		55.0%		55.0%	55.0%					45.0%	45.0%	
Yellow Time (s)		3.0		3.0	3.0					3.0	3.0	
All-Red Time (s)		1.0		1.0	1.0					1.0	1.0	
Lost Time Adjust (s)		0.0			0.0						0.0	
Total Lost Time (s)		4.0			4.0						4.0	
Lead/Lag												
Lead-Lag Optimize?												
Act Effct Green (s)		18.0			18.0						14.0	
Actuated g/C Ratio		0.45			0.45						0.35	
v/c Ratio		0.36			0.43						0.29	
Control Delay		8.6			10.0						9.8	
Queue Delay		0.0			0.0						0.0	
Total Delay		8.6			10.0						9.8	
LOS		A			A						A	
Approach Delay		8.6			10.0						9.8	
Approach LOS		A			A						A	
Queue Length 50th (ft)		28			41						21	
Queue Length 95th (ft)		64			85						52	
Internal Link Dist (ft)		271			1585			588			579	
Turn Bay Length (ft)												

Lanes, Volumes, Timings  
 14: Kenwood Avenue & 79th Street

11/22/2017

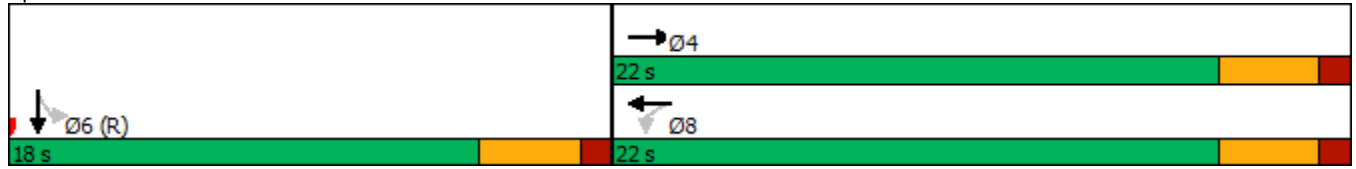


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Base Capacity (vph)		644			688							556
Starvation Cap Reductn		0			0							0
Spillback Cap Reductn		0			0							0
Storage Cap Reductn		0			0							0
Reduced v/c Ratio		0.36			0.43							0.29

Intersection Summary

Area Type:	CBD
Cycle Length:	40
Actuated Cycle Length:	40
Offset:	0 (0%), Referenced to phase 6:SBTL, Start of Green
Natural Cycle:	40
Control Type:	Pretimed
Maximum v/c Ratio:	0.43
Intersection Signal Delay:	9.5
Intersection LOS:	A
Intersection Capacity Utilization	51.3%
ICU Level of Service	A
Analysis Period (min)	15

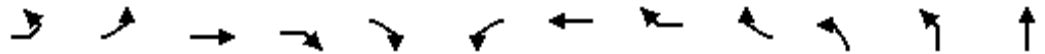
Splits and Phases: 14: Kenwood Avenue & 79th Street



Lanes, Volumes, Timings

15: Stony Island Avenue & South Chicago Avenue & 79th Street

11/22/2017






















Lane Group	EBL2	EBL	EBT	EBR	EBR2	WBL	WBT	WBR	WBR2	NBL2	NBL	NBT
Lane Configurations												
Traffic Volume (vph)	1	26	155	25	9	114	183	59	34	13	150	1346
Future Volume (vph)	1	26	155	25	9	114	183	59	34	13	150	1346
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (ft)		100		100		175		150			90	
Storage Lanes		1		1		1		1			1	
Taper Length (ft)		25				25					25	
Satd. Flow (prot)	0	1509	1588	1350	0	1509	1588	1350	0	0	1509	4336
Flt Permitted		0.366				0.448					0.950	
Satd. Flow (perm)	0	581	1588	1350	0	712	1588	1350	0	0	1509	4336
Right Turn on Red					Yes				Yes			
Satd. Flow (RTOR)				152				152				
Link Speed (mph)			30				30					30
Link Distance (ft)			1665				377					254
Travel Time (s)			37.8				8.6					5.8
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	28	163	35	0	120	193	98	0	0	172	1417
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Right	Left	Left	Right	Right	Left	Left	Left
Median Width(ft)			12				12					12
Link Offset(ft)			0				0					0
Crosswalk Width(ft)			16				16					16
Two way Left Turn Lane												
Headway Factor	1.22	1.22	1.22	1.22	1.22	1.22	1.22	1.22	1.22	1.22	1.22	1.22
Turning Speed (mph)	15	15		9	9	15		9	9	15	15	
Turn Type	Perm	Perm	NA	Perm		Perm	NA	Perm		Prot	Prot	NA
Protected Phases			4				8			5	5	2
Permitted Phases	4	4		4		8		8				
Minimum Split (s)	21.0	21.0	21.0	21.0		21.0	21.0	21.0		8.0	8.0	34.0
Total Split (s)	22.0	22.0	22.0	22.0		22.0	22.0	22.0		17.0	17.0	50.0
Total Split (%)	19.1%	19.1%	19.1%	19.1%		19.1%	19.1%	19.1%		14.8%	14.8%	43.5%
Yellow Time (s)	3.0	3.0	3.0	3.0		3.0	3.0	3.0		3.0	3.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0		2.0	2.0	2.0		0.0	0.0	3.0
Lost Time Adjust (s)		-1.0	-1.0	-1.0		-1.0	-1.0	-1.0			1.0	-3.0
Total Lost Time (s)		4.0	4.0	4.0		4.0	4.0	4.0			4.0	4.0
Lead/Lag										Lead	Lead	Lag
Lead-Lag Optimize?												
Act Effct Green (s)		18.0	18.0	18.0		18.0	18.0	18.0			13.0	46.0
Actuated g/C Ratio		0.16	0.16	0.16		0.16	0.16	0.16			0.11	0.40
v/c Ratio		0.31	0.66	0.10		1.08	0.78	0.29			1.01	0.82
Control Delay		53.4	59.3	0.6		155.6	68.5	3.6			123.4	35.5
Queue Delay		0.0	0.0	0.0		0.0	0.0	0.0			0.0	0.0
Total Delay		53.4	59.3	0.6		155.6	68.5	3.6			123.4	35.5
LOS		D	E	A		F	E	A			F	D
Approach Delay			49.5				78.5					42.5
Approach LOS			D				E					D
Queue Length 50th (ft)		19	115	0		~99	139	0			~131	337
Queue Length 95th (ft)		50	#194	0		#221	#254	12			#276	401



Lanes, Volumes, Timings  
 15: Stony Island Avenue & South Chicago Avenue & 79th Street

11/22/2017

												
Lane Group	NBR	NBR2	SBL2	SBL	SBT	SBR	SBR2	SET	SER	SER2	NWT	NWR
Lane Configurations												
Traffic Volume (vph)	87	17	22	72	879	75	11	223	87	2	239	78
Future Volume (vph)	87	17	22	72	879	75	11	223	87	2	239	78
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (ft)	130			0		0			0			0
Storage Lanes	2			1		1			0			0
Taper Length (ft)				25								
Satd. Flow (prot)	1350	0	0	1509	4336	1350	0	2888	0	0	2903	0
Flt Permitted				0.950								
Satd. Flow (perm)	1350	0	0	1509	4336	1350	0	2888	0	0	2903	0
Right Turn on Red		Yes					Yes			Yes		
Satd. Flow (RTOR)	104					133						1
Link Speed (mph)					30			30				30
Link Distance (ft)					690			712				889
Travel Time (s)					15.7			16.2				20.2
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Shared Lane Traffic (%)												
Lane Group Flow (vph)	110	0	0	99	925	91	0	329	0	0	338	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Right	Right	Left	Left	Left	Right	Right	Left	Right	Right	Left	Right
Median Width(ft)					12			0				0
Link Offset(ft)					0			0				0
Crosswalk Width(ft)					16			16				16
Two way Left Turn Lane												
Headway Factor	1.22	1.22	1.22	1.22	1.22	1.22	1.22	1.22	1.22	1.22	1.22	1.22
Turning Speed (mph)	9	9	15	15		9	9		9	9		9
Turn Type	Perm		Prot	Prot	NA	Perm		NA				NA
Protected Phases			1	1	6			10				14
Permitted Phases	2					6						
Minimum Split (s)	34.0		8.0	8.0	45.0	45.0		31.0				31.0
Total Split (s)	50.0		12.0	12.0	45.0	45.0		31.0				31.0
Total Split (%)	43.5%		10.4%	10.4%	39.1%	39.1%		27.0%				27.0%
Yellow Time (s)	4.0		3.0	3.0	4.0	4.0		4.0				4.0
All-Red Time (s)	3.0		0.0	0.0	3.0	3.0		2.0				2.0
Lost Time Adjust (s)	-3.0			1.0	-3.0	-3.0		-2.0				-2.0
Total Lost Time (s)	4.0			4.0	4.0	4.0		4.0				4.0
Lead/Lag	Lag		Lead	Lead	Lag	Lag						
Lead-Lag Optimize?												
Act Effct Green (s)	46.0			8.0	41.0	41.0		27.0				27.0
Actuated g/C Ratio	0.40			0.07	0.36	0.36		0.23				0.23
v/c Ratio	0.18			0.95	0.60	0.16		0.49				0.50
Control Delay	5.6			130.2	32.2	2.0		40.9				40.9
Queue Delay	0.0			0.0	0.0	0.0		0.0				0.0
Total Delay	5.6			130.2	32.2	2.0		40.9				40.9
LOS	A			F	C	A		D				D
Approach Delay					38.5			40.9				40.9
Approach LOS					D			D				D
Queue Length 50th (ft)	3			74	203	0		111				114
Queue Length 95th (ft)	38			#184	250	14		157				161

Lanes, Volumes, Timings  
 15: Stony Island Avenue & South Chicago Avenue & 79th Street

11/22/2017

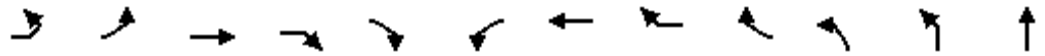


Lane Group	NWR2
Lane Configurations	
Traffic Volume (vph)	4
Future Volume (vph)	4
Ideal Flow (vphpl)	1800
Storage Length (ft)	
Storage Lanes	
Taper Length (ft)	
Satd. Flow (prot)	0
Flt Permitted	
Satd. Flow (perm)	0
Right Turn on Red	Yes
Satd. Flow (RTOR)	
Link Speed (mph)	
Link Distance (ft)	
Travel Time (s)	
Peak Hour Factor	0.95
Shared Lane Traffic (%)	
Lane Group Flow (vph)	0
Enter Blocked Intersection	No
Lane Alignment	Right
Median Width(ft)	
Link Offset(ft)	
Crosswalk Width(ft)	
Two way Left Turn Lane	
Headway Factor	1.22
Turning Speed (mph)	9
Turn Type	
Protected Phases	
Permitted Phases	
Minimum Split (s)	
Total Split (s)	
Total Split (%)	
Yellow Time (s)	
All-Red Time (s)	
Lost Time Adjust (s)	
Total Lost Time (s)	
Lead/Lag	
Lead-Lag Optimize?	
Act Effct Green (s)	
Actuated g/C Ratio	
v/c Ratio	
Control Delay	
Queue Delay	
Total Delay	
LOS	
Approach Delay	
Approach LOS	
Queue Length 50th (ft)	
Queue Length 95th (ft)	

Lanes, Volumes, Timings

15: Stony Island Avenue & South Chicago Avenue & 79th Street

11/22/2017

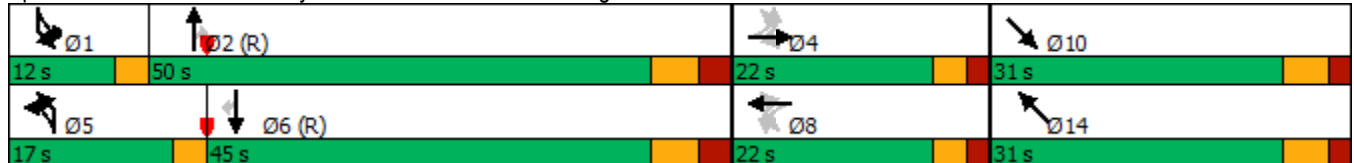


Lane Group	EBL2	EBL	EBT	EBR	EBR2	WBL	WBT	WBR	WBR2	NBL2	NBL	NBT
Internal Link Dist (ft)			1585				297					174
Turn Bay Length (ft)		100		100		175		150			90	
Base Capacity (vph)		90	248	339		111	248	339			170	1734
Starvation Cap Reductn		0	0	0		0	0	0			0	0
Spillback Cap Reductn		0	0	0		0	0	0			0	0
Storage Cap Reductn		0	0	0		0	0	0			0	0
Reduced v/c Ratio		0.31	0.66	0.10		1.08	0.78	0.29			1.01	0.82

Intersection Summary

Area Type: CBD  
 Cycle Length: 115  
 Actuated Cycle Length: 115  
 Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBT, Start of Green  
 Natural Cycle: 115  
 Control Type: Pretimed  
 Maximum v/c Ratio: 1.08  
 Intersection Signal Delay: 45.1  
 Intersection LOS: D  
 Intersection Capacity Utilization 106.4%  
 ICU Level of Service G  
 Analysis Period (min) 15  
 ~ Volume exceeds capacity, queue is theoretically infinite.  
 Queue shown is maximum after two cycles.  
 # 95th percentile volume exceeds capacity, queue may be longer.  
 Queue shown is maximum after two cycles.

Splits and Phases: 15: Stony Island Avenue & South Chicago Avenue & 79th Street



Lanes, Volumes, Timings

15: Stony Island Avenue & South Chicago Avenue & 79th Street

11/22/2017



Lane Group	NBR	NBR2	SBL2	SBL	SBT	SBR	SBR2	SET	SER	SER2	NWT	NWR
Internal Link Dist (ft)					610			632			809	
Turn Bay Length (ft)	130											
Base Capacity (vph)	602			104	1545	566		678			682	
Starvation Cap Reductn	0			0	0	0		0			0	
Spillback Cap Reductn	0			0	0	0		0			0	
Storage Cap Reductn	0			0	0	0		0			0	
Reduced v/c Ratio	0.18			0.95	0.60	0.16		0.49			0.50	

Intersection Summary



Lane Group	NWR2
Internal Link Dist (ft)	
Turn Bay Length (ft)	
Base Capacity (vph)	
Starvation Cap Reductn	
Spillback Cap Reductn	
Storage Cap Reductn	
Reduced v/c Ratio	
Intersection Summary	

Lanes, Volumes, Timings  
16: 79th Street & Cregier Avenue

11/22/2017



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕				
Traffic Volume (vph)	25	243	0	0	365	25	25	100	25	0	0	0
Future Volume (vph)	25	243	0	0	365	25	25	100	25	0	0	0
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Satd. Flow (prot)	0	1417	0	0	1574	0	0	1541	0	0	0	0
Flt Permitted		0.950						0.992				
Satd. Flow (perm)	0	1353	0	0	1574	0	0	1541	0	0	0	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)					9			18				
Link Speed (mph)		30			30			30				30
Link Distance (ft)		946			328			152				657
Travel Time (s)		21.5			7.5			3.5				14.9
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Bus Blockages (#/hr)	0	1	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)		0										
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	291	0	0	424	0	0	163	0	0	0	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			0				0
Link Offset(ft)		0			0			0				0
Crosswalk Width(ft)		16			16			16				16
Two way Left Turn Lane												
Headway Factor	1.22	1.40	1.22	1.22	1.22	1.22	1.22	1.22	1.22	1.22	1.22	1.22
Turning Speed (mph)	15		9	15		9	15		9	15		9
Turn Type	Perm	NA			NA		Perm	NA				
Protected Phases		4			8			2				
Permitted Phases	4						2					
Minimum Split (s)	19.0	19.0			19.0		23.0	23.0				
Total Split (s)	36.0	36.0			36.0		24.0	24.0				
Total Split (%)	60.0%	60.0%			60.0%		40.0%	40.0%				
Yellow Time (s)	3.0	3.0			3.0		3.0	3.0				
All-Red Time (s)	1.0	1.0			1.0		1.0	1.0				
Lost Time Adjust (s)		0.0			0.0			0.0				
Total Lost Time (s)		4.0			4.0			4.0				
Lead/Lag												
Lead-Lag Optimize?												
Act Effct Green (s)		32.0			32.0			20.0				
Actuated g/C Ratio		0.53			0.53			0.33				
v/c Ratio		0.40			0.50			0.31				
Control Delay		10.5			11.3			15.2				
Queue Delay		0.0			0.0			0.0				
Total Delay		10.5			11.3			15.2				
LOS		B			B			B				
Approach Delay		10.5			11.3			15.2				
Approach LOS		B			B			B				
Queue Length 50th (ft)		57			86			38				
Queue Length 95th (ft)		106			152			79				
Internal Link Dist (ft)		866			248			72				577

Lanes, Volumes, Timings  
 16: 79th Street & Cregier Avenue

11/22/2017

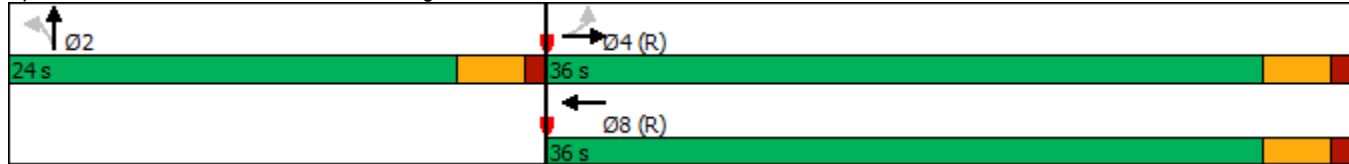


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Bay Length (ft)												
Base Capacity (vph)		721			843			525				
Starvation Cap Reductn		0			0			0				
Spillback Cap Reductn		0			0			0				
Storage Cap Reductn		0			0			0				
Reduced v/c Ratio		0.40			0.50			0.31				

Intersection Summary



















Area Type:	CBD
Cycle Length:	60
Actuated Cycle Length:	60
Offset: 0 (0%), Referenced to phase 4:EBTL and 8:WBT, Start of Green	
Natural Cycle:	45
Control Type:	Pretimed
Maximum v/c Ratio:	0.50
Intersection Signal Delay:	11.8
Intersection LOS:	B
Intersection Capacity Utilization	61.9%
ICU Level of Service	B
Analysis Period (min)	15

Splits and Phases: 16: 79th Street & Cregier Avenue



Lanes, Volumes, Timings  
58: Paulina Street & 79th Street

11/22/2017

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	624	0	0	491	0	8	0	28	29	0	5
Future Volume (vph)	0	624	0	0	491	0	8	0	28	29	0	5
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (ft)	0		0	0		0	0		10	0		10
Storage Lanes	0		0	0		0	1		1	1		1
Taper Length (ft)	25			25			25			25		
Satd. Flow (prot)	0	1306	0	0	1274	0	1539	0	1324	1438	0	1377
Flt Permitted							0.950			0.950		
Satd. Flow (perm)	0	1306	0	0	1274	0	1539	0	1324	1438	0	1377
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		664			664			657			669	
Travel Time (s)		15.1			15.1			14.9			15.2	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.67	0.92	0.70	0.66	0.92	0.42
Heavy Vehicles (%)	2%	11%	2%	2%	10%	2%	0%	2%	4%	7%	2%	0%
Bus Blockages (#/hr)	0	0	0	0	0	6	0	0	0	0	0	0
Parking (#/hr)		1			7							
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	678	0	0	534	0	12	0	40	44	0	12
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		9			9			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.22	1.40	1.22	1.22	1.46	1.22	1.22	1.22	1.22	1.22	1.22	1.22
Turning Speed (mph)	15		9	15		9	15		9	15		9
Sign Control		Stop			Stop			Stop			Stop	
Intersection Summary												
Area Type:	CBD											
Control Type:	Unsignalized											
Intersection Capacity Utilization	55.2%						ICU Level of Service B					
Analysis Period (min)	15											



Lanes, Volumes, Timings  
 69: Union Avenue & 79th Street

11/22/2017



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↖			↗		↖		↗			
Traffic Volume (vph)	25	604	0	0	523	16	2	8	8	0	0	0
Future Volume (vph)	25	604	0	0	523	16	2	8	8	0	0	0
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (ft)	0		0	0		0	0		10	0		0
Storage Lanes	0		0	0		0	1		1	0		0
Taper Length (ft)	25			25			25			25		
Satd. Flow (prot)	0	1312	0	0	1323	0	1539	0	1377	0	0	0
Flt Permitted		0.997					0.950					
Satd. Flow (perm)	0	1312	0	0	1323	0	1539	0	1377	0	0	0
Link Speed (mph)		30			30			30				30
Link Distance (ft)		665			358			654				664
Travel Time (s)		15.1			8.1			14.9				15.1
Peak Hour Factor	0.52	0.95	0.92	0.92	0.96	0.50	0.50	0.67	0.67	0.92	0.92	0.92
Heavy Vehicles (%)	8%	11%	2%	2%	10%	0%	0%	0%	0%	2%	2%	2%
Parking (#/hr)		0			0							
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	684	0	0	577	0	4	12	12	0	0	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		9			9			12				12
Link Offset(ft)		0			0			0				0
Crosswalk Width(ft)		16			16			16				16
Two way Left Turn Lane												
Headway Factor	1.22	1.39	1.22	1.22	1.39	1.22	1.22	1.22	1.22	1.22	1.22	1.22
Turning Speed (mph)	15		9	15		9	15		9	15		9
Sign Control		Stop			Stop			Stop				Stop

Intersection Summary

Area Type:	CBD
Control Type:	Unsignalized
Intersection Capacity Utilization Err%	ICU Level of Service H
Analysis Period (min)	15

# **PM Reports**

Lanes, Volumes, Timings

1: W. Columbus Ave. & W. 79th St. & S. Sawyer Ave.

11/22/2017



Lane Group	EBL	EBT	EBR	WBL	WBT	SBR2	NEL2	NET	NER	SWT	SWR	Ø1
Lane Configurations												
Traffic Volume (vph)	238	597	6	153	542	3	23	578	160	993	25	
Future Volume (vph)	238	597	6	153	542	3	23	578	160	993	25	
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	
Lane Width (ft)	9	11	9	10	12	12	12	12	12	11	11	
Storage Length (ft)	180		100	0					0		0	
Storage Lanes	1		1	1					0		0	
Taper Length (ft)	25			25								
Satd. Flow (prot)	1248	3642	0	1306	2577	1401	1539	2884	0	2870	0	
Flt Permitted	0.254			0.391			0.156					
Satd. Flow (perm)	334	3642	0	537	2577	1401	253	2884	0	2870	0	
Right Turn on Red			Yes			Yes			Yes			
Satd. Flow (RTOR)		2				102		42				
Link Speed (mph)		30			30			30		30		
Link Distance (ft)		979			345			672		414		
Travel Time (s)		22.3			7.8			15.3		9.4		
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	
Heavy Vehicles (%)	11%	13%	0%	10%	18%	0%	0%	3%	4%	3%	13%	
Bus Blockages (#/hr)	0	0	6	0	6	0	0	0	0	0	0	
Parking (#/hr)		2										
Shared Lane Traffic (%)												
Lane Group Flow (vph)	259	656	0	166	589	3	25	802	0	1106	0	
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Right	
Median Width(ft)		10			10			12		12		
Link Offset(ft)		0			0			0		0		
Crosswalk Width(ft)		16			16			16		16		
Two way Left Turn Lane												
Headway Factor	1.39	1.34	1.39	1.33	1.24	1.22	1.22	1.22	1.22	1.28	1.28	
Turning Speed (mph)	15		9	15		9	15		9		9	
Turn Type	pm+pt	NA		Perm	NA	Perm	Perm	NA		NA		
Protected Phases	7	4			8			2		6		1
Permitted Phases	4			8		6 7	2					
Minimum Split (s)	8.0	33.0		33.0	33.0		44.0	44.0		45.0		5.0
Total Split (s)	13.0	50.0		37.0	37.0		44.0	44.0		50.0		6.0
Total Split (%)	13.0%	50.0%		37.0%	37.0%		44.0%	44.0%		50.0%		6%
Yellow Time (s)	3.0	4.0		4.0	4.0		4.0	4.0		4.0		3.0
All-Red Time (s)	0.0	2.0		2.0	2.0		2.0	2.0		2.0		0.0
Lost Time Adjust (s)	1.0	-2.0		-2.0	-2.0		-2.0	-2.0		-2.0		
Total Lost Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0		
Lead/Lag	Lead			Lag	Lag		Lag	Lag				Lead
Lead-Lag Optimize?	Yes			Yes	Yes		Yes	Yes				Yes
Act Effect Green (s)	46.0	46.0		33.0	33.0	59.0	40.0	40.0		46.0		
Actuated g/C Ratio	0.46	0.46		0.33	0.33	0.59	0.40	0.40		0.46		
v/c Ratio	1.10	0.39		0.94	0.69	0.00	0.25	0.68		0.84		
Control Delay	113.4	18.6		59.4	14.4	0.0	27.9	26.9		22.8		
Queue Delay	0.5	0.0		0.0	0.3	0.0	0.0	0.0		14.8		
Total Delay	113.9	18.6		59.4	14.8	0.0	27.9	26.9		37.7		
LOS	F	B		E	B	A	C	C		D		

Lanes, Volumes, Timings  
 1: W. Columbus Ave. & W. 79th St. & S. Sawyer Ave.

11/22/2017

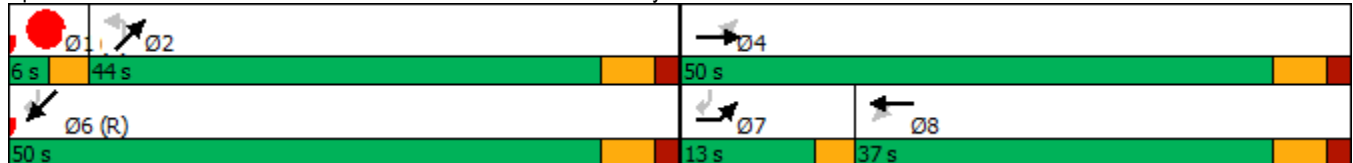


Lane Group	EBL	EBT	EBR	WBL	WBT	SBR2	NEL2	NET	NER	SWT	SWR	Ø1
Approach Delay		45.6			24.6			26.9		37.7		
Approach LOS		D			C			C		D		
Queue Length 50th (ft)	~127	97		26	47	0	10	206		303		
Queue Length 95th (ft)	#303	128		m#165	75	0	34	276		427		
Internal Link Dist (ft)		899			265			592		334		
Turn Bay Length (ft)	180						115					
Base Capacity (vph)	235	1676		177	850	868	101	1178		1320		
Starvation Cap Reductn	0	0		0	37	0	0	0		223		
Spillback Cap Reductn	8	35		0	0	0	0	0		0		
Storage Cap Reductn	0	0		0	0	0	0	0		0		
Reduced v/c Ratio	1.14	0.40		0.94	0.72	0.00	0.25	0.68		1.01		

Intersection Summary

Area Type: CBD  
 Cycle Length: 100  
 Actuated Cycle Length: 100  
 Offset: 86 (86%), Referenced to phase 1:Hold and 6:SWT, Start of Green  
 Natural Cycle: 90  
 Control Type: Pretimed  
 Maximum v/c Ratio: 1.10  
 Intersection Signal Delay: 34.4 Intersection LOS: C  
 Intersection Capacity Utilization 98.1% ICU Level of Service F  
 Analysis Period (min) 15  
 ~ Volume exceeds capacity, queue is theoretically infinite.  
 Queue shown is maximum after two cycles.  
 # 95th percentile volume exceeds capacity, queue may be longer.  
 Queue shown is maximum after two cycles.  
 m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 1: W. Columbus Ave. & W. 79th St. & S. Sawyer Ave.



Lanes, Volumes, Timings  
 2: S. Kedzie Ave. & W. 79th St.

11/22/2017



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑	↗	↖	↑↑			↔			↔	
Traffic Volume (vph)	0	590	167	29	565	51	125	501	37	29	714	5
Future Volume (vph)	0	590	167	29	565	51	125	501	37	29	714	5
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Width (ft)	12	12	10	9	11	12	12	11	12	12	11	12
Storage Length (ft)	0		0	40		0	0		0	0		0
Storage Lanes	0		1	1		0	0		0	0		0
Taper Length (ft)	25			25			25			25		
Satd. Flow (prot)	0	2773	1206	1074	2541	0	0	2829	0	0	2849	0
Flt Permitted				0.348				0.593			0.901	
Satd. Flow (perm)	0	2773	1206	393	2541	0	0	1693	0	0	2572	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			182		10			9			1	
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		345			652			563			245	
Travel Time (s)		7.8			14.8			12.8			5.6	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	2%	11%	4%	29%	16%	12%	3%	3%	10%	0%	3%	0%
Bus Blockages (#/hr)	0	0	6	0	0	6	0	0	0	0	6	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	641	182	32	669	0	0	721	0	0	813	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		9			9			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.22	1.22	1.37	1.39	1.28	1.22	1.22	1.28	1.22	1.22	1.30	1.22
Turning Speed (mph)	15		9	15		9	15		9	15		9
Turn Type		NA	Perm	Perm	NA		pm+pt	NA		Perm	NA	
Protected Phases		4			8		5	2			6	
Permitted Phases			4	8			2			6		
Minimum Split (s)		23.0	23.0	23.0	23.0		9.0	34.0		34.0	34.0	
Total Split (s)		43.0	43.0	38.0	38.0		9.0	57.0		48.0	48.0	
Total Split (%)		43.0%	43.0%	38.0%	38.0%		9.0%	57.0%		48.0%	48.0%	
Yellow Time (s)		4.0	4.0	4.0	4.0		3.0	4.0		4.0	4.0	
All-Red Time (s)		1.0	1.0	1.0	1.0		0.0	2.0		2.0	2.0	
Lost Time Adjust (s)		-1.0	-1.0	-1.0	-1.0			-2.0			-2.0	
Total Lost Time (s)		4.0	4.0	4.0	4.0			4.0			4.0	
Lead/Lag				Lag	Lag		Lead			Lag	Lag	
Lead-Lag Optimize?				Yes	Yes		Yes			Yes	Yes	
Act Effct Green (s)		39.0	39.0	34.0	34.0			53.0			44.0	
Actuated g/C Ratio		0.39	0.39	0.34	0.34			0.53			0.44	
v/c Ratio		0.59	0.31	0.24	0.77			0.75			0.72	
Control Delay		15.0	1.3	29.7	36.1			22.9			5.8	
Queue Delay		0.2	0.0	0.0	0.0			2.6			0.1	
Total Delay		15.2	1.3	29.7	36.1			25.5			5.9	
LOS		B	A	C	D			C			A	
Approach Delay		12.1			35.8			25.5			5.9	

Lane Group	Ø7
Lane Configurations	
Traffic Volume (vph)	
Future Volume (vph)	
Ideal Flow (vphpl)	
Lane Width (ft)	
Storage Length (ft)	
Storage Lanes	
Taper Length (ft)	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Right Turn on Red	
Satd. Flow (RTOR)	
Link Speed (mph)	
Link Distance (ft)	
Travel Time (s)	
Peak Hour Factor	
Heavy Vehicles (%)	
Bus Blockages (#/hr)	
Shared Lane Traffic (%)	
Lane Group Flow (vph)	
Enter Blocked Intersection	
Lane Alignment	
Median Width(ft)	
Link Offset(ft)	
Crosswalk Width(ft)	
Two way Left Turn Lane	
Headway Factor	
Turning Speed (mph)	
Turn Type	
Protected Phases	7
Permitted Phases	
Minimum Split (s)	5.0
Total Split (s)	5.0
Total Split (%)	5%
Yellow Time (s)	3.0
All-Red Time (s)	0.0
Lost Time Adjust (s)	
Total Lost Time (s)	
Lead/Lag	Lead
Lead-Lag Optimize?	Yes
Act Effct Green (s)	
Actuated g/C Ratio	
v/c Ratio	
Control Delay	
Queue Delay	
Total Delay	
LOS	
Approach Delay	

Lanes, Volumes, Timings  
 2: S. Kedzie Ave. & W. 79th St.

11/22/2017



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Approach LOS	B			D			C			A		
Queue Length 50th (ft)		71	0	15	195			143			21	
Queue Length 95th (ft)		88	m2	41	267			191			m14	
Internal Link Dist (ft)		265			572			483			165	
Turn Bay Length (ft)				40								
Base Capacity (vph)		1081	581	133	870			958			1132	
Starvation Cap Reductn		73	0	0	0			0			17	
Spillback Cap Reductn		0	0	0	0			135			0	
Storage Cap Reductn		0	0	0	0			0			0	
Reduced v/c Ratio		0.64	0.31	0.24	0.77			0.88			0.73	

Intersection Summary

Area Type: CBD  
 Cycle Length: 100  
 Actuated Cycle Length: 100  
 Offset: 91 (91%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green  
 Natural Cycle: 75  
 Control Type: Pretimed  
 Maximum v/c Ratio: 0.77  
 Intersection Signal Delay: 19.0  
 Intersection LOS: B  
 Intersection Capacity Utilization 85.9%  
 ICU Level of Service E  
 Analysis Period (min) 15  
 m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 2: S. Kedzie Ave. & W. 79th St.



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Lane Group	Ø7
Approach LOS	
Queue Length 50th (ft)	
Queue Length 95th (ft)	
Internal Link Dist (ft)	
Turn Bay Length (ft)	
Base Capacity (vph)	
Starvation Cap Reductn	
Spillback Cap Reductn	
Storage Cap Reductn	
Reduced v/c Ratio	
Intersection Summary	

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Lanes, Volumes, Timings  
 3: W. Columbus Ave. & S. Kedzie Ave.

11/22/2017

												
Lane Group	NBL	NBT	NBR	SBL	SBT	SBR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Traffic Volume (vph)	0	463	89	9	648	555	400	413	3	97	463	12
Future Volume (vph)	0	463	89	9	648	555	400	413	3	97	463	12
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Width (ft)	12	11	12	12	10	10	11	11	11	10	11	12
Storage Length (ft)	0		0	0		100	0		0	90		0
Storage Lanes	0		0	0		1	1		0	1		0
Taper Length (ft)	25			25			25			25		
Satd. Flow (prot)	0	2792	0	0	2743	1224	1417	2853	0	1422	2745	0
Flt Permitted					0.944		0.183			0.491		
Satd. Flow (perm)	0	2792	0	0	2592	1224	273	2853	0	735	2745	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		22				51		1				2
Link Speed (mph)		30			30			30				30
Link Distance (ft)		245			494			414				680
Travel Time (s)		5.6			11.2			9.4				15.5
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	0%	4%	4%	50%	4%	5%	5%	4%	33%	1%	8%	6%
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	600	0	0	714	603	435	452	0	105	516	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			11			11	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.22	1.28	1.22	1.22	1.33	1.33	1.28	1.28	1.28	1.33	1.28	1.22
Turning Speed (mph)	15		9	15		9	15		9	15		9
Turn Type		NA		Perm	NA	pm+ov	pm+pt	NA		Perm	NA	
Protected Phases		2			6	7	7	4				8
Permitted Phases	2			6		6	4			8		
Minimum Split (s)	28.0	28.0		28.0	28.0	8.0	8.0	26.0		26.0	26.0	
Total Split (s)	33.0	33.0		33.0	33.0	41.0	41.0	67.0		26.0	26.0	
Total Split (%)	33.0%	33.0%		33.0%	33.0%	41.0%	41.0%	67.0%		26.0%	26.0%	
Yellow Time (s)	4.0	4.0		4.0	4.0	3.0	3.0	4.0		4.0	4.0	
All-Red Time (s)	2.0	2.0		2.0	2.0	0.0	0.0	2.0		2.0	2.0	
Lost Time Adjust (s)		-2.0			-2.0	1.0	1.0	-2.0		-2.0	-2.0	
Total Lost Time (s)		4.0			4.0	4.0	4.0	4.0		4.0	4.0	
Lead/Lag						Lead	Lead			Lag	Lag	
Lead-Lag Optimize?						Yes	Yes			Yes	Yes	
Act Effct Green (s)		29.0			29.0	70.0	63.0	63.0		22.0	22.0	
Actuated g/C Ratio		0.29			0.29	0.70	0.63	0.63		0.22	0.22	
v/c Ratio		0.73			0.95	0.69	0.73	0.25		0.65	0.85	
Control Delay		21.8			58.6	13.0	25.1	15.5		56.4	52.3	
Queue Delay		11.5			0.0	0.3	3.0	0.0		0.0	5.5	
Total Delay		33.3			58.6	13.4	28.1	15.5		56.4	57.8	
LOS		C			E	B	C	B		E	E	
Approach Delay		33.3			37.9			21.7			57.6	
Approach LOS		C			D			C			E	

Lanes, Volumes, Timings  
 3: W. Columbus Ave. & S. Kedzie Ave.

11/22/2017



Lane Group	NBL	NBT	NBR	SBL	SBT	SBR	NEL	NET	NER	SWL	SWT	SWR
Queue Length 50th (ft)		156			234	177	235	108		61	166	
Queue Length 95th (ft)		201			#354	308	m312	m134		#139	#255	
Internal Link Dist (ft)		165			414			334			600	
Turn Bay Length (ft)						100				90		
Base Capacity (vph)		825			751	872	595	1797		161	605	
Starvation Cap Reductn		204			0	0	82	0		0	0	
Spillback Cap Reductn		0			0	43	0	0		0	53	
Storage Cap Reductn		0			0	0	0	0		0	0	
Reduced v/c Ratio		0.97			0.95	0.73	0.85	0.25		0.65	0.93	

Intersection Summary

























Area Type: CBD  
 Cycle Length: 100  
 Actuated Cycle Length: 100  
 Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green  
 Natural Cycle: 80  
 Control Type: Pretimed  
 Maximum v/c Ratio: 0.95  
 Intersection Signal Delay: 36.5  
 Intersection LOS: D  
 Intersection Capacity Utilization 85.3%  
 ICU Level of Service E  
 Analysis Period (min) 15  
 # 95th percentile volume exceeds capacity, queue may be longer.  
 Queue shown is maximum after two cycles.  
 m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 3: W. Columbus Ave. & S. Kedzie Ave.



Lanes, Volumes, Timings  
4: Ashland Avenue & 79th Street

11/22/2017

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	85	478	34	74	514	79	63	375	58	49	843	98
Future Volume (vph)	85	478	34	74	514	79	63	375	58	49	843	98
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Width (ft)	9	10	9	9	10	9	10	11	11	10	11	11
Storage Length (ft)	80		30	60		30	100		30	100		30
Storage Lanes	1		1	1		1	1		1	1		1
Taper Length (ft)	25			25			25			25		
Satd. Flow (prot)	1385	1072	1152	1345	1189	1110	1282	2400	880	1355	2394	816
Flt Permitted	0.239			0.275			0.207			0.479		
Satd. Flow (perm)	344	1072	1083	383	1189	1056	274	2400	778	648	2394	710
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			61			61			61			61
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		666			1315			665			670	
Travel Time (s)		15.1			29.9			15.1			15.2	
Confl. Peds. (#/hr)	41		54	54		41	47		41	41		47
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Heavy Vehicles (%)	0%	10%	5%	3%	10%	9%	12%	6%	4%	6%	5%	9%
Bus Blockages (#/hr)	0	0	6	0	0	6	0	0	8	0	0	8
Parking (#/hr)		24			7			38	38		42	42
Shared Lane Traffic (%)												
Lane Group Flow (vph)	93	525	37	81	565	87	69	412	64	54	926	108
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			10			10	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.39	1.79	1.44	1.39	1.59	1.44	1.33	1.54	1.99	1.33	1.57	2.06
Turning Speed (mph)	15		9	15		9	15		9	15		9
Turn Type	Perm	NA	Perm	Perm	NA	Perm	Perm	NA	Perm	Perm	NA	Perm
Protected Phases		4			8			2			6	
Permitted Phases	4		4	8		8	2		2	6		6
Minimum Split (s)	38.0	38.0	38.0	38.0	38.0	38.0	27.0	27.0	27.0	27.0	27.0	27.0
Total Split (s)	44.0	44.0	44.0	44.0	44.0	44.0	46.0	46.0	46.0	46.0	46.0	46.0
Total Split (%)	48.9%	48.9%	48.9%	48.9%	48.9%	48.9%	51.1%	51.1%	51.1%	51.1%	51.1%	51.1%
Yellow Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
All-Red Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Lost Time Adjust (s)	-4.0	-4.0	-4.0	-4.0	-4.0	-4.0	-4.0	-4.0	-4.0	-4.0	-4.0	-4.0
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lead/Lag												
Lead-Lag Optimize?												
Act Effct Green (s)	40.0	40.0	40.0	40.0	40.0	40.0	42.0	42.0	42.0	42.0	42.0	42.0
Actuated g/C Ratio	0.44	0.44	0.44	0.44	0.44	0.44	0.47	0.47	0.47	0.47	0.47	0.47
v/c Ratio	0.61	1.10	0.07	0.48	1.07	0.17	0.54	0.37	0.16	0.18	0.83	0.30
Control Delay	39.9	99.2	2.1	19.0	69.7	6.7	36.9	16.7	5.2	16.0	28.9	9.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	39.9	99.2	2.1	19.0	69.7	6.7	36.9	16.7	5.2	16.0	28.9	9.7

Lanes, Volumes, Timings  
 4: Ashland Avenue & 79th Street

11/22/2017

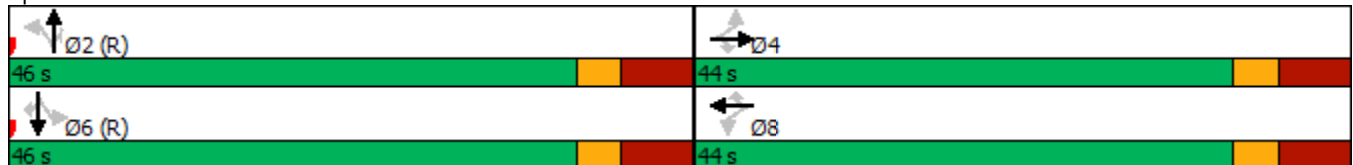


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
LOS	D	F	A	B	E	A	D	B	A	B	C	A
Approach Delay		85.3			56.6			17.9			26.3	
Approach LOS		F			E			B			C	
Queue Length 50th (ft)	39	~343	0	27	~370	14	27	76	1	17	231	15
Queue Length 95th (ft)	#117	#536	9	m32	m#438	m16	#91	112	23	42	#323	50
Internal Link Dist (ft)		586			1235			585			590	
Turn Bay Length (ft)	80		30	60		30	100		30	100		30
Base Capacity (vph)	152	476	515	170	528	503	127	1120	395	302	1117	363
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.61	1.10	0.07	0.48	1.07	0.17	0.54	0.37	0.16	0.18	0.83	0.30

Intersection Summary

Area Type: CBD  
 Cycle Length: 90  
 Actuated Cycle Length: 90  
 Offset: 32 (36%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green  
 Natural Cycle: 80  
 Control Type: Pretimed  
 Maximum v/c Ratio: 1.10  
 Intersection Signal Delay: 44.9 Intersection LOS: D  
 Intersection Capacity Utilization 113.2% ICU Level of Service H  
 Analysis Period (min) 15  
 ~ Volume exceeds capacity, queue is theoretically infinite.  
 Queue shown is maximum after two cycles.  
 # 95th percentile volume exceeds capacity, queue may be longer.  
 Queue shown is maximum after two cycles.  
 m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 4: Ashland Avenue & 79th Street



Lanes, Volumes, Timings  
5: Loomis Blvd & 79th Street

11/22/2017



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	25	535	25	25	617	25	25	100	25	25	100	25
Future Volume (vph)	25	535	25	25	617	25	25	100	25	25	100	25
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (ft)	60		30	60		30	0		0	0		0
Storage Lanes	1		1	1		1	0		0	0		0
Taper Length (ft)	25			25			25			25		
Satd. Flow (prot)	1509	1429	1318	1509	1429	1350	0	1541	0	0	1541	0
Flt Permitted	0.248			0.319				0.944			0.944	
Satd. Flow (perm)	394	1429	1318	507	1429	1350	0	1466	0	0	1466	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			17			14		23			23	
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		1315			357			644			631	
Travel Time (s)		29.9			8.1			14.6			14.3	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Bus Blockages (#/hr)	0	0	6	0	0	0	0	0	0	0	0	0
Parking (#/hr)		0			0							
Shared Lane Traffic (%)												
Lane Group Flow (vph)	27	582	27	27	671	27	0	163	0	0	163	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.22	1.39	1.26	1.22	1.39	1.22	1.22	1.22	1.22	1.22	1.22	1.22
Turning Speed (mph)	15		9	15		9	15		9	15		9
Turn Type	Perm	NA	Perm	Perm	NA	Perm	Perm	NA		Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4		4	8		8	2			6		
Minimum Split (s)	17.0	17.0	17.0	17.0	17.0	17.0	18.0	18.0		18.0	18.0	
Total Split (s)	27.0	27.0	27.0	27.0	27.0	27.0	18.0	18.0		18.0	18.0	
Total Split (%)	60.0%	60.0%	60.0%	60.0%	60.0%	60.0%	40.0%	40.0%		40.0%	40.0%	
Yellow Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	
All-Red Time (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Lost Time Adjust (s)	1.0	1.0	1.0	1.0	1.0	1.0		1.0			1.0	
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0		4.0			4.0	
Lead/Lag												
Lead-Lag Optimize?												
Act Effct Green (s)	23.0	23.0	23.0	23.0	23.0	23.0		14.0			14.0	
Actuated g/C Ratio	0.51	0.51	0.51	0.51	0.51	0.51		0.31			0.31	
v/c Ratio	0.13	0.80	0.04	0.10	0.92	0.04		0.35			0.35	
Control Delay	6.8	13.1	3.9	7.0	33.0	4.2		12.8			12.8	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0		0.0			0.0	
Total Delay	6.8	13.1	3.9	7.0	33.0	4.2		12.8			12.8	
LOS	A	B	A	A	C	A		B			B	
Approach Delay		12.5			30.9			12.8			12.8	
Approach LOS		B			C			B			B	

Lanes, Volumes, Timings  
 5: Loomis Blvd & 79th Street

11/22/2017

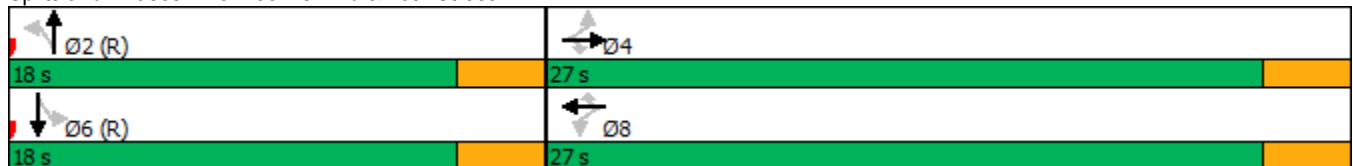


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Queue Length 50th (ft)	6	159	3	3	141	1		27			27	
Queue Length 95th (ft)	m7	m161	m4	13	#332	9		64			64	
Internal Link Dist (ft)		1235			277			564			551	
Turn Bay Length (ft)	60		30	60		30						
Base Capacity (vph)	201	730	681	259	730	696		471			471	
Starvation Cap Reductn	0	0	0	0	0	0		0			0	
Spillback Cap Reductn	0	0	0	0	0	0		0			0	
Storage Cap Reductn	0	0	0	0	0	0		0			0	
Reduced v/c Ratio	0.13	0.80	0.04	0.10	0.92	0.04		0.35			0.35	

Intersection Summary






















Area Type: CBD  
 Cycle Length: 45  
 Actuated Cycle Length: 45  
 Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green  
 Natural Cycle: 60  
 Control Type: Pretimed  
 Maximum v/c Ratio: 0.92  
 Intersection Signal Delay: 20.5 Intersection LOS: C  
 Intersection Capacity Utilization 57.6% ICU Level of Service B  
 Analysis Period (min) 15  
 # 95th percentile volume exceeds capacity, queue may be longer.  
 Queue shown is maximum after two cycles.  
 m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 5: Loomis Blvd & 79th Street



Lanes, Volumes, Timings  
6: Morgan Street & 79th Street

11/22/2017

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	25	637	25	25	540	25	25	100	25	25	100	25
Future Volume (vph)	25	637	25	25	540	25	25	100	25	25	100	25
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (ft)	100		30	100		30	0		0	0		0
Storage Lanes	1		1	1		1	0		0	0		0
Taper Length (ft)	25			25			25			25		
Satd. Flow (prot)	1509	1429	1350	1509	1414	1350	0	1541	0	0	1541	0
Flt Permitted	0.350			0.283				0.939			0.939	
Satd. Flow (perm)	556	1429	1350	449	1414	1350	0	1459	0	0	1459	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			14			14		12			12	
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		323			1321			593			659	
Travel Time (s)		7.3			30.0			13.5			15.0	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Parking (#/hr)		0			2							
Shared Lane Traffic (%)												
Lane Group Flow (vph)	27	692	27	27	587	27	0	163	0	0	163	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.22	1.39	1.22	1.22	1.41	1.22	1.22	1.22	1.22	1.22	1.22	1.22
Turning Speed (mph)	15		9	15		9	15		9	15		9
Turn Type	Perm	NA	Perm	Perm	NA	Perm	Perm	NA		Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4		4	8		8	2			6		
Minimum Split (s)	17.0	17.0	17.0	17.0	17.0	17.0	21.0	21.0		21.0	21.0	
Total Split (s)	54.0	54.0	54.0	54.0	54.0	54.0	26.0	26.0		26.0	26.0	
Total Split (%)	67.5%	67.5%	67.5%	67.5%	67.5%	67.5%	32.5%	32.5%		32.5%	32.5%	
Yellow Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0		1.0	1.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0		0.0			0.0	
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0		4.0			4.0	
Lead/Lag												
Lead-Lag Optimize?												
Act Effct Green (s)	50.0	50.0	50.0	50.0	50.0	50.0		22.0			22.0	
Actuated g/C Ratio	0.62	0.62	0.62	0.62	0.62	0.62		0.28			0.28	
v/c Ratio	0.08	0.77	0.03	0.10	0.66	0.03		0.40			0.40	
Control Delay	6.6	18.6	3.9	2.5	6.1	0.7		25.3			25.3	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0		0.0			0.0	
Total Delay	6.6	18.6	3.9	2.5	6.1	0.7		25.3			25.3	
LOS	A	B	A	A	A	A		C			C	
Approach Delay		17.7			5.7			25.3			25.3	
Approach LOS		B			A			C			C	
Queue Length 50th (ft)	5	224	2	2	34	0		61			61	

Lanes, Volumes, Timings  
6: Morgan Street & 79th Street

11/22/2017



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Queue Length 95th (ft)	15	386	11	m2	m46	m0		116			116	
Internal Link Dist (ft)		243			1241			513			579	
Turn Bay Length (ft)	100		30	100		30						
Base Capacity (vph)	347	893	849	280	883	849		409			409	
Starvation Cap Reductn	0	0	0	0	0	0		0			0	
Spillback Cap Reductn	0	0	0	0	0	0		0			0	
Storage Cap Reductn	0	0	0	0	0	0		0			0	
Reduced v/c Ratio	0.08	0.77	0.03	0.10	0.66	0.03		0.40			0.40	

Intersection Summary

Area Type: CBD  
 Cycle Length: 80  
 Actuated Cycle Length: 80  
 Offset: 47 (59%), Referenced to phase 2:NBT and 6:SBT, Start of Green  
 Natural Cycle: 60  
 Control Type: Pretimed  
 Maximum v/c Ratio: 0.77  
 Intersection Signal Delay: 14.7  
 Intersection LOS: B  
 Intersection Capacity Utilization 60.2%  
 ICU Level of Service B  
 Analysis Period (min) 15  
 m Volume for 95th percentile queue is metered by upstream signal.

























Splits and Phases: 6: Morgan Street & 79th Street





Lanes, Volumes, Timings  
7: Halsted Street & 79th Street

11/22/2017

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	62	543	82	87	448	45	85	339	90	78	636	57
Future Volume (vph)	62	543	82	87	448	45	85	339	90	78	636	57
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Width (ft)	9	10	9	9	10	9	10	11	13	10	10	13
Storage Length (ft)	100		30	60		30	100		100	100		100
Storage Lanes	1		1	1		1	1		1	1		1
Taper Length (ft)	25			25			25			25		
Satd. Flow (prot)	1385	1155	1215	1385	1221	1203	1436	1520	1368	1395	1426	1355
Flt Permitted	0.276			0.174			0.192			0.457		
Satd. Flow (perm)	402	1155	1215	254	1221	1203	290	1520	1368	671	1426	1355
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			55			55			98			55
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		1321			667			631			665	
Travel Time (s)		30.0			15.2			14.3			15.1	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	0%	10%	2%	0%	9%	3%	0%	3%	4%	3%	6%	5%
Parking (#/hr)		12			4							
Shared Lane Traffic (%)												
Lane Group Flow (vph)	67	590	89	95	487	49	92	368	98	85	691	62
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			10			10	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.39	1.64	1.39	1.39	1.56	1.39	1.33	1.28	1.18	1.33	1.33	1.18
Turning Speed (mph)	15		9	15		9	15		9	15		9
Turn Type	Perm	NA	Perm	Perm	NA	Perm	Perm	NA	Perm	Perm	NA	Perm
Protected Phases		4			8			2			6	
Permitted Phases	4		4	8		8	2		2	6		6
Minimum Split (s)	30.0	30.0	30.0	30.0	30.0	30.0	27.0	27.0	27.0	27.0	27.0	27.0
Total Split (s)	36.0	36.0	36.0	36.0	36.0	36.0	44.0	44.0	44.0	44.0	44.0	44.0
Total Split (%)	45.0%	45.0%	45.0%	45.0%	45.0%	45.0%	55.0%	55.0%	55.0%	55.0%	55.0%	55.0%
Yellow Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
All-Red Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lost Time Adjust (s)	-3.0	-3.0	-3.0	-3.0	-3.0	-3.0	-3.0	-3.0	-3.0	-3.0	-3.0	-3.0
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lead/Lag												
Lead-Lag Optimize?												
Act Effct Green (s)	32.0	32.0	32.0	32.0	32.0	32.0	40.0	40.0	40.0	40.0	40.0	40.0
Actuated g/C Ratio	0.40	0.40	0.40	0.40	0.40	0.40	0.50	0.50	0.50	0.50	0.50	0.50
v/c Ratio	0.42	1.28	0.17	0.94	1.00	0.10	0.63	0.48	0.13	0.25	0.97	0.09
Control Delay	17.2	157.4	4.4	105.4	67.1	4.6	38.9	15.9	3.0	14.0	48.8	4.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	17.2	157.4	4.4	105.4	67.1	4.6	38.9	15.9	3.0	14.0	48.8	4.1
LOS	B	F	A	F	E	A	D	B	A	B	D	A
Approach Delay		126.6			68.1			17.4			42.0	

Lanes, Volumes, Timings  
7: Halsted Street & 79th Street

11/22/2017

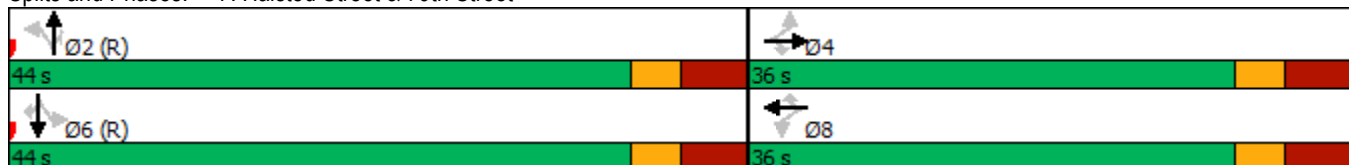


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Approach LOS	F			E			B			D		
Queue Length 50th (ft)	23	~396	13	44	237	0	32	115	0	23	317	2
Queue Length 95th (ft)	m26	m#584	m14	#140	#437	18	#111	188	22	53	#556	20
Internal Link Dist (ft)	1241			587			551			585		
Turn Bay Length (ft)	100		30	60		30	100		100	100		100
Base Capacity (vph)	160	462	519	101	488	514	145	760	733	335	713	705
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.42	1.28	0.17	0.94	1.00	0.10	0.63	0.48	0.13	0.25	0.97	0.09

Intersection Summary

Area Type: CBD  
 Cycle Length: 80  
 Actuated Cycle Length: 80  
 Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green  
 Natural Cycle: 110  
 Control Type: Pretimed  
 Maximum v/c Ratio: 1.28  
 Intersection Signal Delay: 65.7 Intersection LOS: E  
 Intersection Capacity Utilization 121.9% ICU Level of Service H  
 Analysis Period (min) 15  
 ~ Volume exceeds capacity, queue is theoretically infinite.  
 Queue shown is maximum after two cycles.  
 # 95th percentile volume exceeds capacity, queue may be longer.  
 Queue shown is maximum after two cycles.  
 m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 7: Halsted Street & 79th Street



Lanes, Volumes, Timings  
8: 79th Street & 150 W.

11/22/2017



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Volume (vph)	10	813	10	10	579	10	10	10	10	10	10	10
Future Volume (vph)	10	813	10	10	579	10	10	10	10	10	10	10
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Satd. Flow (prot)	0	1425	0	0	1425	0	0	1492	0	0	1492	0
Flt Permitted		0.993			0.985			0.934			0.934	
Satd. Flow (perm)	0	1417	0	0	1405	0	0	1417	0	0	1417	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		2			2			11			11	
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		558			495			173			227	
Travel Time (s)		12.7			11.3			3.9			5.2	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Parking (#/hr)		0			0							
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	906	0	0	651	0	0	33	0	0	33	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			0			0	
Link Offset(ft)		0			0			0			-30	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.22	1.39	1.22	1.22	1.39	1.22	1.22	1.22	1.22	1.22	1.22	1.22
Turning Speed (mph)	15		9	15		9	15		9	15		9
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Minimum Split (s)	9.0	9.0		9.0	9.0		21.0	21.0		21.0	21.0	
Total Split (s)	59.0	59.0		59.0	59.0		21.0	21.0		21.0	21.0	
Total Split (%)	73.8%	73.8%		73.8%	73.8%		26.3%	26.3%		26.3%	26.3%	
Yellow Time (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
All-Red Time (s)	1.0	1.0		1.0	1.0		1.0	1.0		1.0	1.0	
Lost Time Adjust (s)		0.0			0.0			0.0			0.0	
Total Lost Time (s)		4.0			4.0			4.0			4.0	
Lead/Lag												
Lead-Lag Optimize?												
Act Effct Green (s)		55.0			55.0			17.0			17.0	
Actuated g/C Ratio		0.69			0.69			0.21			0.21	
v/c Ratio		0.93			0.67			0.11			0.11	
Control Delay		29.4			16.7			20.2			20.2	
Queue Delay		0.0			0.0			0.0			0.0	
Total Delay		29.4			16.7			20.2			20.2	
LOS		C			B			C			C	
Approach Delay		29.4			16.7			20.2			20.2	
Approach LOS		C			B			C			C	
Queue Length 50th (ft)		332			157			9			9	
Queue Length 95th (ft)		#665			206			31			31	
Internal Link Dist (ft)		478			415			93			147	
Turn Bay Length (ft)												

Lanes, Volumes, Timings  
 8: 79th Street & 150 W.

11/22/2017



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Base Capacity (vph)		974			966			309			309	
Starvation Cap Reductn		0			0			0			0	
Spillback Cap Reductn		0			0			0			0	
Storage Cap Reductn		0			0			0			0	
Reduced v/c Ratio		0.93			0.67			0.11			0.11	

Intersection Summary

Area Type:	CBD
Cycle Length:	80
Actuated Cycle Length:	80
Offset:	51 (64%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
Natural Cycle:	80
Control Type:	Pretimed
Maximum v/c Ratio:	0.93
Intersection Signal Delay:	23.9
Intersection LOS:	C
Intersection Capacity Utilization	78.0%
ICU Level of Service	D
Analysis Period (min)	15
# 95th percentile volume exceeds capacity, queue may be longer. Queue shown is maximum after two cycles.	

Splits and Phases: 8: 79th Street & 150 W.



Lanes, Volumes, Timings  
 9: Lafayette Avenue & 79th Street

11/22/2017



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑↑↑		↖	↑↑					↖	↑↑↑↑	↖
Traffic Volume (vph)	0	624	209	280	514	0	0	0	0	181	1220	85
Future Volume (vph)	0	624	209	280	514	0	0	0	0	181	1220	85
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Width (ft)	11	11	11	12	12	12	12	12	12	12	10	8
Storage Length (ft)	100		0	0		0	0		0	0		0
Storage Lanes	2		0	1		0	0		0	1		1
Taper Length (ft)	25			25			25			25		
Satd. Flow (prot)	0	4336	0	1494	2557	0	0	0	0	1203	3674	978
Flt Permitted				0.211						0.950	0.999	
Satd. Flow (perm)	0	4336	0	318	2557	0	0	0	0	1203	3674	950
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		73										109
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		330			322			676			495	
Travel Time (s)		7.5			7.3			15.4			11.3	
Confl. Peds. (#/hr)	5		130	130		5	20					20
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	2%	9%	19%	3%	8%	2%	2%	2%	2%	10%	6%	22%
Bus Blockages (#/hr)	0	0	0	0	15	0	0	0	0	0	0	0
Parking (#/hr)					10							
Shared Lane Traffic (%)										10%		
Lane Group Flow (vph)	0	905	0	304	559	0	0	0	0	177	1346	92
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.28	1.28	1.28	1.22	1.40	1.22	1.22	1.22	1.22	1.22	1.33	1.46
Turning Speed (mph)	15		9	15		9	15		9	15		9
Turn Type		NA		pm+pt	NA					Perm	NA	Perm
Protected Phases		4		3	8						6	
Permitted Phases				8						6		6
Minimum Split (s)		20.0		8.0	26.0					33.0	33.0	33.0
Total Split (s)		24.0		18.0	42.0					38.0	38.0	38.0
Total Split (%)		30.0%		22.5%	52.5%					47.5%	47.5%	47.5%
Yellow Time (s)		3.0		3.0	3.0					3.0	3.0	3.0
All-Red Time (s)		5.0		0.0	5.0					2.0	2.0	2.0
Lost Time Adjust (s)		-4.0		1.0	-4.0					-1.0	-1.0	-1.0
Total Lost Time (s)		4.0		4.0	4.0					4.0	4.0	4.0
Lead/Lag		Lag		Lead								
Lead-Lag Optimize?												
Act Effct Green (s)		20.0		38.0	38.0					34.0	34.0	34.0
Actuated g/C Ratio		0.25		0.48	0.48					0.42	0.42	0.42
v/c Ratio		0.80		0.85	0.46					0.35	0.86	0.20
Control Delay		25.8		39.4	16.3					18.0	28.2	3.5
Queue Delay		0.0		0.0	0.4					0.0	0.0	0.0
Total Delay		25.8		39.4	16.7					18.0	28.2	3.5

Lanes, Volumes, Timings  
 9: Lafayette Avenue & 79th Street

11/22/2017

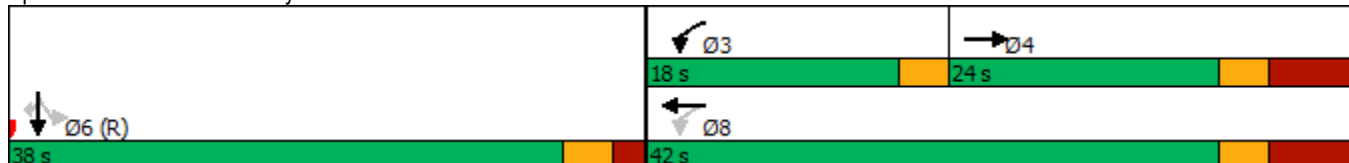


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
LOS		C		D	B					B	C	A
Approach Delay		25.8			24.7						25.6	
Approach LOS		C			C						C	
Queue Length 50th (ft)		95		99	95					67	228	0
Queue Length 95th (ft)		m112		#223	149					124	#302	21
Internal Link Dist (ft)		250			242			596			415	
Turn Bay Length (ft)												
Base Capacity (vph)		1138		356	1214					511	1561	466
Starvation Cap Reductn		0		0	236					0	0	0
Spillback Cap Reductn		0		0	0					0	0	0
Storage Cap Reductn		0		0	0					0	0	0
Reduced v/c Ratio		0.80		0.85	0.57					0.35	0.86	0.20

Intersection Summary

























Area Type: CBD  
 Cycle Length: 80  
 Actuated Cycle Length: 80  
 Offset: 44 (55%), Referenced to phase 6:SBTL, Start of Green  
 Natural Cycle: 65  
 Control Type: Pretimed  
 Maximum v/c Ratio: 0.86  
 Intersection Signal Delay: 25.4 Intersection LOS: C  
 Intersection Capacity Utilization 68.6% ICU Level of Service C  
 Analysis Period (min) 15  
 # 95th percentile volume exceeds capacity, queue may be longer.  
 Queue shown is maximum after two cycles.  
 m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 9: Lafayette Avenue & 79th Street



Lanes, Volumes, Timings  
10: State Street & 79th Street

11/22/2017

















												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	 	 			  			 				
Traffic Volume (vph)	357	448	0	0	461	178	333	242	244	0	0	0
Future Volume (vph)	357	448	0	0	461	178	333	242	244	0	0	0
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Width (ft)	12	12	12	12	12	12	12	11	16	12	12	12
Storage Length (ft)	0		0	200		100	0		0	0		0
Storage Lanes	2		0	1		1	1		1	0		0
Taper Length (ft)	25			25			25			25		
Satd. Flow (prot)	2927	2649	0	0	4336	1350	1373	2741	1530	0	0	0
Flt Permitted	0.346						0.950	0.981				
Satd. Flow (perm)	970	2649	0	0	4336	1350	1364	2734	1325	0	0	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)						228			109			
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		322			463			632			634	
Travel Time (s)		7.3			10.5			14.4			14.4	
Confl. Peds. (#/hr)	82		240	240		82	8		145	145		8
Peak Hour Factor	0.89	0.90	0.92	0.92	0.90	0.78	0.91	0.95	0.78	0.92	0.92	0.92
Bus Blockages (#/hr)	0	15	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)		18										
Shared Lane Traffic (%)							45%					
Lane Group Flow (vph)	401	498	0	0	512	228	201	420	313	0	0	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		24			24			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.22	1.44	1.22	1.22	1.22	1.22	1.22	1.28	1.05	1.22	1.22	1.22
Turning Speed (mph)	15		9	15		9	15		9	15		9
Turn Type	pm+pt	NA			NA	NA	Perm	NA	Perm			
Protected Phases	7	4			8			2				
Permitted Phases	4						2		2			
Minimum Split (s)	8.0	26.0			22.0		33.0	33.0	33.0			
Total Split (s)	13.0	44.0			31.0		36.0	36.0	36.0			
Total Split (%)	16.3%	55.0%			38.8%		45.0%	45.0%	45.0%			
Yellow Time (s)	3.0	3.0			3.0		3.0	3.0	3.0			
All-Red Time (s)	0.0	5.0			5.0		2.0	2.0	2.0			
Lost Time Adjust (s)	1.0	-4.0			-4.0		-1.0	-1.0	-1.0			
Total Lost Time (s)	4.0	4.0			4.0		4.0	4.0	4.0			
Lead/Lag	Lead				Lag							
Lead-Lag Optimize?												
Act Effct Green (s)	40.0	40.0			27.0	0.0	32.0	32.0	32.0			
Actuated g/C Ratio	0.50	0.50			0.34	0.00	0.40	0.40	0.40			
v/c Ratio	0.57	0.38			0.35	1.00	0.37	0.38	0.53			
Control Delay	8.2	7.4			20.8	69.2	19.4	18.3	15.3			
Queue Delay	0.0	0.0			0.0	0.0	0.0	0.0	0.0			
Total Delay	8.2	7.4			20.8	69.2	19.4	18.3	15.3			
LOS	A	A			C	E	B	B	B			





Lanes, Volumes, Timings  
11: Indiana Avenue & 79th Street

11/22/2017

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	604	88	25	570	0	0	0	0	25	25	69
Future Volume (vph)	0	604	88	25	570	0	0	0	0	25	25	69
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (ft)	0		30	0		0	0		0	0		0
Storage Lanes	0		1	0		0	0		0	0		0
Taper Length (ft)	25			25			25			25		
Satd. Flow (prot)	0	1429	1339	0	1427	0	0	0	0	0	1450	0
Flt Permitted					0.965						0.990	
Satd. Flow (perm)	0	1429	1339	0	1379	0	0	0	0	0	1450	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			50								75	
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		869			1306			665			683	
Travel Time (s)		19.8			29.7			15.1			15.5	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Bus Blockages (#/hr)	0	0	2	0	0	0	0	0	0	0	0	0
Parking (#/hr)		0			0							
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	657	96	0	647	0	0	0	0	0	129	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		10			10			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.22	1.39	1.24	1.22	1.39	1.22	1.22	1.22	1.22	1.22	1.22	1.22
Turning Speed (mph)	15		9	15		9	15		9	15		9
Turn Type		NA	Perm	Perm	NA					Perm	NA	
Protected Phases		4			8							6
Permitted Phases			4	8						6		
Minimum Split (s)		18.0	18.0	18.0	18.0					19.0	19.0	
Total Split (s)		41.0	41.0	41.0	41.0					19.0	19.0	
Total Split (%)		68.3%	68.3%	68.3%	68.3%					31.7%	31.7%	
Yellow Time (s)		3.0	3.0	3.0	3.0					3.0	3.0	
All-Red Time (s)		2.0	2.0	2.0	2.0					1.0	1.0	
Lost Time Adjust (s)		-1.0	-1.0		-1.0						0.0	
Total Lost Time (s)		4.0	4.0		4.0						4.0	
Lead/Lag												
Lead-Lag Optimize?												
Act Effct Green (s)		37.0	37.0		37.0						15.0	
Actuated g/C Ratio		0.62	0.62		0.62						0.25	
v/c Ratio		0.75	0.11		0.76						0.31	
Control Delay		15.1	3.1		4.5						11.4	
Queue Delay		0.0	0.0		0.0						0.0	
Total Delay		15.1	3.1		4.5						11.4	
LOS		B	A		A						B	
Approach Delay		13.6			4.5						11.4	
Approach LOS		B			A						B	

Lanes, Volumes, Timings  
 11: Indiana Avenue & 79th Street

11/22/2017



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Queue Length 50th (ft)		144	6		14							15
Queue Length 95th (ft)		#281	20		m23							53
Internal Link Dist (ft)		789			1226			585				603
Turn Bay Length (ft)			30									
Base Capacity (vph)		881	844		850							418
Starvation Cap Reductn		0	0		0							0
Spillback Cap Reductn		0	0		0							0
Storage Cap Reductn		0	0		0							0
Reduced v/c Ratio		0.75	0.11		0.76							0.31

Intersection Summary

























Area Type: CBD  
 Cycle Length: 60  
 Actuated Cycle Length: 60  
 Offset: 53 (88%), Referenced to phase 6:SBTL, Start of Green  
 Natural Cycle: 60  
 Control Type: Pretimed  
 Maximum v/c Ratio: 0.76  
 Intersection Signal Delay: 9.6  
 Intersection LOS: A  
 Intersection Capacity Utilization 78.2%  
 ICU Level of Service D  
 Analysis Period (min) 15  
 # 95th percentile volume exceeds capacity, queue may be longer.  
 Queue shown is maximum after two cycles.  
 m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 11: Indiana Avenue & 79th Street



Lanes, Volumes, Timings  
12: King Dr & 79th Street

11/22/2017

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	34	539	56	64	509	47	66	313	58	64	583	20
Future Volume (vph)	34	539	56	64	509	47	66	313	58	64	583	20
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Width (ft)	10	10	10	10	10	10	10	10	10	10	10	10
Storage Length (ft)	75		30	60		30	60		30	50		50
Storage Lanes	1		1	1		1	1		1	1		1
Taper Length (ft)	25			25			25			25		
Satd. Flow (prot)	1408	1156	1260	1408	1275	1260	1408	1482	1260	1408	1482	1260
Flt Permitted	0.211			0.176			0.236			0.495		
Satd. Flow (perm)	302	1156	1097	252	1275	1106	345	1482	1126	697	1482	1168
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			22			20			47			36
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		1306			1333			676			668	
Travel Time (s)		29.7			30.3			15.4			15.2	
Confl. Peds. (#/hr)	73		78	78		73	36		59	59		36
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Parking (#/hr)		24			8							
Shared Lane Traffic (%)												
Lane Group Flow (vph)	37	586	61	70	553	51	72	340	63	70	634	22
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		10			10			10			10	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.33	1.79	1.33	1.33	1.60	1.33	1.33	1.33	1.33	1.33	1.33	1.33
Turning Speed (mph)	15		9	15		9	15		9	15		9
Turn Type	Perm	NA	Perm	Perm	NA	Perm	Perm	NA	Perm	Perm	NA	Perm
Protected Phases		4			8			2			6	
Permitted Phases	4		4	8		8	2		2	6		6
Minimum Split (s)	26.0	26.0	26.0	26.0	26.0	26.0	24.0	24.0	24.0	24.0	24.0	24.0
Total Split (s)	27.0	27.0	27.0	27.0	27.0	27.0	33.0	33.0	33.0	33.0	33.0	33.0
Total Split (%)	45.0%	45.0%	45.0%	45.0%	45.0%	45.0%	55.0%	55.0%	55.0%	55.0%	55.0%	55.0%
Yellow Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lead/Lag												
Lead-Lag Optimize?												
Act Effct Green (s)	23.0	23.0	23.0	23.0	23.0	23.0	29.0	29.0	29.0	29.0	29.0	29.0
Actuated g/C Ratio	0.38	0.38	0.38	0.38	0.38	0.38	0.48	0.48	0.48	0.48	0.48	0.48
v/c Ratio	0.32	1.32	0.14	0.73	1.13	0.12	0.43	0.47	0.11	0.21	0.89	0.04
Control Delay	14.5	174.4	5.5	45.4	93.4	5.7	20.3	13.2	4.5	11.0	31.8	2.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	14.5	174.4	5.5	45.4	93.4	5.7	20.3	13.2	4.5	11.0	31.8	2.5
LOS	B	F	A	D	F	A	C	B	A	B	C	A
Approach Delay		150.7			81.8			13.1			28.9	

Lanes, Volumes, Timings  
12: King Dr & 79th Street

11/22/2017

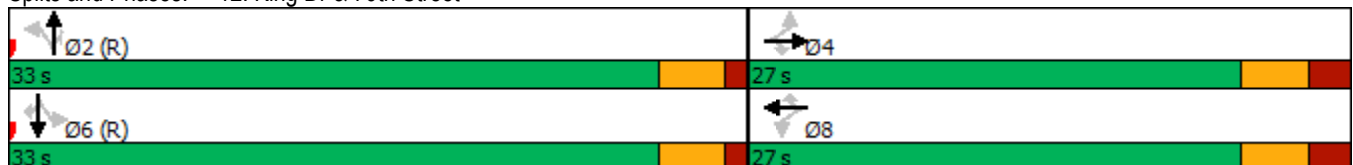


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Approach LOS	F			F			B			C		
Queue Length 50th (ft)	3	~288	1	6	~243	1	16	77	3	14	193	0
Queue Length 95th (ft)	m7	m#437	m4	m20	m#360	m3	53	138	19	36	#391	7
Internal Link Dist (ft)	1226			1253			596			588		
Turn Bay Length (ft)	75		30	60		30	60		30	50		50
Base Capacity (vph)	115	443	434	96	488	436	166	716	568	336	716	583
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.32	1.32	0.14	0.73	1.13	0.12	0.43	0.47	0.11	0.21	0.89	0.04

Intersection Summary

Area Type: CBD  
 Cycle Length: 60  
 Actuated Cycle Length: 60  
 Offset: 12 (20%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green  
 Natural Cycle: 90  
 Control Type: Pretimed  
 Maximum v/c Ratio: 1.32  
 Intersection Signal Delay: 72.5 Intersection LOS: E  
 Intersection Capacity Utilization 116.8% ICU Level of Service H  
 Analysis Period (min) 15  
 ~ Volume exceeds capacity, queue is theoretically infinite.  
 Queue shown is maximum after two cycles.  
 # 95th percentile volume exceeds capacity, queue may be longer.  
 Queue shown is maximum after two cycles.  
 m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 12: King Dr & 79th Street



Lanes, Volumes, Timings  
 13: St Lawrence Avenue & 79th Street

11/22/2017



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↑	↗		↕				
Traffic Volume (vph)	25	636	0	0	595	25	25	100	25	0	0	0
Future Volume (vph)	25	636	0	0	595	25	25	100	25	0	0	0
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (ft)	0		30	0		30	0		0	0		0
Storage Lanes	0		0	0		1	0		0	0		0
Taper Length (ft)	25			25			25			25		
Satd. Flow (prot)	0	1427	0	0	1429	1350	0	1541	0	0	0	0
Flt Permitted		0.970						0.992				
Satd. Flow (perm)	0	1387	0	0	1429	1350	0	1541	0	0	0	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)						18		17				
Link Speed (mph)		30			30			30				30
Link Distance (ft)		1333			660			688				650
Travel Time (s)		30.3			15.0			15.6				14.8
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Parking (#/hr)		0			0							
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	718	0	0	647	27	0	163	0	0	0	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		10			10			0				0
Link Offset(ft)		0			0			0				0
Crosswalk Width(ft)		16			16			16				16
Two way Left Turn Lane												
Headway Factor	1.22	1.39	1.22	1.22	1.39	1.22	1.22	1.22	1.22	1.22	1.22	1.22
Turning Speed (mph)	15		9	15		9	15		9	15		9
Turn Type	Perm	NA			NA	Perm	Perm	NA				
Protected Phases		4			8			2				
Permitted Phases	4					8	2					
Minimum Split (s)	16.0	16.0			16.0	16.0	17.0	17.0				
Total Split (s)	39.0	39.0			39.0	39.0	21.0	21.0				
Total Split (%)	65.0%	65.0%			65.0%	65.0%	35.0%	35.0%				
Yellow Time (s)	3.0	3.0			3.0	3.0	3.0	3.0				
All-Red Time (s)	1.0	1.0			1.0	1.0	1.0	1.0				
Lost Time Adjust (s)		0.0			0.0	0.0		0.0				
Total Lost Time (s)		4.0			4.0	4.0		4.0				
Lead/Lag												
Lead-Lag Optimize?												
Act Effct Green (s)		35.0			35.0	35.0		17.0				
Actuated g/C Ratio		0.58			0.58	0.58		0.28				
v/c Ratio		0.89			0.78	0.03		0.36				
Control Delay		7.6			18.2	3.4		18.2				
Queue Delay		0.0			0.0	0.0		0.0				
Total Delay		7.6			18.2	3.4		18.2				
LOS		A			B	A		B				
Approach Delay		7.6			17.6			18.2				
Approach LOS		A			B			B				
Queue Length 50th (ft)		20			156	1		41				

Lanes, Volumes, Timings  
 13: St Lawrence Avenue & 79th Street

11/22/2017



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Queue Length 95th (ft)		m22			#356	9		87				
Internal Link Dist (ft)		1253			580			608			570	
Turn Bay Length (ft)						30						
Base Capacity (vph)		809			833	795		448				
Starvation Cap Reductn		0			0	0		0				
Spillback Cap Reductn		0			0	0		0				
Storage Cap Reductn		0			0	0		0				
Reduced v/c Ratio		0.89			0.78	0.03		0.36				

Intersection Summary

Area Type: CBD  
 Cycle Length: 60  
 Actuated Cycle Length: 60  
 Offset: 52 (87%), Referenced to phase 2:NBT, Start of Green  
 Natural Cycle: 60  
 Control Type: Pretimed  
 Maximum v/c Ratio: 0.89  
 Intersection Signal Delay: 13.0 Intersection LOS: B  
 Intersection Capacity Utilization 80.5% ICU Level of Service D  
 Analysis Period (min) 15  
 # 95th percentile volume exceeds capacity, queue may be longer.  
 Queue shown is maximum after two cycles.  
 m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 13: St Lawrence Avenue & 79th Street



Lanes, Volumes, Timings  
14: Kenwood Avenue & 79th Street

11/22/2017



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔			↔						↕	
Traffic Volume (vph)	0	240	25	25	395	0	0	0	0	25	100	25
Future Volume (vph)	0	240	25	25	395	0	0	0	0	25	100	25
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Satd. Flow (prot)	0	1411	0	0	1583	0	0	0	0	0	1541	0
Flt Permitted					0.973						0.992	
Satd. Flow (perm)	0	1411	0	0	1545	0	0	0	0	0	1541	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		17									27	
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		344			1665			665			649	
Travel Time (s)		7.8			37.8			15.1			14.8	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Parking (#/hr)		0										
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	288	0	0	456	0	0	0	0	0	163	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.22	1.39	1.22	1.22	1.22	1.22	1.22	1.22	1.22	1.22	1.22	1.22
Turning Speed (mph)	15		9	15		9	15		9	15		9
Turn Type		NA		Perm	NA					Perm	NA	
Protected Phases		4			8						6	
Permitted Phases				8						6		
Minimum Split (s)		16.0		16.0	16.0					17.0	17.0	
Total Split (s)		22.0		22.0	22.0					18.0	18.0	
Total Split (%)		55.0%		55.0%	55.0%					45.0%	45.0%	
Yellow Time (s)		3.0		3.0	3.0					3.0	3.0	
All-Red Time (s)		1.0		1.0	1.0					1.0	1.0	
Lost Time Adjust (s)		0.0			0.0						0.0	
Total Lost Time (s)		4.0			4.0						4.0	
Lead/Lag												
Lead-Lag Optimize?												
Act Effct Green (s)		18.0			18.0						14.0	
Actuated g/C Ratio		0.45			0.45						0.35	
v/c Ratio		0.45			0.66						0.29	
Control Delay		9.9			14.5						9.8	
Queue Delay		0.0			0.0						0.0	
Total Delay		9.9			14.5						9.8	
LOS		A			B						A	
Approach Delay		9.9			14.5						9.8	
Approach LOS		A			B						A	
Queue Length 50th (ft)		37			72						21	
Queue Length 95th (ft)		82			#152						52	
Internal Link Dist (ft)		264			1585			585			569	
Turn Bay Length (ft)												

Lanes, Volumes, Timings  
 14: Kenwood Avenue & 79th Street

11/22/2017

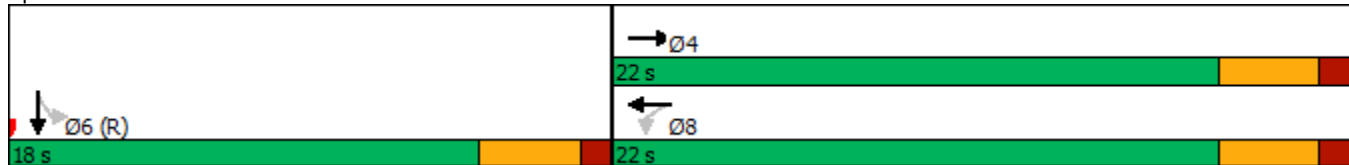


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Base Capacity (vph)		644			695							556
Starvation Cap Reductn		0			0							0
Spillback Cap Reductn		0			0							0
Storage Cap Reductn		0			0							0
Reduced v/c Ratio		0.45			0.66							0.29

Intersection Summary

Area Type: CBD  
 Cycle Length: 40  
 Actuated Cycle Length: 40  
 Offset: 0 (0%), Referenced to phase 6:SBTL, Start of Green  
 Natural Cycle: 40  
 Control Type: Pretimed  
 Maximum v/c Ratio: 0.66  
 Intersection Signal Delay: 12.2 Intersection LOS: B  
 Intersection Capacity Utilization 63.4% ICU Level of Service B  
 Analysis Period (min) 15  
 # 95th percentile volume exceeds capacity, queue may be longer.  
 Queue shown is maximum after two cycles.

Splits and Phases: 14: Kenwood Avenue & 79th Street

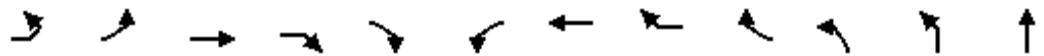




Lanes, Volumes, Timings

15: Stony Island Avenue & South Chicago Avenue & 79th Street

11/22/2017























Lane Group	EBL2	EBL	EBT	EBR	EBR2	WBL	WBT	WBR	WBR2	NBL2	NBL	NBT
Lane Configurations												
Traffic Volume (vph)	3	34	178	33	17	90	200	63	38	15	97	979
Future Volume (vph)	3	34	178	33	17	90	200	63	38	15	97	979
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (ft)		100		100		175		150			90	
Storage Lanes		1		1		1		1			1	
Taper Length (ft)		25				25					25	
Satd. Flow (prot)	0	1509	1588	1350	0	1509	1342	1350	0	0	1509	4336
Flt Permitted		0.272				0.341					0.950	
Satd. Flow (perm)	0	432	1588	1350	0	542	1342	1350	0	0	1509	4336
Right Turn on Red					Yes				Yes			
Satd. Flow (RTOR)				134				134				
Link Speed (mph)			30				30					30
Link Distance (ft)			1665				377					254
Travel Time (s)			37.8				8.6					5.8
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Parking (#/hr)							11					
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	39	187	53	0	95	211	106	0	0	118	1031
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Right	Left	Left	Right	Right	Left	Left	Left
Median Width(ft)			12				12					12
Link Offset(ft)			0				0					0
Crosswalk Width(ft)			16				16					16
Two way Left Turn Lane												
Headway Factor	1.22	1.22	1.22	1.22	1.22	1.22	1.50	1.22	1.22	1.22	1.22	1.22
Turning Speed (mph)	15	15		9	9	15		9	9	15	15	
Turn Type	Perm	Perm	NA	Perm		Perm	NA	Perm		Prot	Prot	NA
Protected Phases			4				8			5	5	2
Permitted Phases	4	4		4		8		8				
Detector Phase	4	4	4	4		8	8	8		5	5	2
Switch Phase												
Minimum Initial (s)	16.0	16.0	16.0	16.0		16.0	16.0	16.0		5.0	5.0	27.0
Minimum Split (s)	21.0	21.0	21.0	21.0		21.0	21.0	21.0		8.0	8.0	34.0
Total Split (s)	23.0	23.0	23.0	23.0		23.0	23.0	23.0		13.0	13.0	47.0
Total Split (%)	17.7%	17.7%	17.7%	17.7%		17.7%	17.7%	17.7%		10.0%	10.0%	36.2%
Yellow Time (s)	3.0	3.0	3.0	3.0		3.0	3.0	3.0		3.0	3.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0		2.0	2.0	2.0		0.0	0.0	3.0
Lost Time Adjust (s)		-1.0	-1.0	-1.0		-1.0	-1.0	-1.0			1.0	-3.0
Total Lost Time (s)		4.0	4.0	4.0		4.0	4.0	4.0			4.0	4.0
Lead/Lag										Lead	Lead	Lag
Lead-Lag Optimize?												
Recall Mode	None	None	None	None		None	None	None		None	None	C-Max
Act Effect Green (s)		19.0	19.0	19.0		19.0	19.0	19.0			9.0	44.8
Actuated g/C Ratio		0.15	0.15	0.15		0.15	0.15	0.15			0.07	0.34
v/c Ratio		0.62	0.81	0.17		1.20	1.08	0.34			1.13	0.69
Control Delay		92.3	79.3	1.2		188.9	120.5	8.0			182.0	39.9
Queue Delay		0.0	0.0	0.0		0.0	0.0	0.0			0.0	0.0
Total Delay		92.3	79.3	1.2		188.9	120.5	8.0			182.0	39.9

Lanes, Volumes, Timings

15: Stony Island Avenue & South Chicago Avenue & 79th Street

11/22/2017

												
Lane Group	NBR	NBR2	SBL2	SBL	SBT	SBR	SBR2	SET	SER	SER2	NWT	NWR
Lane Configurations												
Traffic Volume (vph)	99	4	32	188	2029	199	16	464	216	6	268	45
Future Volume (vph)	99	4	32	188	2029	199	16	464	216	6	268	45
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (ft)	130			0		0			0			0
Storage Lanes	2			1		1			0			0
Taper Length (ft)				25								
Satd. Flow (prot)	1350	0	0	1509	4336	1350	0	2873	0	0	2951	0
Flt Permitted				0.950								
Satd. Flow (perm)	1350	0	0	1509	4336	1350	0	2873	0	0	2951	0
Right Turn on Red		Yes					Yes			Yes		
Satd. Flow (RTOR)	117					92		1				
Link Speed (mph)					30			30				30
Link Distance (ft)					675			738				886
Travel Time (s)					15.3			16.8				20.1
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Parking (#/hr)												
Shared Lane Traffic (%)												
Lane Group Flow (vph)	108	0	0	232	2136	226	0	721	0	0	331	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Right	Right	Left	Left	Left	Right	Right	Left	Right	Right	Left	Right
Median Width(ft)					12			0				0
Link Offset(ft)					0			0				0
Crosswalk Width(ft)					16			16				16
Two way Left Turn Lane												
Headway Factor	1.22	1.22	1.22	1.22	1.22	1.22	1.22	1.22	1.22	1.22	1.22	1.22
Turning Speed (mph)	9	9	15	15		9	9		9	9		9
Turn Type	Perm		Prot	Prot	NA	Perm		NA			NA	
Protected Phases			1	1	6			10			14	
Permitted Phases	2					6						
Detector Phase	2		1	1	6	6		10			14	
Switch Phase												
Minimum Initial (s)	27.0		5.0	5.0	38.0	38.0		25.0			25.0	
Minimum Split (s)	34.0		8.0	8.0	45.0	45.0		31.0			31.0	
Total Split (s)	47.0		28.0	28.0	62.0	62.0		32.0			32.0	
Total Split (%)	36.2%		21.5%	21.5%	47.7%	47.7%		24.6%			24.6%	
Yellow Time (s)	4.0		3.0	3.0	4.0	4.0		4.0			4.0	
All-Red Time (s)	3.0		0.0	0.0	3.0	3.0		2.0			2.0	
Lost Time Adjust (s)	-3.0			1.0	-3.0	-3.0		-2.0			-2.0	
Total Lost Time (s)	4.0			4.0	4.0	4.0		4.0			4.0	
Lead/Lag	Lag		Lead	Lead	Lag	Lag						
Lead-Lag Optimize?												
Recall Mode	C-Max		None	None	C-Max	C-Max		None			None	
Act Effect Green (s)	44.8			22.2	58.0	58.0		28.0			28.0	
Actuated g/C Ratio	0.34			0.17	0.45	0.45		0.22			0.22	
v/c Ratio	0.20			0.90	1.10	0.35		1.16			0.52	
Control Delay	5.4			88.5	90.0	15.1		135.7			48.5	
Queue Delay	0.0			0.0	0.0	0.0		0.0			0.0	
Total Delay	5.4			88.5	90.0	15.1		135.7			48.5	

Lanes, Volumes, Timings  
 15: Stony Island Avenue & South Chicago Avenue & 79th Street

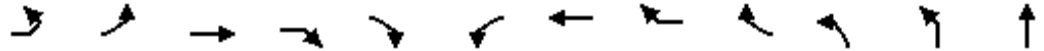
11/22/2017



Lane Group	NWR2
Lane Configurations	
Traffic Volume (vph)	2
Future Volume (vph)	2
Ideal Flow (vphpl)	1800
Storage Length (ft)	
Storage Lanes	
Taper Length (ft)	
Satd. Flow (prot)	0
Flt Permitted	
Satd. Flow (perm)	0
Right Turn on Red	Yes
Satd. Flow (RTOR)	
Link Speed (mph)	
Link Distance (ft)	
Travel Time (s)	
Peak Hour Factor	0.95
Parking (#/hr)	
Shared Lane Traffic (%)	
Lane Group Flow (vph)	0
Enter Blocked Intersection	No
Lane Alignment	Right
Median Width(ft)	
Link Offset(ft)	
Crosswalk Width(ft)	
Two way Left Turn Lane	
Headway Factor	1.22
Turning Speed (mph)	9
Turn Type	
Protected Phases	
Permitted Phases	
Detector Phase	
Switch Phase	
Minimum Initial (s)	
Minimum Split (s)	
Total Split (s)	
Total Split (%)	
Yellow Time (s)	
All-Red Time (s)	
Lost Time Adjust (s)	
Total Lost Time (s)	
Lead/Lag	
Lead-Lag Optimize?	
Recall Mode	
Act Effct Green (s)	
Actuated g/C Ratio	
v/c Ratio	
Control Delay	
Queue Delay	
Total Delay	

Lanes, Volumes, Timings  
 15: Stony Island Avenue & South Chicago Avenue & 79th Street

11/22/2017

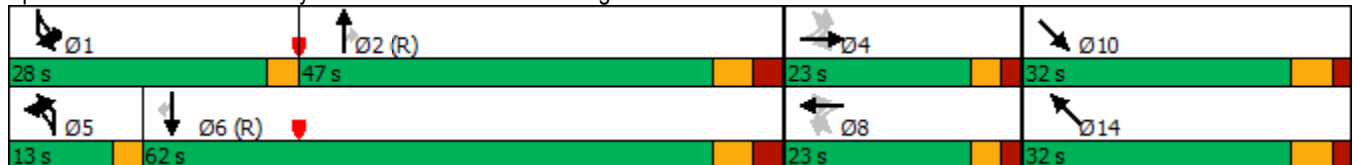


Lane Group	EBL2	EBL	EBT	EBR	EBR2	WBL	WBT	WBR	WBR2	NBL2	NBL	NBT
LOS		F	E	A		F	F	A			F	D
Approach Delay			66.3				107.3					50.3
Approach LOS			E				F					D
Queue Length 50th (ft)		31	155	0		~98	~198	8			~115	278
Queue Length 95th (ft)		#92	#278	0		m#149	m#307	m18			#243	333
Internal Link Dist (ft)			1585				297					174
Turn Bay Length (ft)		100		100		175		150			90	
Base Capacity (vph)		63	232	311		79	196	311			104	1495
Starvation Cap Reductn		0	0	0		0	0	0			0	0
Spillback Cap Reductn		0	0	0		0	0	0			0	0
Storage Cap Reductn		0	0	0		0	0	0			0	0
Reduced v/c Ratio		0.62	0.81	0.17		1.20	1.08	0.34			1.13	0.69

Intersection Summary

Area Type: CBD  
 Cycle Length: 130  
 Actuated Cycle Length: 130  
 Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBT, Start of Green  
 Natural Cycle: 135  
 Control Type: Actuated-Coordinated  
 Maximum v/c Ratio: 1.20  
 Intersection Signal Delay: 81.5 Intersection LOS: F  
 Intersection Capacity Utilization 120.0% ICU Level of Service H  
 Analysis Period (min) 15  
 ~ Volume exceeds capacity, queue is theoretically infinite.  
 Queue shown is maximum after two cycles.  
 # 95th percentile volume exceeds capacity, queue may be longer.  
 Queue shown is maximum after two cycles.  
 m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 15: Stony Island Avenue & South Chicago Avenue & 79th Street



Lanes, Volumes, Timings

15: Stony Island Avenue & South Chicago Avenue & 79th Street

11/22/2017



Lane Group	NBR	NBR2	SBL2	SBL	SBT	SBR	SBR2	SET	SER	SER2	NWT	NWR
LOS	A			F	F	B		F			D	
Approach Delay					83.3			135.7			48.5	
Approach LOS					F			F			D	
Queue Length 50th (ft)	0			190	~749	69		~380			131	
Queue Length 95th (ft)	36			#330	#843	132		#508			181	
Internal Link Dist (ft)					595			658			806	
Turn Bay Length (ft)	130											
Base Capacity (vph)	541			278	1934	653		619			635	
Starvation Cap Reductn	0			0	0	0		0			0	
Spillback Cap Reductn	0			0	0	0		0			0	
Storage Cap Reductn	0			0	0	0		0			0	
Reduced v/c Ratio	0.20			0.83	1.10	0.35		1.16			0.52	
Intersection Summary												



Lane Group	NWR2
LOS	
Approach Delay	
Approach LOS	
Queue Length 50th (ft)	
Queue Length 95th (ft)	
Internal Link Dist (ft)	
Turn Bay Length (ft)	
Base Capacity (vph)	
Starvation Cap Reductn	
Spillback Cap Reductn	
Storage Cap Reductn	
Reduced v/c Ratio	
Intersection Summary	

Lanes, Volumes, Timings  
16: 79th Street & Cregier Avenue

11/22/2017



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕				
Traffic Volume (vph)	25	286	0	0	366	366	25	100	25	0	0	0
Future Volume (vph)	25	286	0	0	366	366	25	100	25	0	0	0
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Satd. Flow (prot)	0	1418	0	0	1480	0	0	1541	0	0	0	0
Flt Permitted		0.927						0.992				
Satd. Flow (perm)	0	1320	0	0	1480	0	0	1541	0	0	0	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)					120			17				
Link Speed (mph)		30			30			30				30
Link Distance (ft)		946			328			89				655
Travel Time (s)		21.5			7.5			2.0				14.9
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Bus Blockages (#/hr)	0	1	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)		0										
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	338	0	0	796	0	0	163	0	0	0	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			0				0
Link Offset(ft)		0			0			0				0
Crosswalk Width(ft)		16			16			16				16
Two way Left Turn Lane												
Headway Factor	1.22	1.40	1.22	1.22	1.22	1.22	1.22	1.22	1.22	1.22	1.22	1.22
Turning Speed (mph)	15		9	15		9	15		9	15		9
Turn Type	Perm	NA			NA		Perm	NA				
Protected Phases		4			8			2				
Permitted Phases	4						2					
Detector Phase	4	4			8		2	2				
Switch Phase												
Minimum Initial (s)	15.0	15.0			15.0		19.0	19.0				
Minimum Split (s)	19.0	19.0			19.0		23.0	23.0				
Total Split (s)	39.0	39.0			39.0		26.0	26.0				
Total Split (%)	60.0%	60.0%			60.0%		40.0%	40.0%				
Yellow Time (s)	3.0	3.0			3.0		3.0	3.0				
All-Red Time (s)	1.0	1.0			1.0		1.0	1.0				
Lost Time Adjust (s)		0.0			0.0			0.0				
Total Lost Time (s)		4.0			4.0			4.0				
Lead/Lag												
Lead-Lag Optimize?												
Recall Mode	C-Max	C-Max			C-Max		None	None				
Act Effct Green (s)		43.4			43.4			19.0				
Actuated g/C Ratio		0.67			0.67			0.29				
v/c Ratio		0.38			0.77			0.35				
Control Delay		4.4			16.5			18.8				
Queue Delay		0.0			0.0			0.0				
Total Delay		4.4			16.5			18.8				
LOS		A			B			B				
Approach Delay		4.4			16.5			18.8				

Lanes, Volumes, Timings  
 16: 79th Street & Cregier Avenue

11/22/2017

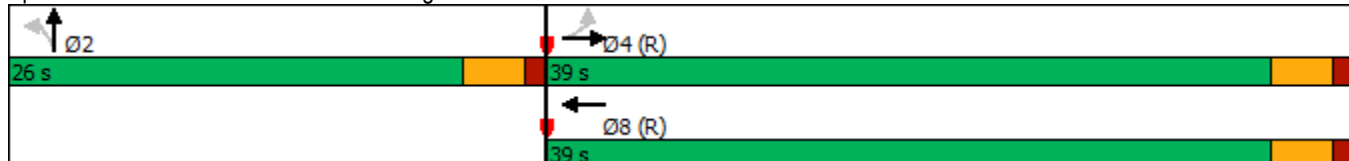


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Approach LOS		A				B				B		
Queue Length 50th (ft)		35				203				45		
Queue Length 95th (ft)		m54				#463				91		
Internal Link Dist (ft)		866				248				575		
Turn Bay Length (ft)												
Base Capacity (vph)		881				1028				532		
Starvation Cap Reductn		0				0				0		
Spillback Cap Reductn		0				0				0		
Storage Cap Reductn		0				0				0		
Reduced v/c Ratio		0.38				0.77				0.31		

Intersection Summary

Area Type: CBD  
 Cycle Length: 65  
 Actuated Cycle Length: 65  
 Offset: 5 (8%), Referenced to phase 4:EBTL and 8:WBT, Start of Green  
 Natural Cycle: 60  
 Control Type: Actuated-Coordinated  
 Maximum v/c Ratio: 0.77  
 Intersection Signal Delay: 13.6  
 Intersection LOS: B  
 Intersection Capacity Utilization 71.3%  
 ICU Level of Service C  
 Analysis Period (min) 15  
 # 95th percentile volume exceeds capacity, queue may be longer.  
 Queue shown is maximum after two cycles.  
 m Volume for 95th percentile queue is metered by upstream signal.

















Splits and Phases: 16: 79th Street & Cregier Avenue




















Lanes, Volumes, Timings  
58: Paulina Street & 79th Street

11/22/2017

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	540	0	0	675	0	8	0	28	29	0	5
Future Volume (vph)	0	540	0	0	675	0	8	0	28	29	0	5
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Satd. Flow (prot)	0	1306	0	0	1274	0	0	1393	0	0	1434	0
Flt Permitted								0.989			0.962	
Satd. Flow (perm)	0	1306	0	0	1274	0	0	1393	0	0	1434	0
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		648			666			663			663	
Travel Time (s)		14.7			15.1			15.1			15.1	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.67	0.92	0.70	0.66	0.92	0.42
Heavy Vehicles (%)	2%	11%	2%	2%	10%	2%	0%	2%	4%	7%	2%	0%
Bus Blockages (#/hr)	0	0	0	0	0	6	0	0	0	0	0	0
Parking (#/hr)		1			7							
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	587	0	0	734	0	0	52	0	0	56	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		9			9			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.22	1.40	1.22	1.22	1.46	1.22	1.22	1.22	1.22	1.22	1.22	1.22
Turning Speed (mph)	15		9	15		9	15		9	15		9
Sign Control		Stop			Stop			Stop			Stop	
<b>Intersection Summary</b>												
Area Type:	CBD											
Control Type:	Unsignalized											
Intersection Capacity Utilization	55.2%						ICU Level of Service B					
Analysis Period (min)	15											

Lanes, Volumes, Timings  
69: Union Avenue & 79th Street

11/22/2017

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	25	686	0	0	578	16	2	8	8	0	0	0
Future Volume (vph)	25	686	0	0	578	16	2	8	8	0	0	0
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Satd. Flow (prot)	0	1312	0	0	1322	0	0	1515	0	0	0	0
Flt Permitted		0.997						0.993				
Satd. Flow (perm)	0	1312	0	0	1322	0	0	1515	0	0	0	0
Link Speed (mph)		30			30			30				30
Link Distance (ft)		667			332			660				661
Travel Time (s)		15.2			7.5			15.0				15.0
Peak Hour Factor	0.52	0.95	0.92	0.92	0.96	0.50	0.50	0.67	0.67	0.92	0.92	0.92
Heavy Vehicles (%)	8%	11%	2%	2%	10%	0%	0%	0%	0%	2%	2%	2%
Parking (#/hr)		0			0							
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	770	0	0	634	0	0	28	0	0	0	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		9			9			0				0
Link Offset(ft)		0			0			0				0
Crosswalk Width(ft)		16			16			16				16
Two way Left Turn Lane												
Headway Factor	1.22	1.39	1.22	1.22	1.39	1.22	1.22	1.22	1.22	1.22	1.22	1.22
Turning Speed (mph)	15		9	15		9	15		9	15		9
Sign Control		Stop			Stop			Stop				Stop

Intersection Summary

Area Type:	CBD
Control Type:	Unsignalized
Intersection Capacity Utilization	76.1%
ICU Level of Service	D
Analysis Period (min)	15

**Synchro Reports -  
2040 Volumes  
Proposed Geometry  
Optimized**

# **AM Reports**

Lanes, Volumes, Timings  
1: W. Columbus Ave. & W. 79th St.

02/23/2018



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations	↘	↑↑	↗	↘	↑↑	↗		↑↑↑			↑↑	
Traffic Volume (vph)	313	484	7	110	358	1	1	879	131	0	550	150
Future Volume (vph)	313	484	7	110	358	1	1	879	131	0	550	150
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Width (ft)	10	10	10	10	10	11	12	12	10	12	11	11
Storage Length (ft)	180		100	0		0	0		115	0		0
Storage Lanes	1		1	1		1	0		0	0		0
Taper Length (ft)	75			0			25			0		
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	0.91	0.91	0.91	1.00	0.95	0.95
Fr <sub>t</sub>			0.850			0.850		0.981			0.968	
Fl <sub>t</sub> Protected	0.950			0.950								
Satd. Flow (prot)	1438	2669	1428	1451	2705	1450	0	4674	0	0	3044	0
Fl <sub>t</sub> Permitted	0.950			0.419				0.939				
Satd. Flow (perm)	1438	2669	1428	640	2705	1450	0	4389	0	0	3044	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			138			180		21			29	
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		965			345			696			414	
Travel Time (s)		21.9			7.8			15.8			9.4	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	11%	13%	0%	10%	18%	2%	0%	3%	4%	2%	3%	13%
Parking (#/hr)		2										
Adj. Flow (vph)	340	526	8	120	389	1	1	955	142	0	598	163
Shared Lane Traffic (%)												
Lane Group Flow (vph)	340	526	8	120	389	1	0	1098	0	0	761	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	L NA	Right	Left	Left	R NA	Left	Left	Right	Left	Left	Right
Median Width(ft)		10			10			0			0	
Link Offset(ft)		0			0			12			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.17	1.26	1.17	1.17	1.17	1.12	1.07	1.07	1.17	1.07	1.12	1.12
Turning Speed (mph)	15		9	15		9	15		9	15		9
Turn Type	Prot	NA	Perm	pm+pt	NA	custom	Perm	NA			NA	
Protected Phases	7	4 10		3	8	9		2			6	
Permitted Phases			4 10	8		8	2					
Minimum Split (s)	12.0			11.0	33.0	7.0	47.0	47.0			48.0	
Total Split (s)	36.0			21.0	33.0	7.0	47.0	47.0			54.0	
Total Split (%)	27.7%			16.2%	25.4%	5.4%	36.2%	36.2%			41.5%	
Maximum Green (s)	29.0			14.0	28.0	5.0	38.0	38.0			45.0	
Yellow Time (s)	3.0			3.0	3.0	2.0	3.0	3.0			3.0	
All-Red Time (s)	4.0			4.0	2.0	0.0	6.0	6.0			6.0	
Lost Time Adjust (s)	1.0			1.0	1.0	1.0		1.0			1.0	
Total Lost Time (s)	8.0			8.0	6.0	3.0		10.0			10.0	
Lead/Lag					Lag	Lead	Lag	Lag				
Lead-Lag Optimize?												
Walk Time (s)					5.0		4.0	4.0			5.0	
Flash Dont Walk (s)					22.0		34.0	34.0			34.0	
Pedestrian Calls (#/hr)					0		0	0			0	

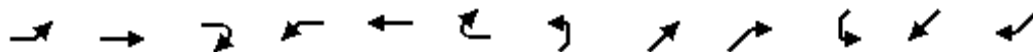
Lanes, Volumes, Timings  
 1: W. Columbus Ave. & W. 79th St.

02/23/2018

Lane Group	Ø1	Ø4	Ø10
Lane Configurations			
Traffic Volume (vph)			
Future Volume (vph)			
Ideal Flow (vphpl)			
Lane Width (ft)			
Storage Length (ft)			
Storage Lanes			
Taper Length (ft)			
Lane Util. Factor			
Frt			
Flt Protected			
Satd. Flow (prot)			
Flt Permitted			
Satd. Flow (perm)			
Right Turn on Red			
Satd. Flow (RTOR)			
Link Speed (mph)			
Link Distance (ft)			
Travel Time (s)			
Peak Hour Factor			
Heavy Vehicles (%)			
Parking (#/hr)			
Adj. Flow (vph)			
Shared Lane Traffic (%)			
Lane Group Flow (vph)			
Enter Blocked Intersection			
Lane Alignment			
Median Width(ft)			
Link Offset(ft)			
Crosswalk Width(ft)			
Two way Left Turn Lane			
Headway Factor			
Turning Speed (mph)			
Turn Type			
Protected Phases	1	4	10
Permitted Phases			
Minimum Split (s)	5.5	33.0	7.0
Total Split (s)	7.0	48.0	7.0
Total Split (%)	5%	37%	5%
Maximum Green (s)	3.5	43.0	5.0
Yellow Time (s)	3.0	3.0	2.0
All-Red Time (s)	0.5	2.0	0.0
Lost Time Adjust (s)			
Total Lost Time (s)			
Lead/Lag	Lead	Lag	Lead
Lead-Lag Optimize?			
Walk Time (s)		5.0	
Flash Dont Walk (s)		22.0	
Pedestrian Calls (#/hr)		0	

Lanes, Volumes, Timings  
 1: W. Columbus Ave. & W. 79th St.

02/23/2018



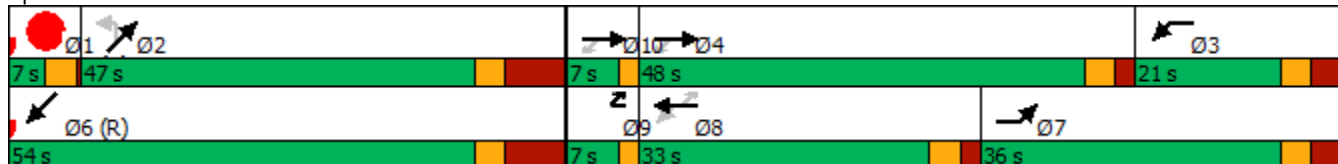
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NEL	NET	NER	SWL	SWT	SWR
Act Effct Green (s)	28.0	49.0	49.0	38.0	27.0	37.0		37.0			44.0	
Actuated g/C Ratio	0.22	0.38	0.38	0.29	0.21	0.28		0.28			0.34	
v/c Ratio	1.10	0.52	0.01	0.45	0.69	0.00		0.87			0.73	
Control Delay	127.9	33.7	0.0	58.1	58.2	0.0		51.9			32.3	
Queue Delay	0.0	0.2	0.0	0.0	0.1	0.0		0.2			2.7	
Total Delay	127.9	34.0	0.0	58.1	58.3	0.0		52.0			35.1	
LOS	F	C	A	E	E	A		D			D	
Approach Delay		70.2			58.2			52.0			35.1	
Approach LOS		E			E			D			D	
Stops (vph)	261	367	0	116	352	0		911			563	
Fuel Used(gal)	12	9	0	2	7	0		21			10	
CO Emissions (g/hr)	835	629	4	157	500	0		1480			697	
NOx Emissions (g/hr)	162	122	1	30	97	0		288			136	
VOC Emissions (g/hr)	194	146	1	36	116	0		343			162	
Dilemma Vehicles (#)	0	0	0	0	0	0		0			0	
Queue Length 50th (ft)	~324	179	0	96	180	0		317			279	
Queue Length 95th (ft)	#517	237	0	156	232	m0		378			334	
Internal Link Dist (ft)		885			265			616			334	
Turn Bay Length (ft)	180		100									
Base Capacity (vph)	309	1006	624	268	561	541		1264			1049	
Starvation Cap Reductn	0	0	0	0	8	0		0			180	
Spillback Cap Reductn	0	98	0	0	0	0		9			0	
Storage Cap Reductn	0	0	0	0	0	0		0			0	
Reduced v/c Ratio	1.10	0.58	0.01	0.45	0.70	0.00		0.87			0.88	

Intersection Summary

Area Type: Other  
 Cycle Length: 130  
 Actuated Cycle Length: 130  
 Offset: 0 (0%), Referenced to phase 1:Hold and 6:SWT, Start of Green, Master Intersection  
 Natural Cycle: 125  
 Control Type: Pretimed  
 Maximum v/c Ratio: 1.10  
 Intersection Signal Delay: 53.9 Intersection LOS: D  
 Intersection Capacity Utilization 93.3% ICU Level of Service F  
 Analysis Period (min) 15

- ~ Volume exceeds capacity, queue is theoretically infinite.  
Queue shown is maximum after two cycles.
- # 95th percentile volume exceeds capacity, queue may be longer.  
Queue shown is maximum after two cycles.
- m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 1: W. Columbus Ave. & W. 79th St.



Lane Group	Ø1	Ø4	Ø10
Act Effct Green (s)			
Actuated g/C Ratio			
v/c Ratio			
Control Delay			
Queue Delay			
Total Delay			
LOS			
Approach Delay			
Approach LOS			
Stops (vph)			
Fuel Used(gal)			
CO Emissions (g/hr)			
NOx Emissions (g/hr)			
VOC Emissions (g/hr)			
Dilemma Vehicles (#)			
Queue Length 50th (ft)			
Queue Length 95th (ft)			
Internal Link Dist (ft)			
Turn Bay Length (ft)			
Base Capacity (vph)			
Starvation Cap Reductn			
Spillback Cap Reductn			
Storage Cap Reductn			
Reduced v/c Ratio			
<b>Intersection Summary</b>			



Lanes, Volumes, Timings  
2: S. Kedzie Ave. & W. 79th St.

02/23/2018



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑	↗	↖	↑↑			↔			↔	
Traffic Volume (vph)	0	521	94	8	369	41	94	614	24	9	463	5
Future Volume (vph)	0	521	94	8	369	41	94	614	24	9	463	5
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Width (ft)	11	11	12	9	11	12	12	11	12	12	11	12
Storage Length (ft)	0		0	40		0	0		0	0		0
Storage Lanes	0		1	1		0	0		0	0		0
Taper Length (ft)	0			25			0			0		
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Fr <sub>t</sub>			0.850		0.985			0.995			0.999	
Fl <sub>t</sub> Protected				0.950				0.994			0.999	
Satd. Flow (prot)	0	2978	1436	1193	2817	0	0	3167	0	0	3168	0
Fl <sub>t</sub> Permitted				0.312				0.723			0.936	
Satd. Flow (perm)	0	2978	1436	392	2817	0	0	2304	0	0	2968	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			102		9			4			1	
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		345			652			668			245	
Travel Time (s)		7.8			14.8			15.2			5.6	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	2%	11%	4%	29%	16%	12%	3%	3%	10%	0%	3%	0%
Bus Blockages (#/hr)	0	0	6	0	0	0	0	0	0	0	6	0
Adj. Flow (vph)	0	566	102	9	401	45	102	667	26	10	503	5
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	566	102	9	446	0	0	795	0	0	518	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	R NA	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		2			9			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.12	1.12	1.11	1.22	1.12	1.07	1.07	1.12	1.07	1.07	1.14	1.07
Turning Speed (mph)	15		9	15		9	15		9	15		9
Turn Type		NA	custom	custom	NA		pm+pt	NA		Perm	NA	
Protected Phases		4	9		8 10		5	2			6	
Permitted Phases			4	8			2			6		
Minimum Split (s)		23.0	7.0	23.0			11.0	34.0		34.0	34.0	
Total Split (s)		45.0	8.0	44.0			11.0	78.0		67.0	67.0	
Total Split (%)		34.6%	6.2%	33.8%			8.5%	60.0%		51.5%	51.5%	
Maximum Green (s)		40.0	6.0	39.0			6.0	73.0		62.0	62.0	
Yellow Time (s)		3.0	2.0	3.0			3.0	3.0		3.0	3.0	
All-Red Time (s)		2.0	0.0	2.0			2.0	2.0		2.0	2.0	
Lost Time Adjust (s)		1.0	1.0	1.0				1.0			1.0	
Total Lost Time (s)		6.0	3.0	6.0				6.0			6.0	
Lead/Lag							Lead			Lag	Lag	
Lead-Lag Optimize?												
Walk Time (s)		5.0		5.0				5.0		5.0	5.0	
Flash Dont Walk (s)		13.0		13.0				23.0		23.0	23.0	
Pedestrian Calls (#/hr)		0		0				0		0	0	

Lane Group	Ø10
Lane Configurations	
Traffic Volume (vph)	
Future Volume (vph)	
Ideal Flow (vphpl)	
Lane Width (ft)	
Storage Length (ft)	
Storage Lanes	
Taper Length (ft)	
Lane Util. Factor	
Fr <sub>t</sub>	
Fl <sub>t</sub> Protected	
Satd. Flow (prot)	
Fl <sub>t</sub> Permitted	
Satd. Flow (perm)	
Right Turn on Red	
Satd. Flow (RTOR)	
Link Speed (mph)	
Link Distance (ft)	
Travel Time (s)	
Peak Hour Factor	
Heavy Vehicles (%)	
Bus Blockages (#/hr)	
Adj. Flow (vph)	
Shared Lane Traffic (%)	
Lane Group Flow (vph)	
Enter Blocked Intersection	
Lane Alignment	
Median Width(ft)	
Link Offset(ft)	
Crosswalk Width(ft)	
Two way Left Turn Lane	
Headway Factor	
Turning Speed (mph)	
Turn Type	
Protected Phases	10
Permitted Phases	
Minimum Split (s)	7.0
Total Split (s)	7.0
Total Split (%)	5%
Maximum Green (s)	5.0
Yellow Time (s)	2.0
All-Red Time (s)	0.0
Lost Time Adjust (s)	
Total Lost Time (s)	
Lead/Lag	
Lead-Lag Optimize?	
Walk Time (s)	
Flash Dont Walk (s)	
Pedestrian Calls (#/hr)	

Lanes, Volumes, Timings  
 2: S. Kedzie Ave. & W. 79th St.

02/23/2018



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Act Effct Green (s)		39.0	47.0	38.0	39.0			72.0				61.0
Actuated g/C Ratio		0.30	0.36	0.29	0.30			0.55				0.47
v/c Ratio		0.63	0.17	0.08	0.52			0.61				0.37
Control Delay		56.8	21.1	35.9	39.3			21.0				9.1
Queue Delay		7.9	0.0	0.0	0.0			1.0				0.1
Total Delay		64.7	21.1	35.9	39.3			22.0				9.3
LOS		E	C	D	D			C				A
Approach Delay		58.1			39.2			22.0				9.3
Approach LOS		E			D			C				A
Stops (vph)		468	46	6	301			417				69
Fuel Used(gal)		10	1	0	7			9				2
CO Emissions (g/hr)		700	64	9	491			646				152
NOx Emissions (g/hr)		136	12	2	96			126				30
VOC Emissions (g/hr)		162	15	2	114			150				35
Dilemma Vehicles (#)		0	0	0	0			0				0
Queue Length 50th (ft)		238	37	6	147			200				35
Queue Length 95th (ft)		m294	m79	21	198			251				45
Internal Link Dist (ft)		265			572			588				165
Turn Bay Length (ft)				40								
Base Capacity (vph)		893	584	114	851			1311				1393
Starvation Cap Reductn		283	0	0	0			0				225
Spillback Cap Reductn		0	0	0	0			268				0
Storage Cap Reductn		0	0	0	0			0				0
Reduced v/c Ratio		0.93	0.17	0.08	0.52			0.76				0.44

Intersection Summary

Area Type: Other  
 Cycle Length: 130  
 Actuated Cycle Length: 130  
 Offset: 49 (38%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green  
 Natural Cycle: 75  
 Control Type: Pretimed  
 Maximum v/c Ratio: 0.63  
 Intersection Signal Delay: 32.4 Intersection LOS: C  
 Intersection Capacity Utilization 76.9% ICU Level of Service D  
 Analysis Period (min) 15  
 m Volume for 95th percentile queue is metered by upstream signal.




















Splits and Phases: 2: S. Kedzie Ave. & W. 79th St.



Lane Group	Ø10
Act Effct Green (s)	
Actuated g/C Ratio	
v/c Ratio	
Control Delay	
Queue Delay	
Total Delay	
LOS	
Approach Delay	
Approach LOS	
Stops (vph)	
Fuel Used(gal)	
CO Emissions (g/hr)	
NOx Emissions (g/hr)	
VOC Emissions (g/hr)	
Dilemma Vehicles (#)	
Queue Length 50th (ft)	
Queue Length 95th (ft)	
Internal Link Dist (ft)	
Turn Bay Length (ft)	
Base Capacity (vph)	
Starvation Cap Reductn	
Spillback Cap Reductn	
Storage Cap Reductn	
Reduced v/c Ratio	
Intersection Summary	

Lanes, Volumes, Timings  
 3: W. Columbus Ave. & S. Kedzie Ave.

02/23/2018

												
Lane Group	NBL	NBT	NBR	SBL	SBT	SBR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Traffic Volume (vph)	1	527	127	7	404	407	508	681	3	70	292	54
Future Volume (vph)	1	527	127	7	404	407	508	681	3	70	292	54
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Width (ft)	12	11	12	12	10	10	11	11	11	10	11	12
Storage Length (ft)	0		0	0		100	0		0	90		0
Storage Lanes	0		0	0		1	1		0	1		0
Taper Length (ft)	0			0			0			25		
Lane Util. Factor	0.95	0.95	0.95	0.95	0.95	1.00	1.00	0.95	0.95	1.00	0.95	0.95
Fr <sub>t</sub>		0.971				0.850		0.999			0.976	
Fl <sub>t</sub> Protected					0.999		0.950			0.950		
Satd. Flow (prot)	0	3087	0	0	3042	1360	1574	3172	0	1580	2996	0
Fl <sub>t</sub> Permitted		0.955			0.938		0.472			0.263		
Satd. Flow (perm)	0	2948	0	0	2856	1360	782	3172	0	437	2996	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		24				235		1			16	
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		245			494			414			728	
Travel Time (s)		5.6			11.2			9.4			16.5	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	0%	4%	4%	50%	4%	5%	5%	4%	33%	1%	8%	6%
Adj. Flow (vph)	1	573	138	8	439	442	552	740	3	76	317	59
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	712	0	0	447	442	552	743	0	76	376	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			11			11	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.07	1.12	1.07	1.07	1.17	1.17	1.12	1.12	1.12	1.17	1.12	1.07
Turning Speed (mph)	15		9	15		9	15		9	15		9
Turn Type	Perm	NA		Perm	NA	pm+ov	pm+pt	NA		Perm	NA	
Protected Phases		2			6	7	7	4			8	
Permitted Phases	2			6		6	4			8		
Minimum Split (s)	28.0	28.0		28.0	28.0	11.0	11.0	26.0		26.0	26.0	
Total Split (s)	48.0	48.0		48.0	48.0	40.0	40.0	82.0		42.0	42.0	
Total Split (%)	36.9%	36.9%		36.9%	36.9%	30.8%	30.8%	63.1%		32.3%	32.3%	
Maximum Green (s)	42.0	42.0		42.0	42.0	34.0	34.0	78.5		36.0	36.0	
Yellow Time (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0		3.0	3.0	
All-Red Time (s)	3.0	3.0		3.0	3.0	3.0	3.0	0.5		3.0	3.0	
Lost Time Adjust (s)		1.0			1.0	1.0	1.0	1.0		1.0	1.0	
Total Lost Time (s)		7.0			7.0	7.0	7.0	4.5		7.0	7.0	
Lead/Lag						Lag	Lag			Lead	Lead	
Lead-Lag Optimize?						Yes	Yes			Yes	Yes	
Walk Time (s)	5.0	5.0		5.0	5.0					5.0	5.0	
Flash Dont Walk (s)	17.0	17.0		17.0	17.0					15.0	15.0	
Pedestrian Calls (#/hr)	0	0		0	0					0	0	
Act Effct Green (s)		41.0			41.0	81.0	75.0	77.5		35.0	35.0	



Lanes, Volumes, Timings  
4: Ashland Avenue & 79th Street

02/23/2018



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	107	526	48	41	394	62	52	643	56	35	379	45
Future Volume (vph)	107	526	48	41	394	62	52	643	56	35	379	45
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Width (ft)	9	10	10	9	10	11	10	11	11	10	11	11
Storage Length (ft)	80		100	60		30	100		30	100		30
Storage Lanes	1		1	1		1	1		1	1		1
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Ped Bike Factor	0.98		0.94	0.98		0.95	0.93		0.87	0.97		0.86
Frt			0.850			0.850			0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1539	1268	1360	1494	1321	1324	1425	2667	977	1506	2661	906
Flt Permitted	0.445			0.323			0.499			0.272		
Satd. Flow (perm)	706	1268	1272	499	1321	1255	697	2667	854	418	2661	778
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			55			55			55			55
Link Speed (mph)		30			30			30				30
Link Distance (ft)		664			1315			665				670
Travel Time (s)		15.1			29.9			15.1				15.2
Confl. Peds. (#/hr)	41		54	54		41	47		41	41		47
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Heavy Vehicles (%)	0%	10%	5%	3%	10%	9%	12%	6%	4%	6%	5%	9%
Bus Blockages (#/hr)	0	0	0	0	0	6	0	0	8	0	0	8
Parking (#/hr)		14			7			38	38		42	42
Adj. Flow (vph)	118	578	53	45	433	68	57	707	62	38	416	49
Shared Lane Traffic (%)												
Lane Group Flow (vph)	118	578	53	45	433	68	57	707	62	38	416	49
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			10				10
Link Offset(ft)		0			0			0				0
Crosswalk Width(ft)		16			16			16				16
Two way Left Turn Lane												
Headway Factor	1.22	1.47	1.17	1.22	1.40	1.15	1.17	1.36	1.77	1.17	1.38	1.83
Turning Speed (mph)	15		9	15		9	15		9	15		9
Turn Type	Perm	NA	Perm	Perm	NA	Perm	Perm	NA	Perm	Perm	NA	Perm
Protected Phases		4			8			2			6	
Permitted Phases	4		4	8		8	2		2	6		6
Minimum Split (s)	38.0	38.0	38.0	38.0	38.0	38.0	27.0	27.0	27.0	27.0	27.0	27.0
Total Split (s)	60.0	60.0	60.0	60.0	60.0	60.0	40.0	40.0	40.0	40.0	40.0	40.0
Total Split (%)	60.0%	60.0%	60.0%	60.0%	60.0%	60.0%	40.0%	40.0%	40.0%	40.0%	40.0%	40.0%
Maximum Green (s)	52.0	52.0	52.0	52.0	52.0	52.0	32.0	32.0	32.0	32.0	32.0	32.0
Yellow Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
All-Red Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Lost Time Adjust (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Total Lost Time (s)	9.0	9.0	9.0	9.0	9.0	9.0	9.0	9.0	9.0	9.0	9.0	9.0
Lead/Lag												
Lead-Lag Optimize?												





Lanes, Volumes, Timings  
5: Loomis Blvd & 79th Street

02/23/2018



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	25	567	25	25	447	25	25	100	25	25	100	25
Future Volume (vph)	25	567	25	25	447	25	25	100	25	25	100	25
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (ft)	60		30	60		30	0		0	0		0
Storage Lanes	1		1	1		1	0		0	0		0
Taper Length (ft)	25			25			0			0		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.850			0.850		0.978			0.978	
Flt Protected	0.950			0.950				0.992			0.992	
Satd. Flow (prot)	1676	1588	1464	1676	1588	1500	0	1712	0	0	1712	0
Flt Permitted	0.438			0.358				0.939			0.939	
Satd. Flow (perm)	773	1588	1464	632	1588	1500	0	1621	0	0	1621	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			11			14		9			9	
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		1315			357			644			631	
Travel Time (s)		29.9			8.1			14.6			14.3	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Bus Blockages (#/hr)	0	0	6	0	0	0	0	0	0	0	0	0
Parking (#/hr)		0			0							
Adj. Flow (vph)	27	616	27	27	486	27	27	109	27	27	109	27
Shared Lane Traffic (%)												
Lane Group Flow (vph)	27	616	27	27	486	27	0	163	0	0	163	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.07	1.22	1.11	1.07	1.22	1.07	1.07	1.07	1.07	1.07	1.07	1.07
Turning Speed (mph)	15		9	15		9	15		9	15		9
Turn Type	Perm	NA	Perm	Perm	NA	Perm	Perm	NA		Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4		4	8		8	2			6		
Minimum Split (s)	18.0	18.0	18.0	18.0	18.0	18.0	19.0	19.0		19.0	19.0	
Total Split (s)	73.0	73.0	73.0	73.0	73.0	73.0	27.0	27.0		27.0	27.0	
Total Split (%)	73.0%	73.0%	73.0%	73.0%	73.0%	73.0%	27.0%	27.0%		27.0%	27.0%	
Maximum Green (s)	69.0	69.0	69.0	69.0	69.0	69.0	23.5	23.5		23.5	23.5	
Yellow Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	2.5	2.5		2.5	2.5	
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0		1.0	1.0	
Lost Time Adjust (s)	0.0	1.0	1.0	0.0	1.0	1.0		1.0			1.0	
Total Lost Time (s)	4.0	5.0	5.0	4.0	5.0	5.0		4.5			4.5	
Lead/Lag												
Lead-Lag Optimize?												
Walk Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0		5.0	5.0	
Flash Dont Walk (s)	9.0	9.0	9.0	9.0	9.0	9.0	10.0	10.0		10.0	10.0	
Pedestrian Calls (#/hr)	0	0	0	0	0	0	0	0		0	0	
Act Efect Green (s)	69.0	68.0	68.0	69.0	68.0	68.0		22.5			22.5	

Lanes, Volumes, Timings  
5: Loomis Blvd & 79th Street

02/23/2018

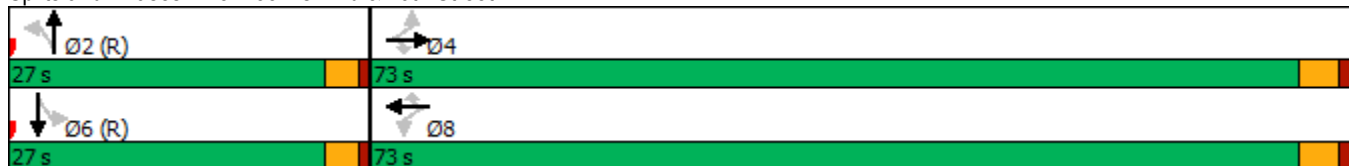


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Actuated g/C Ratio	0.69	0.68	0.68	0.69	0.68	0.68		0.22				0.22
v/c Ratio	0.05	0.57	0.03	0.06	0.45	0.03		0.44				0.44
Control Delay	4.1	5.9	3.0	5.5	9.0	3.4		35.8				35.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0		0.0				0.0
Total Delay	4.1	5.9	3.0	5.5	9.0	3.4		35.8				35.8
LOS	A	A	A	A	A	A		D				D
Approach Delay		5.7			8.5			35.8				35.8
Approach LOS		A			A			D				D
Stops (vph)	6	109	5	9	195	6		120				120
Fuel Used(gal)	0	7	0	0	3	0		3				2
CO Emissions (g/hr)	22	496	21	10	220	8		175				174
NOx Emissions (g/hr)	4	97	4	2	43	2		34				34
VOC Emissions (g/hr)	5	115	5	2	51	2		41				40
Dilemma Vehicles (#)	0	0	0	0	0	0		0				0
Queue Length 50th (ft)	3	64	1	5	127	2		85				85
Queue Length 95th (ft)	m5	m119	m3	14	191	11		148				148
Internal Link Dist (ft)		1235			277			564				551
Turn Bay Length (ft)	60		30	60		30						
Base Capacity (vph)	533	1079	999	436	1079	1024		371				371
Starvation Cap Reductn	0	0	0	0	0	0		0				0
Spillback Cap Reductn	0	0	0	0	0	0		0				0
Storage Cap Reductn	0	0	0	0	0	0		0				0
Reduced v/c Ratio	0.05	0.57	0.03	0.06	0.45	0.03		0.44				0.44

Intersection Summary






















Area Type: Other  
 Cycle Length: 100  
 Actuated Cycle Length: 100  
 Offset: 18 (18%), Referenced to phase 2:NBT and 6:SBTL, Start of Green  
 Natural Cycle: 55  
 Control Type: Pretimed  
 Maximum v/c Ratio: 0.57  
 Intersection Signal Delay: 13.1  
 Intersection LOS: B  
 Intersection Capacity Utilization 51.9%  
 ICU Level of Service A  
 Analysis Period (min) 15  
 m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 5: Loomis Blvd & 79th Street



Lanes, Volumes, Timings  
6: Morgan Street & 79th Street

02/23/2018

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	25	607	25	25	510	25	25	100	25	25	100	25
Future Volume (vph)	25	607	25	25	510	25	25	100	25	25	100	25
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (ft)	100		30	100		30	0		0	0		0
Storage Lanes	1		1	1		1	0		0	0		0
Taper Length (ft)	25			25			0			0		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.850			0.850		0.978			0.978	
Flt Protected	0.950			0.950				0.992			0.992	
Satd. Flow (prot)	1676	1588	1500	1676	1571	1500	0	1712	0	0	1712	0
Flt Permitted	0.398			0.334				0.941			0.941	
Satd. Flow (perm)	702	1588	1500	589	1571	1500	0	1624	0	0	1624	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			11			13		10			10	
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		323			1321			593			659	
Travel Time (s)		7.3			30.0			13.5			15.0	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Parking (#/hr)		0			2							
Adj. Flow (vph)	27	660	27	27	554	27	27	109	27	27	109	27
Shared Lane Traffic (%)												
Lane Group Flow (vph)	27	660	27	27	554	27	0	163	0	0	163	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.07	1.22	1.07	1.07	1.24	1.07	1.07	1.07	1.07	1.07	1.07	1.07
Turning Speed (mph)	15		9	15		9	15		9	15		9
Turn Type	Perm	NA	Perm	Perm	NA	Perm	Perm	NA		Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4		4	8		8	2			6		
Minimum Split (s)	17.0	17.0	17.0	17.0	17.0	17.0	21.0	21.0		21.0	21.0	
Total Split (s)	66.0	66.0	66.0	66.0	66.0	66.0	24.0	24.0		24.0	24.0	
Total Split (%)	73.3%	73.3%	73.3%	73.3%	73.3%	73.3%	26.7%	26.7%		26.7%	26.7%	
Maximum Green (s)	62.0	62.0	62.0	62.0	62.0	62.0	20.5	20.5		20.5	20.5	
Yellow Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	2.5	2.5		2.5	2.5	
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0		1.0	1.0	
Lost Time Adjust (s)	1.0	1.0	1.0	1.0	1.0	1.0		1.0			1.0	
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0	5.0		4.5			4.5	
Lead/Lag												
Lead-Lag Optimize?												
Walk Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0		5.0	5.0	
Flash Dont Walk (s)	8.0	8.0	8.0	8.0	8.0	8.0	12.0	12.0		12.0	12.0	
Pedestrian Calls (#/hr)	0	0	0	0	0	0	0	0		0	0	
Act Effct Green (s)	61.0	61.0	61.0	61.0	61.0	61.0		19.5			19.5	
Actuated g/C Ratio	0.68	0.68	0.68	0.68	0.68	0.68		0.22			0.22	

Lanes, Volumes, Timings  
6: Morgan Street & 79th Street

02/23/2018

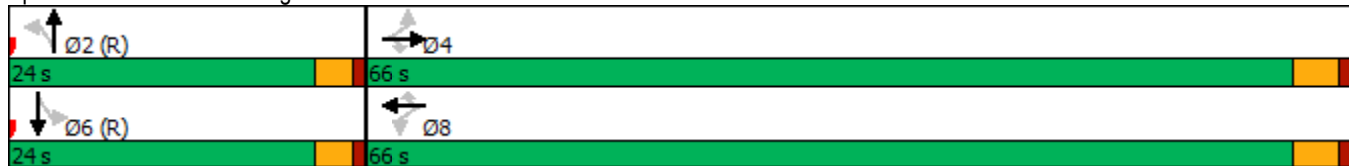


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
v/c Ratio	0.06	0.61	0.03	0.07	0.52	0.03		0.45				0.45
Control Delay	5.2	11.1	3.5	2.5	8.8	1.2		33.4				33.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0		0.0				0.0
Total Delay	5.2	11.1	3.5	2.5	8.8	1.2		33.4				33.4
LOS	A	B	A	A	A	A		C				C
Approach Delay		10.6			8.2			33.4				33.4
Approach LOS		B			A			C				C
Stops (vph)	9	319	6	6	392	4		120				120
Fuel Used(gal)	0	5	0	0	8	0		2				2
CO Emissions (g/hr)	10	326	8	21	582	20		166				172
NOx Emissions (g/hr)	2	63	2	4	113	4		32				33
VOC Emissions (g/hr)	2	75	2	5	135	5		39				40
Dilemma Vehicles (#)	0	0	0	0	0	0		0				0
Queue Length 50th (ft)	5	181	3	3	256	2		76				76
Queue Length 95th (ft)	13	281	10	m4	m282	m2		137				137
Internal Link Dist (ft)		243			1241			513				579
Turn Bay Length (ft)	100		30	100		30						
Base Capacity (vph)	475	1076	1020	399	1064	1020		359				359
Starvation Cap Reductn	0	0	0	0	0	0		0				0
Spillback Cap Reductn	0	0	0	0	0	0		0				0
Storage Cap Reductn	0	0	0	0	0	0		0				0
Reduced v/c Ratio	0.06	0.61	0.03	0.07	0.52	0.03		0.45				0.45

Intersection Summary

























Area Type: Other  
 Cycle Length: 90  
 Actuated Cycle Length: 90  
 Offset: 57 (63%), Referenced to phase 2:NBT and 6:SBTL, Start of Green  
 Natural Cycle: 60  
 Control Type: Pretimed  
 Maximum v/c Ratio: 0.61  
 Intersection Signal Delay: 14.2 Intersection LOS: B  
 Intersection Capacity Utilization 55.8% ICU Level of Service B  
 Analysis Period (min) 15  
 m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 6: Morgan Street & 79th Street



Lanes, Volumes, Timings  
7: Halsted Street & 79th Street

02/23/2018

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	45	541	71	33	453	39	67	501	57	31	236	40
Future Volume (vph)	45	541	71	33	453	39	67	501	57	31	236	40
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Width (ft)	9	10	10	9	10	10	10	11	13	10	10	13
Storage Length (ft)	100		100	60		100	100		100	100		100
Storage Lanes	1		1	1		1	1		1	1		1
Taper Length (ft)	100			100			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.850			0.850			0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1539	1375	1389	1539	1356	1386	1596	1689	1520	1550	1585	1506
Flt Permitted	0.368			0.282			0.569			0.213		
Satd. Flow (perm)	596	1375	1389	457	1356	1386	956	1689	1520	347	1585	1506
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			49			48			48			48
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		1321			665			631			665	
Travel Time (s)		30.0			15.1			14.3			15.1	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	0%	10%	2%	0%	9%	3%	0%	3%	4%	3%	6%	5%
Bus Blockages (#/hr)	0	0	2	0	0	0	0	0	0	0	0	0
Parking (#/hr)		0			4							
Adj. Flow (vph)	49	588	77	36	492	42	73	545	62	34	257	43
Shared Lane Traffic (%)												
Lane Group Flow (vph)	49	588	77	36	492	42	73	545	62	34	257	43
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			11			10			10	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.22	1.33	1.18	1.22	1.37	1.17	1.17	1.12	1.03	1.17	1.17	1.03
Turning Speed (mph)	15		9	15		9	15		9	15		9
Turn Type	Perm	NA	Perm	Perm	NA	Perm	Perm	NA	Perm	Perm	NA	Perm
Protected Phases		4			8			2			6	
Permitted Phases	4		4	8		8	2		2	6		6
Minimum Split (s)	30.0	30.0	30.0	30.0	30.0	30.0	27.0	27.0	27.0	27.0	27.0	27.0
Total Split (s)	50.0	50.0	50.0	50.0	50.0	50.0	40.0	40.0	40.0	40.0	40.0	40.0
Total Split (%)	55.6%	55.6%	55.6%	55.6%	55.6%	55.6%	44.4%	44.4%	44.4%	44.4%	44.4%	44.4%
Maximum Green (s)	43.0	43.0	43.0	43.0	43.0	43.0	33.0	33.0	33.0	33.0	33.0	33.0
Yellow Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
All-Red Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lost Time Adjust (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Total Lost Time (s)	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0
Lead/Lag												
Lead-Lag Optimize?												
Walk Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Flash Dont Walk (s)	18.0	18.0	18.0	18.0	18.0	18.0	15.0	15.0	15.0	15.0	15.0	15.0

Lanes, Volumes, Timings  
7: Halsted Street & 79th Street

02/23/2018



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Pedestrian Calls (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Act Effct Green (s)	42.0	42.0	42.0	42.0	42.0	42.0	32.0	32.0	32.0	32.0	32.0	32.0
Actuated g/C Ratio	0.47	0.47	0.47	0.47	0.47	0.47	0.36	0.36	0.36	0.36	0.36	0.36
v/c Ratio	0.18	0.92	0.11	0.17	0.78	0.06	0.22	0.91	0.11	0.28	0.46	0.08
Control Delay	9.5	36.4	3.7	16.5	30.6	3.9	22.4	49.3	8.6	28.1	25.6	5.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	9.5	36.4	3.7	16.5	30.6	3.9	22.4	49.3	8.6	28.1	25.6	5.8
LOS	A	D	A	B	C	A	C	D	A	C	C	A
Approach Delay		31.0			27.8			42.7				23.3
Approach LOS		C			C			D				C
Stops (vph)	27	454	21	20	365	7	46	428	16	26	178	7
Fuel Used(gal)	1	12	1	0	7	0	1	10	0	0	3	0
CO Emissions (g/hr)	49	845	63	27	503	19	62	689	33	34	240	21
NOx Emissions (g/hr)	10	164	12	5	98	4	12	134	6	7	47	4
VOC Emissions (g/hr)	11	196	15	6	116	4	14	160	8	8	56	5
Dilemma Vehicles (#)	0	0	0	0	0	0	0	0	0	0	0	0
Queue Length 50th (ft)	15	308	12	11	225	0	29	291	5	14	111	0
Queue Length 95th (ft)	m21	#527	m17	32	#400	15	62	#489	31	41	182	19
Internal Link Dist (ft)		1241			585			551				585
Turn Bay Length (ft)	100		100	60		100	100		100	100		100
Base Capacity (vph)	278	641	674	213	632	672	339	600	571	123	563	566
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.18	0.92	0.11	0.17	0.78	0.06	0.22	0.91	0.11	0.28	0.46	0.08

Intersection Summary

Area Type: Other

Cycle Length: 90

Actuated Cycle Length: 90

Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green

Natural Cycle: 90

Control Type: Pretimed

Maximum v/c Ratio: 0.92

Intersection Signal Delay: 32.5

Intersection LOS: C

Intersection Capacity Utilization 104.0%

ICU Level of Service G

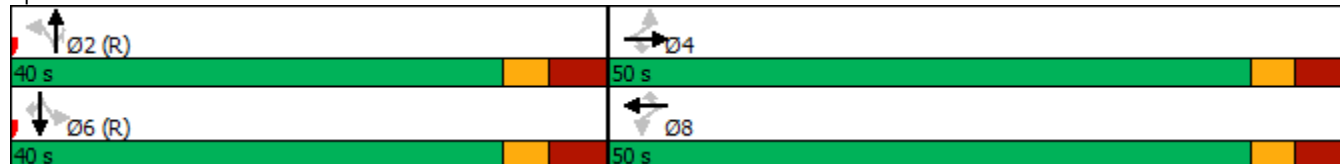
Analysis Period (min) 15

# 95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 7: Halsted Street & 79th Street



Lanes, Volumes, Timings  
8: 79th Street & 150 W.

02/23/2018



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Volume (vph)	10	817	10	10	492	10	10	10	10	10	10	10
Future Volume (vph)	10	817	10	10	492	10	10	10	10	10	10	10
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Fr <sub>t</sub>		0.998			0.997			0.955			0.955	
Fl <sub>t</sub> Protected		0.999			0.999			0.984			0.984	
Satd. Flow (prot)	0	1583	0	0	1582	0	0	1658	0	0	1658	0
Fl <sub>t</sub> Permitted		0.993			0.982			0.923			0.923	
Satd. Flow (perm)	0	1574	0	0	1555	0	0	1556	0	0	1556	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		2			3			11			11	
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		558			495			173			227	
Travel Time (s)		12.7			11.3			3.9			5.2	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Parking (#/hr)		0			0							
Adj. Flow (vph)	11	888	11	11	535	11	11	11	11	11	11	11
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	910	0	0	557	0	0	33	0	0	33	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			0			0	
Link Offset(ft)		0			0			0			-30	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.07	1.22	1.07	1.07	1.22	1.07	1.07	1.07	1.07	1.07	1.07	1.07
Turning Speed (mph)	15		9	15		9	15		9	15		9
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Minimum Split (s)	9.0	9.0		9.0	9.0		21.0	21.0		21.0	21.0	
Total Split (s)	89.0	89.0		89.0	89.0		21.0	21.0		21.0	21.0	
Total Split (%)	80.9%	80.9%		80.9%	80.9%		19.1%	19.1%		19.1%	19.1%	
Maximum Green (s)	85.0	85.0		85.0	85.0		17.0	17.0		17.0	17.0	
Yellow Time (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
All-Red Time (s)	1.0	1.0		1.0	1.0		1.0	1.0		1.0	1.0	
Lost Time Adjust (s)		1.0			1.0			1.0			1.0	
Total Lost Time (s)		5.0			5.0			5.0			5.0	
Lead/Lag												
Lead-Lag Optimize?												
Walk Time (s)							5.0	5.0		5.0	5.0	
Flash Dont Walk (s)							12.0	12.0		12.0	12.0	
Pedestrian Calls (#/hr)							0	0		0	0	
Act Effct Green (s)		84.0			84.0			16.0			16.0	
Actuated g/C Ratio		0.76			0.76			0.15			0.15	
v/c Ratio		0.76			0.47			0.14			0.14	
Control Delay		12.5			16.6			32.2			32.2	
Queue Delay		0.0			0.0			0.0			0.0	

Lanes, Volumes, Timings  
8: 79th Street & 150 W.

02/23/2018

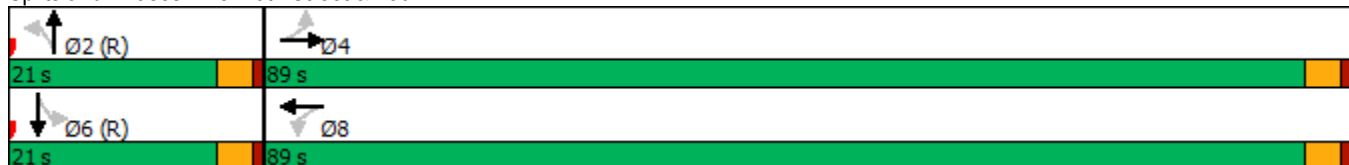


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Total Delay		12.5			16.6			32.2			32.2	
LOS		B			B			C			C	
Approach Delay		12.5			16.6			32.2			32.2	
Approach LOS		B			B			C			C	
Stops (vph)		458			347			21			21	
Fuel Used(gal)		8			7			0			0	
CO Emissions (g/hr)		580			485			25			26	
NOx Emissions (g/hr)		113			94			5			5	
VOC Emissions (g/hr)		134			112			6			6	
Dilemma Vehicles (#)		0			0			0			0	
Queue Length 50th (ft)		300			221			14			14	
Queue Length 95th (ft)		472			312			43			43	
Internal Link Dist (ft)		478			415			93			147	
Turn Bay Length (ft)												
Base Capacity (vph)		1202			1188			235			235	
Starvation Cap Reductn		0			0			0			0	
Spillback Cap Reductn		0			0			0			0	
Storage Cap Reductn		0			0			0			0	
Reduced v/c Ratio		0.76			0.47			0.14			0.14	

Intersection Summary

Area Type:	Other
Cycle Length:	110
Actuated Cycle Length:	110
Offset:	51 (46%), Referenced to phase 2:NBT and 6:SBTL, Start of Green
Natural Cycle:	70
Control Type:	Pretimed
Maximum v/c Ratio:	0.76
Intersection Signal Delay:	14.8
Intersection LOS:	B
Intersection Capacity Utilization:	73.9%
ICU Level of Service:	D
Analysis Period (min):	15

Splits and Phases: 8: 79th Street & 150 W.





Lanes, Volumes, Timings  
 9: Lafayette Avenue & 79th Street

02/23/2018



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑↑	↗	↖	↑↑	↗				↖	↑↑↑	↗
Traffic Volume (vph)	0	646	191	219	383	18	0	0	0	268	203	129
Future Volume (vph)	0	646	191	219	383	18	0	0	0	268	203	129
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Width (ft)	10	10	12	10	10	11	12	12	12	12	10	8
Storage Length (ft)	75		150	0		0	0		0	0		0
Storage Lanes	2		1	1		1	0		0	1		1
Taper Length (ft)	100			0			0			0		
Lane Util. Factor	1.00	0.91	1.00	1.00	0.95	1.00	1.00	1.00	1.00	0.86	0.86	1.00
Ped Bike Factor			0.68	0.94		0.97						0.96
Frt			0.850			0.850						0.850
Flt Protected				0.950						0.950	0.980	
Satd. Flow (prot)	0	4208	1286	1550	2682	740	0	0	0	1337	3948	1087
Flt Permitted				0.245						0.950	0.980	
Satd. Flow (perm)	0	4208	878	375	2682	718	0	0	0	1337	3948	1049
Right Turn on Red			Yes			No			Yes			Yes
Satd. Flow (RTOR)			208									140
Link Speed (mph)		30			30			30				30
Link Distance (ft)		330			322			703				664
Travel Time (s)		7.5			7.3			16.0				15.1
Confl. Peds. (#/hr)	5		130	130		5	20					20
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	2%	9%	19%	3%	8%	100%	2%	2%	2%	10%	6%	22%
Parking (#/hr)					17							
Adj. Flow (vph)	0	702	208	238	416	20	0	0	0	291	221	140
Shared Lane Traffic (%)										50%		
Lane Group Flow (vph)	0	702	208	238	416	20	0	0	0	145	367	140
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	L NA	Left	L NA	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		10			10			12				12
Link Offset(ft)		0			0			0				0
Crosswalk Width(ft)		16			16			16				16
Two way Left Turn Lane												
Headway Factor	1.17	1.17	1.07	1.17	1.32	1.12	1.07	1.07	1.07	1.07	1.17	1.28
Turning Speed (mph)	15		9	15		9	15		9	15		9
Turn Type		NA	custom	pm+pt	NA	custom				Perm	NA	Perm
Protected Phases		2 12		1	6	16					4	
Permitted Phases			2	6		6				4		4
Minimum Split (s)			20.0	8.0	36.0	8.0				36.0	36.0	36.0
Total Split (s)			39.0	25.0	64.0	9.0				37.0	37.0	37.0
Total Split (%)			35.5%	22.7%	58.2%	8.2%				33.6%	33.6%	33.6%
Maximum Green (s)			36.0	22.0	56.0	6.0				29.0	29.0	29.0
Yellow Time (s)			3.0	3.0	3.0	3.0				3.0	3.0	3.0
All-Red Time (s)			0.0	0.0	5.0	0.0				5.0	5.0	5.0
Lost Time Adjust (s)			1.0	1.0	1.0	1.0				1.0	1.0	1.0
Total Lost Time (s)			4.0	4.0	9.0	4.0				9.0	9.0	9.0
Lead/Lag			Lag	Lead								
Lead-Lag Optimize?												
Walk Time (s)			5.0		5.0					5.0	5.0	5.0

Lane Group	Ø12
Lane Configurations	
Traffic Volume (vph)	
Future Volume (vph)	
Ideal Flow (vphpl)	
Lane Width (ft)	
Storage Length (ft)	
Storage Lanes	
Taper Length (ft)	
Lane Util. Factor	
Ped Bike Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Right Turn on Red	
Satd. Flow (RTOR)	
Link Speed (mph)	
Link Distance (ft)	
Travel Time (s)	
Confl. Peds. (#/hr)	
Peak Hour Factor	
Heavy Vehicles (%)	
Parking (#/hr)	
Adj. Flow (vph)	
Shared Lane Traffic (%)	
Lane Group Flow (vph)	
Enter Blocked Intersection	
Lane Alignment	
Median Width(ft)	
Link Offset(ft)	
Crosswalk Width(ft)	
Two way Left Turn Lane	
Headway Factor	
Turning Speed (mph)	
Turn Type	
Protected Phases	12
Permitted Phases	
Minimum Split (s)	8.0
Total Split (s)	9.0
Total Split (%)	8%
Maximum Green (s)	6.0
Yellow Time (s)	3.0
All-Red Time (s)	0.0
Lost Time Adjust (s)	
Total Lost Time (s)	
Lead/Lag	
Lead-Lag Optimize?	
Walk Time (s)	



Lane Group	Ø12
Flash Dont Walk (s)	
Pedestrian Calls (#/hr)	
Act Effct Green (s)	
Actuated g/C Ratio	
v/c Ratio	
Control Delay	
Queue Delay	
Total Delay	
LOS	
Approach Delay	
Approach LOS	
Stops (vph)	
Fuel Used(gal)	
CO Emissions (g/hr)	
NOx Emissions (g/hr)	
VOC Emissions (g/hr)	
Dilemma Vehicles (#)	
Queue Length 50th (ft)	
Queue Length 95th (ft)	
Internal Link Dist (ft)	
Turn Bay Length (ft)	
Base Capacity (vph)	
Starvation Cap Reductn	
Spillback Cap Reductn	
Storage Cap Reductn	
Reduced v/c Ratio	
Intersection Summary	

Lanes, Volumes, Timings  
10: State Street & 79th Street

02/23/2018

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	456	458	18	0	373	169	229	1016	96	0	0	0
Future Volume (vph)	456	458	18	0	373	169	229	1016	96	0	0	0
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Width (ft)	10	10	11	10	10	11	12	11	16	12	12	12
Storage Length (ft)	0		0	200		115	0		0	0		0
Storage Lanes	2		1	1		0	1		1	0		0
Taper Length (ft)	0			50			0			0		
Lane Util. Factor	0.97	1.00	1.00	1.00	0.91	1.00	0.91	0.91	1.00	1.00	1.00	1.00
Ped Bike Factor	0.84		0.52			0.80	0.99	1.00	0.82			
Frt			0.850			0.850			0.850			
Flt Protected	0.950						0.950	0.999				
Satd. Flow (prot)	3036	1260	740	0	4496	1450	1526	3102	1700	0	0	0
Flt Permitted	0.445						0.950	0.999				
Satd. Flow (perm)	1201	1260	383	0	4496	1158	1511	3101	1395	0	0	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			50			79			79			
Link Speed (mph)		30			30			30				30
Link Distance (ft)		322			463			683				659
Travel Time (s)		7.3			10.5			15.5				15.0
Confl. Peds. (#/hr)	82		240	240		82	8		145	145		8
Peak Hour Factor	0.89	0.90	0.92	0.92	0.90	0.78	0.91	0.95	0.78	0.92	0.92	0.92
Heavy Vehicles (%)	2%	2%	100%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Parking (#/hr)		27										
Adj. Flow (vph)	512	509	20	0	414	217	252	1069	123	0	0	0
Shared Lane Traffic (%)							10%					
Lane Group Flow (vph)	512	509	20	0	414	217	227	1094	123	0	0	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	L NA	Right	Left	L NA	Right	L NA	L NA	Right	Left	Left	Right
Median Width(ft)		20			20			12				12
Link Offset(ft)		0			0			0				0
Crosswalk Width(ft)		16			16			16				16
Two way Left Turn Lane												
Headway Factor	1.17	1.62	1.12	1.17	1.17	1.12	1.07	1.12	0.91	1.07	1.07	1.07
Turning Speed (mph)	15		9	15		9	15		9	15		9
Turn Type	pm+pt	NA	Perm		NA	Perm	Perm	NA	Perm			
Protected Phases	5	2			6			8				
Permitted Phases	2		2			6	8		8			
Minimum Split (s)	8.0	36.0	36.0		22.0	22.0	36.0	36.0	36.0			
Total Split (s)	19.0	60.0	60.0		41.0	41.0	50.0	50.0	50.0			
Total Split (%)	17.3%	54.5%	54.5%		37.3%	37.3%	45.5%	45.5%	45.5%			
Maximum Green (s)	16.0	52.0	52.0		33.0	33.0	42.0	42.0	42.0			
Yellow Time (s)	3.0	3.0	3.0		3.0	3.0	3.0	3.0	3.0			
All-Red Time (s)	0.0	5.0	5.0		5.0	5.0	5.0	5.0	5.0			
Lost Time Adjust (s)	1.0	1.0	1.0		1.0	1.0	1.0	1.0	1.0			
Total Lost Time (s)	4.0	9.0	9.0		9.0	9.0	9.0	9.0	9.0			
Lead/Lag	Lead				Lag	Lag						
Lead-Lag Optimize?												
Walk Time (s)		5.0	5.0		5.0	5.0	5.0	5.0	5.0			

Lanes, Volumes, Timings  
10: State Street & 79th Street

02/23/2018



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Flash Dont Walk (s)		23.0	23.0		9.0	9.0	23.0	23.0	23.0			
Pedestrian Calls (#/hr)		0	0		0	0	0	0	0			
Act Effct Green (s)	56.0	51.0	51.0		32.0	32.0	41.0	41.0	41.0			
Actuated g/C Ratio	0.51	0.46	0.46		0.29	0.29	0.37	0.37	0.37			
v/c Ratio	0.59	0.87	0.10		0.32	0.55	0.40	0.95	0.22			
Control Delay	21.6	42.2	2.3		31.3	26.7	28.2	50.6	10.6			
Queue Delay	0.7	15.2	0.0		0.0	0.0	0.0	0.0	0.0			
Total Delay	22.3	57.4	2.3		31.3	26.7	28.2	50.6	10.6			
LOS	C	E	A		C	C	C	D	B			
Approach Delay		39.1			29.7			43.7				
Approach LOS		D			C			D				
Stops (vph)	323	346	1		282	93	150	919	27			
Fuel Used(gal)	5	7	0		8	3	3	21	1			
CO Emissions (g/hr)	345	489	4		546	223	218	1489	61			
NOx Emissions (g/hr)	67	95	1		106	43	42	290	12			
VOC Emissions (g/hr)	80	113	1		126	52	51	345	14			
Dilemma Vehicles (#)	0	0	0		0	0	0	0	0			
Queue Length 50th (ft)	112	231	0		83	81	128	406	20			
Queue Length 95th (ft)	149	#529	m2		113	127	204	#556	46			
Internal Link Dist (ft)		242			383			603			579	
Turn Bay Length (ft)						115						
Base Capacity (vph)	861	584	204		1307	392	563	1155	569			
Starvation Cap Reductn	117	73	0		0	0	0	0	0			
Spillback Cap Reductn	0	0	0		0	0	0	0	0			
Storage Cap Reductn	0	0	0		0	0	0	0	0			
Reduced v/c Ratio	0.69	1.00	0.10		0.32	0.55	0.40	0.95	0.22			

Intersection Summary

Area Type: Other

Cycle Length: 110

Actuated Cycle Length: 110

Offset: 0 (0%), Referenced to phase 2:EBTL, Start of Green

Natural Cycle: 80

Control Type: Pretimed

Maximum v/c Ratio: 0.95

Intersection Signal Delay: 39.3

Intersection LOS: D

Intersection Capacity Utilization 77.4%

ICU Level of Service D

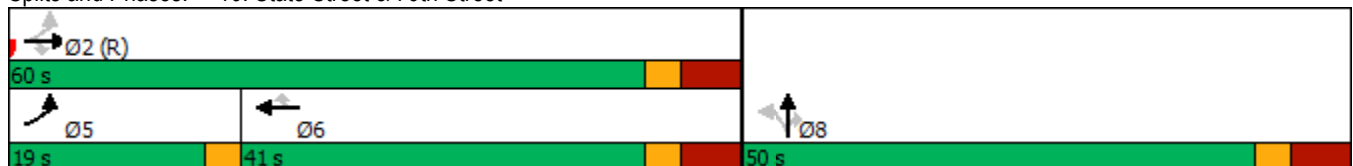
Analysis Period (min) 15

# 95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 10: State Street & 79th Street



Lanes, Volumes, Timings  
11: Indiana Avenue & 79th Street

02/23/2018



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑	↗		↖						↕	
Traffic Volume (vph)	0	466	88	25	473	0	0	0	0	25	25	69
Future Volume (vph)	0	466	88	25	473	0	0	0	0	25	25	69
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (ft)	0		30	0		0	0		0	0		0
Storage Lanes	0		1	0		0	0		0	0		0
Taper Length (ft)	0			0			0			0		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.850									0.922
Flt Protected					0.998							0.990
Satd. Flow (prot)	0	1588	1488	0	1585	0	0	0	0	0	1611	0
Flt Permitted					0.965							0.990
Satd. Flow (perm)	0	1588	1488	0	1533	0	0	0	0	0	1611	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			60									75
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		869			1306			672			662	
Travel Time (s)		19.8			29.7			15.3			15.0	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Bus Blockages (#/hr)	0	0	2	0	0	0	0	0	0	0	0	0
Parking (#/hr)		0			0							
Adj. Flow (vph)	0	507	96	27	514	0	0	0	0	27	27	75
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	507	96	0	541	0	0	0	0	0	129	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		10			10			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.07	1.22	1.08	1.07	1.22	1.07	1.07	1.07	1.07	1.07	1.07	1.07
Turning Speed (mph)	15		9	15		9	15		9	15		9
Turn Type		NA	Perm	Perm	NA					Perm	NA	
Protected Phases		4			8							6
Permitted Phases			4	8						6		
Minimum Split (s)		18.0	18.0	18.0	18.0					19.0	19.0	
Total Split (s)		41.0	41.0	41.0	41.0					19.0	19.0	
Total Split (%)		68.3%	68.3%	68.3%	68.3%					31.7%	31.7%	
Maximum Green (s)		36.0	36.0	36.0	36.0					15.0	15.0	
Yellow Time (s)		3.0	3.0	3.0	3.0					3.0	3.0	
All-Red Time (s)		2.0	2.0	2.0	2.0					1.0	1.0	
Lost Time Adjust (s)		1.0	1.0		1.0						1.0	
Total Lost Time (s)		6.0	6.0		6.0						5.0	
Lead/Lag												
Lead-Lag Optimize?												
Walk Time (s)		5.0	5.0	5.0	5.0					5.0	5.0	
Flash Dont Walk (s)		8.0	8.0	8.0	8.0					10.0	10.0	
Pedestrian Calls (#/hr)		0	0	0	0					0	0	
Act Effect Green (s)		35.0	35.0		35.0						14.0	

Lanes, Volumes, Timings  
 11: Indiana Avenue & 79th Street

02/23/2018



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Actuated g/C Ratio		0.58	0.58		0.58							0.23
v/c Ratio		0.55	0.11		0.61							0.30
Control Delay		10.5	3.1		4.7							11.5
Queue Delay		0.0	0.0		0.0							0.0
Total Delay		10.5	3.1		4.7							11.5
LOS		B	A		A							B
Approach Delay		9.3			4.7							11.5
Approach LOS		A			A							B
Stops (vph)		269	18		92							49
Fuel Used(gal)		7	1		6							1
CO Emissions (g/hr)		512	75		424							81
NOx Emissions (g/hr)		100	15		82							16
VOC Emissions (g/hr)		119	17		98							19
Dilemma Vehicles (#)		0	0		0							0
Queue Length 50th (ft)		98	5		21							16
Queue Length 95th (ft)		172	20		m41							54
Internal Link Dist (ft)		789			1226			592				582
Turn Bay Length (ft)			30									
Base Capacity (vph)		926	893		894							433
Starvation Cap Reductn		0	0		0							0
Spillback Cap Reductn		0	0		0							0
Storage Cap Reductn		0	0		0							0
Reduced v/c Ratio		0.55	0.11		0.61							0.30

Intersection Summary

Area Type: Other  
 Cycle Length: 60  
 Actuated Cycle Length: 60  
 Offset: 51 (85%), Referenced to phase 6:SBTL, Start of Green  
 Natural Cycle: 50  
 Control Type: Pretimed  
 Maximum v/c Ratio: 0.61  
 Intersection Signal Delay: 7.6  
 Intersection LOS: A  
 Intersection Capacity Utilization 69.5%  
 ICU Level of Service C  
 Analysis Period (min) 15  
 m Volume for 95th percentile queue is metered by upstream signal.

























Splits and Phases: 11: Indiana Avenue & 79th Street





Lanes, Volumes, Timings  
12: King Dr & 79th Street

02/23/2018

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	42	366	83	57	367	49	97	342	60	50	270	34
Future Volume (vph)	42	366	83	57	367	49	97	342	60	50	270	34
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Width (ft)	10	10	11	10	10	11	10	10	10	10	10	10
Storage Length (ft)	80		100	60		100	60		30	50		50
Storage Lanes	1		1	1		1	1		1	1		1
Taper Length (ft)	100			75			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	0.95		0.87	0.94		0.88	0.97		0.89	0.95		0.93
Frt			0.850			0.850			0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1565	1425	1450	1565	1416	1450	1565	1647	1400	1565	1647	1400
Flt Permitted	0.411			0.413			0.405			0.540		
Satd. Flow (perm)	641	1425	1263	642	1416	1273	647	1647	1251	842	1647	1298
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			90			73			42			91
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		1306			1324			671			675	
Travel Time (s)		29.7			30.1			15.3			15.3	
Confl. Peds. (#/hr)	73		78	78		73	36		59	59		36
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Parking (#/hr)		7			8							
Adj. Flow (vph)	46	398	90	62	399	53	105	372	65	54	293	37
Shared Lane Traffic (%)												
Lane Group Flow (vph)	46	398	90	62	399	53	105	372	65	54	293	37
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		10			10			10			10	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.17	1.40	1.12	1.17	1.41	1.12	1.17	1.17	1.17	1.17	1.17	1.17
Turning Speed (mph)	15		9	15		9	15		9	15		9
Turn Type	Perm	NA	Perm	Perm	NA	Perm	pm+pt	NA	Perm	Perm	NA	Perm
Protected Phases		4			8		5	2			6	
Permitted Phases	4		4	8		8	2		2	6		6
Minimum Split (s)	26.0	26.0	26.0	26.0	26.0	26.0	8.0	24.0	24.0	24.0	24.0	24.0
Total Split (s)	28.0	28.0	28.0	28.0	28.0	28.0	8.0	32.0	32.0	24.0	24.0	24.0
Total Split (%)	46.7%	46.7%	46.7%	46.7%	46.7%	46.7%	13.3%	53.3%	53.3%	40.0%	40.0%	40.0%
Maximum Green (s)	23.0	23.0	23.0	23.0	23.0	23.0	5.0	28.0	28.0	20.0	20.0	20.0
Yellow Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	0.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Total Lost Time (s)	6.0	6.0	6.0	6.0	6.0	6.0	4.0	5.0	5.0	5.0	5.0	5.0
Lead/Lag							Lead			Lag	Lag	Lag
Lead-Lag Optimize?												
Walk Time (s)	5.0	5.0	5.0	5.0	5.0	5.0		5.0	5.0	5.0	5.0	5.0
Flash Dont Walk (s)	16.0	16.0	16.0	16.0	16.0	16.0		15.0	15.0	15.0	15.0	15.0



Lanes, Volumes, Timings  
13: St Lawrence Avenue & 79th Street

02/23/2018



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↑	↗		↕				
Traffic Volume (vph)	25	451	0	0	448	25	25	100	25	0	0	0
Future Volume (vph)	25	451	0	0	448	25	25	100	25	0	0	0
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (ft)	0		30	0		30	0		0	0		0
Storage Lanes	0		0	0		1	0		0	0		0
Taper Length (ft)	0			0			0			0		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt						0.850		0.978				
Flt Protected		0.997						0.992				
Satd. Flow (prot)	0	1583	0	0	1588	1500	0	1712	0	0	0	0
Flt Permitted		0.967						0.992				
Satd. Flow (perm)	0	1536	0	0	1588	1500	0	1712	0	0	0	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)						18		16				
Link Speed (mph)		30			30			30				30
Link Distance (ft)		1324			660			692				656
Travel Time (s)		30.1			15.0			15.7				14.9
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Parking (#/hr)		0			0							
Adj. Flow (vph)	27	490	0	0	487	27	27	109	27	0	0	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	517	0	0	487	27	0	163	0	0	0	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		10			10			0				0
Link Offset(ft)		0			0			0				0
Crosswalk Width(ft)		16			16			16				16
Two way Left Turn Lane												
Headway Factor	1.07	1.22	1.07	1.07	1.22	1.07	1.07	1.07	1.07	1.07	1.07	1.07
Turning Speed (mph)	15		9	15		9	15		9	15		9
Turn Type	Perm	NA			NA	Perm	Perm	NA				
Protected Phases		4			8			2				
Permitted Phases	4					8	2					
Minimum Split (s)	16.0	16.0			16.0	16.0	17.0	17.0				
Total Split (s)	41.0	41.0			41.0	41.0	19.0	19.0				
Total Split (%)	68.3%	68.3%			68.3%	68.3%	31.7%	31.7%				
Maximum Green (s)	37.0	37.0			37.0	37.0	15.0	15.0				
Yellow Time (s)	3.0	3.0			3.0	3.0	3.0	3.0				
All-Red Time (s)	1.0	1.0			1.0	1.0	1.0	1.0				
Lost Time Adjust (s)		1.0			1.0	1.0		1.0				
Total Lost Time (s)		5.0			5.0	5.0		5.0				
Lead/Lag												
Lead-Lag Optimize?												
Walk Time (s)	5.0	5.0			5.0	5.0	5.0	5.0				
Flash Dont Walk (s)	7.0	7.0			7.0	7.0	8.0	8.0				
Pedestrian Calls (#/hr)	0	0			0	0	0	0				
Act Effct Green (s)		36.0			36.0	36.0		14.0				
Actuated g/C Ratio		0.60			0.60	0.60		0.23				

Lanes, Volumes, Timings  
 13: St Lawrence Avenue & 79th Street

02/23/2018



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
v/c Ratio		0.56			0.51	0.03			0.40			
Control Delay		4.5			9.3	3.2			20.9			
Queue Delay		0.0			0.0	0.0			0.0			
Total Delay		4.5			9.3	3.2			20.9			
LOS		A			A	A			C			
Approach Delay		4.5			9.0				20.9			
Approach LOS		A			A				C			
Stops (vph)		83			242	6			110			
Fuel Used(gal)		6			4	0			2			
CO Emissions (g/hr)		406			314	12			144			
NOx Emissions (g/hr)		79			61	2			28			
VOC Emissions (g/hr)		94			73	3			33			
Dilemma Vehicles (#)		0			0	0			0			
Queue Length 50th (ft)		30			88	1			45			
Queue Length 95th (ft)		m52			153	9			92			
Internal Link Dist (ft)		1244			580				612			576
Turn Bay Length (ft)						30						
Base Capacity (vph)		921			952	907			411			
Starvation Cap Reductn		0			0	0			0			
Spillback Cap Reductn		0			0	0			0			
Storage Cap Reductn		0			0	0			0			
Reduced v/c Ratio		0.56			0.51	0.03			0.40			

Intersection Summary

Area Type: Other  
 Cycle Length: 60  
 Actuated Cycle Length: 60  
 Offset: 48 (80%), Referenced to phase 2:NBT, Start of Green  
 Natural Cycle: 45  
 Control Type: Pretimed  
 Maximum v/c Ratio: 0.56  
 Intersection Signal Delay: 8.7  
 Intersection Capacity Utilization 65.8%  
 Analysis Period (min) 15  
 Intersection LOS: A  
 ICU Level of Service C

m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 13: St Lawrence Avenue & 79th Street



Lanes, Volumes, Timings  
14: Kenwood Avenue & 79th Street

02/23/2018



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	191	25	25	248	0	0	0	0	25	100	25
Future Volume (vph)	0	191	25	25	248	0	0	0	0	25	100	25
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Fr't		0.984									0.978	
Flt Protected					0.995						0.992	
Satd. Flow (prot)	0	1563	0	0	1756	0	0	0	0	0	1712	0
Flt Permitted					0.962						0.992	
Satd. Flow (perm)	0	1563	0	0	1698	0	0	0	0	0	1712	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		20									26	
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		351			1665			668			659	
Travel Time (s)		8.0			37.8			15.2			15.0	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Parking (#/hr)		0										
Adj. Flow (vph)	0	208	27	27	270	0	0	0	0	27	109	27
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	235	0	0	297	0	0	0	0	0	163	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		9			9			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.07	1.22	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07
Turning Speed (mph)	15		9	15		9	15		9	15		9
Turn Type		NA			Perm	NA					Perm	NA
Protected Phases		4			8						6	
Permitted Phases				8							6	
Minimum Split (s)		16.0			16.0	16.0				17.0	17.0	
Total Split (s)		22.0			22.0	22.0				18.0	18.0	
Total Split (%)		55.0%			55.0%	55.0%				45.0%	45.0%	
Maximum Green (s)		18.0			18.0	18.0				14.0	14.0	
Yellow Time (s)		3.0			3.0	3.0				3.0	3.0	
All-Red Time (s)		1.0			1.0	1.0				1.0	1.0	
Lost Time Adjust (s)		1.0			1.0						1.0	
Total Lost Time (s)		5.0			5.0						5.0	
Lead/Lag												
Lead-Lag Optimize?												
Walk Time (s)		5.0			5.0	5.0				5.0	5.0	
Flash Dont Walk (s)		7.0			7.0	7.0				8.0	8.0	
Pedestrian Calls (#/hr)		0			0	0				0	0	
Act Effct Green (s)		17.0			17.0						13.0	
Actuated g/C Ratio		0.42			0.42						0.32	
v/c Ratio		0.35			0.41						0.28	
Control Delay		8.9			10.2						10.2	
Queue Delay		0.0			0.0						0.0	

Lanes, Volumes, Timings  
 14: Kenwood Avenue & 79th Street

02/23/2018

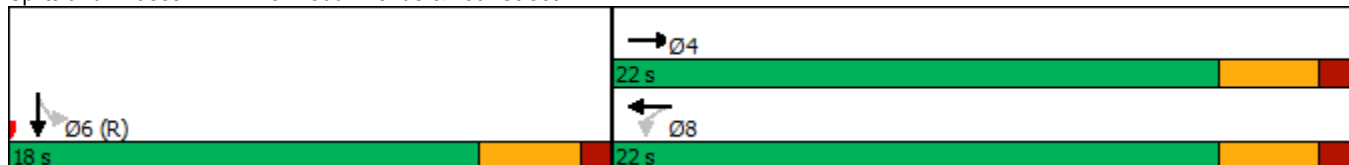


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Total Delay		8.9			10.2							10.2
LOS		A			B							B
Approach Delay		8.9			10.2							10.2
Approach LOS		A			B							B
Stops (vph)		123			176							90
Fuel Used(gal)		2			5							2
CO Emissions (g/hr)		116			355							111
NOx Emissions (g/hr)		23			69							22
VOC Emissions (g/hr)		27			82							26
Dilemma Vehicles (#)		0			0							0
Queue Length 50th (ft)		30			43							22
Queue Length 95th (ft)		65			86							53
Internal Link Dist (ft)		271			1585			588				579
Turn Bay Length (ft)												
Base Capacity (vph)		675			721							573
Starvation Cap Reductn		0			0							0
Spillback Cap Reductn		0			0							0
Storage Cap Reductn		0			0							0
Reduced v/c Ratio		0.35			0.41							0.28

Intersection Summary

Area Type:	Other
Cycle Length:	40
Actuated Cycle Length:	40
Offset:	0 (0%), Referenced to phase 6:SBTL, Start of Green
Natural Cycle:	40
Control Type:	Pretimed
Maximum v/c Ratio:	0.41
Intersection Signal Delay:	9.8
Intersection LOS:	A
Intersection Capacity Utilization:	50.8%
ICU Level of Service:	A
Analysis Period (min):	15

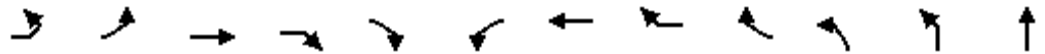
Splits and Phases: 14: Kenwood Avenue & 79th Street



Lanes, Volumes, Timings

15: Stony Island Avenue & South Chicago Avenue & 79th Street

02/23/2018



Lane Group	EBL2	EBL	EBT	EBR	EBR2	WBL	WBT	WBR	WBR2	NBL2	NBL	NBT
Lane Configurations												
Traffic Volume (vph)	1	26	155	25	9	114	183	59	34	13	150	1346
Future Volume (vph)	1	26	155	25	9	114	183	59	34	13	150	1346
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Width (ft)	9	9	10	11	11	9	10	11	11	12	12	12
Storage Length (ft)		100		100		175		150			90	
Storage Lanes		1		1		1		1			1	
Taper Length (ft)		25				25					25	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.91	1.00	0.91
Fr <sub>t</sub>				0.850				0.850				
Fl <sub>t</sub> Protected		0.950				0.950					0.950	
Satd. Flow (prot)	0	1509	1647	1450	0	1509	1647	1450	0	0	1676	4818
Fl <sub>t</sub> Permitted		0.377				0.486					0.950	
Satd. Flow (perm)	0	599	1647	1450	0	772	1647	1450	0	0	1676	4818
Right Turn on Red					No				No			
Satd. Flow (RTOR)												
Link Speed (mph)			30				30					30
Link Distance (ft)			1665				377					254
Travel Time (s)			37.8				8.6					5.8
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	1	27	163	26	9	120	193	62	36	14	158	1417
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	28	163	35	0	120	193	98	0	0	172	1417
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Right	Left	Left	Right	Right	Left	Left	Left
Median Width(ft)			9				9					12
Link Offset(ft)			0				0					0
Crosswalk Width(ft)			16				16					16
Two way Left Turn Lane												
Headway Factor	1.22	1.22	1.17	1.12	1.12	1.22	1.17	1.12	1.12	1.07	1.07	1.07
Turning Speed (mph)	15	15		9	9	15		9	9	15	15	
Turn Type	Perm	Perm	NA	Perm		pm+pt	NA	Prot		Prot	Prot	NA
Protected Phases			4			3	8	8		5	5	2
Permitted Phases	4	4		4		8						
Minimum Split (s)	21.0	21.0	21.0	21.0		8.0	21.0	21.0		8.0	8.0	34.0
Total Split (s)	24.0	24.0	24.0	24.0		11.0	35.0	35.0		23.0	23.0	58.0
Total Split (%)	17.1%	17.1%	17.1%	17.1%		7.9%	25.0%	25.0%		16.4%	16.4%	41.4%
Maximum Green (s)	19.0	19.0	19.0	19.0		7.5	30.0	30.0		20.0	20.0	51.0
Yellow Time (s)	3.0	3.0	3.0	3.0		3.0	3.0	3.0		3.0	3.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0		0.5	2.0	2.0		0.0	0.0	3.0
Lost Time Adjust (s)		1.0	1.0	1.0		1.0	1.0	1.0			1.0	1.0
Total Lost Time (s)		6.0	6.0	6.0		4.5	6.0	6.0			4.0	8.0
Lead/Lag										Lead	Lead	Lag
Lead-Lag Optimize?												
Walk Time (s)	5.0	5.0	5.0	5.0			5.0	5.0				5.0
Flash Dont Walk (s)	11.0	11.0	11.0	11.0			11.0	11.0				22.0
Pedestrian Calls (#/hr)	0	0	0	0			0	0				0
Act Effct Green (s)		18.0	18.0	18.0		30.5	29.0	29.0			19.0	50.0
Actuated g/C Ratio		0.13	0.13	0.13		0.22	0.21	0.21			0.14	0.36

Lanes, Volumes, Timings

15: Stony Island Avenue & South Chicago Avenue & 79th Street

02/23/2018



Lane Group	NBR	NBR2	SBL2	SBL	SBT	SBR	SBR2	SET	SER	SER2	NWT	NWR
Lane Configurations												
Traffic Volume (vph)	87	17	22	72	879	75	11	223	87	2	239	78
Future Volume (vph)	87	17	22	72	879	75	11	223	87	2	239	78
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Width (ft)	12	12	12	12	12	12	12	12	12	12	12	12
Storage Length (ft)	130			0		0			0			0
Storage Lanes	2			1		1			0			0
Taper Length (ft)				0								
Lane Util. Factor	1.00	0.91	0.91	1.00	0.91	1.00	0.91	0.95	0.95	0.95	0.95	0.95
Frt	0.850					0.850		0.957				0.962
Flt Protected				0.950								
Satd. Flow (prot)	1500	0	0	1676	4818	1500	0	3209	0	0	3226	0
Flt Permitted				0.950								
Satd. Flow (perm)	1500	0	0	1676	4818	1500	0	3209	0	0	3226	0
Right Turn on Red		No					No			No		
Satd. Flow (RTOR)												
Link Speed (mph)					30			30				30
Link Distance (ft)					690			712				889
Travel Time (s)					15.7			16.2				20.2
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	92	18	23	76	925	79	12	235	92	2	252	82
Shared Lane Traffic (%)												
Lane Group Flow (vph)	110	0	0	99	925	91	0	329	0	0	338	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Right	Right	Left	Left	Left	Right	Right	Left	Right	Right	Left	Right
Median Width(ft)					12			0				0
Link Offset(ft)					0			0				0
Crosswalk Width(ft)					16			16				16
Two way Left Turn Lane												
Headway Factor	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07
Turning Speed (mph)	9	9	15	15		9	9		9	9		9
Turn Type	Perm		Prot	Prot	NA	Perm		NA				NA
Protected Phases			1	1	6			10				14
Permitted Phases	2					6						
Minimum Split (s)	34.0		8.0	8.0	45.0	45.0		31.0				31.0
Total Split (s)	58.0		16.0	16.0	51.0	51.0		31.0				31.0
Total Split (%)	41.4%		11.4%	11.4%	36.4%	36.4%		22.1%				22.1%
Maximum Green (s)	51.0		13.0	13.0	44.0	44.0		25.0				25.0
Yellow Time (s)	4.0		3.0	3.0	4.0	4.0		4.0				4.0
All-Red Time (s)	3.0		0.0	0.0	3.0	3.0		2.0				2.0
Lost Time Adjust (s)	1.0			1.0	1.0	1.0		1.0				1.0
Total Lost Time (s)	8.0			4.0	8.0	8.0		7.0				7.0
Lead/Lag	Lag		Lead	Lead	Lag	Lag						
Lead-Lag Optimize?												
Walk Time (s)	5.0				5.0	5.0		4.0				4.0
Flash Dont Walk (s)	22.0				33.0	33.0		21.0				21.0
Pedestrian Calls (#/hr)	0				0	0		0				0
Act Effct Green (s)	50.0			12.0	43.0	43.0		24.0				24.0
Actuated g/C Ratio	0.36			0.09	0.31	0.31		0.17				0.17



Lanes, Volumes, Timings  
 15: Stony Island Avenue & South Chicago Avenue & 79th Street

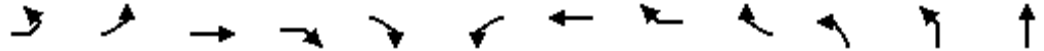
02/23/2018



Lane Group	NWR2
Lane Configurations	
Traffic Volume (vph)	4
Future Volume (vph)	4
Ideal Flow (vphpl)	1800
Lane Width (ft)	12
Storage Length (ft)	
Storage Lanes	
Taper Length (ft)	
Lane Util. Factor	0.95
Fr	
Flt Protected	
Satd. Flow (prot)	0
Flt Permitted	
Satd. Flow (perm)	0
Right Turn on Red	No
Satd. Flow (RTOR)	
Link Speed (mph)	
Link Distance (ft)	
Travel Time (s)	
Peak Hour Factor	0.95
Adj. Flow (vph)	4
Shared Lane Traffic (%)	
Lane Group Flow (vph)	0
Enter Blocked Intersection	No
Lane Alignment	Right
Median Width(ft)	
Link Offset(ft)	
Crosswalk Width(ft)	
Two way Left Turn Lane	
Headway Factor	1.07
Turning Speed (mph)	9
Turn Type	
Protected Phases	
Permitted Phases	
Minimum Split (s)	
Total Split (s)	
Total Split (%)	
Maximum Green (s)	
Yellow Time (s)	
All-Red Time (s)	
Lost Time Adjust (s)	
Total Lost Time (s)	
Lead/Lag	
Lead-Lag Optimize?	
Walk Time (s)	
Flash Dont Walk (s)	
Pedestrian Calls (#/hr)	
Act Effct Green (s)	
Actuated g/C Ratio	

Lanes, Volumes, Timings  
 15: Stony Island Avenue & South Chicago Avenue & 79th Street

02/23/2018

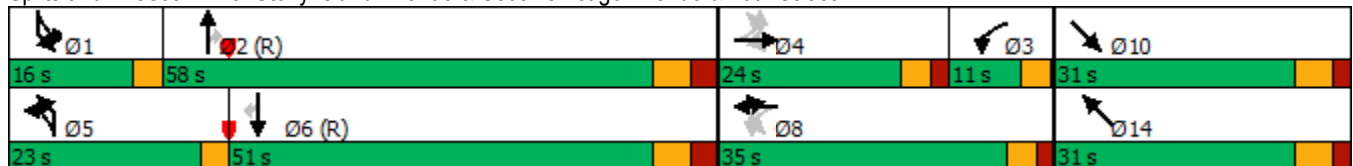


Lane Group	EBL2	EBL	EBT	EBR	EBR2	WBL	WBT	WBR	WBR2	NBL2	NBL	NBT
v/c Ratio		0.36	0.77	0.19		0.59	0.57	0.33			0.76	0.82
Control Delay		70.3	82.9	57.4		57.7	49.6	43.4			79.5	45.9
Queue Delay		0.0	0.0	0.0		0.0	0.0	0.0			0.0	0.0
Total Delay		70.3	82.9	57.4		57.7	49.6	43.4			79.5	45.9
LOS		E	F	E		E	D	D			E	D
Approach Delay			77.4				50.5					48.5
Approach LOS			E				D					D
Stops (vph)		26	142	29		98	164	78			149	1198
Fuel Used(gal)		1	5	1		3	5	2			4	27
CO Emissions (g/hr)		62	378	68		214	324	155			308	1885
NOx Emissions (g/hr)		12	74	13		42	63	30			60	367
VOC Emissions (g/hr)		14	88	16		50	75	36			71	437
Dilemma Vehicles (#)		0	0	0		0	0	0			0	0
Queue Length 50th (ft)		24	146	29		97	161	78			153	428
Queue Length 95th (ft)		59	#257	65		160	246	136			#263	492
Internal Link Dist (ft)			1585				297					174
Turn Bay Length (ft)		100		100		175		150			90	
Base Capacity (vph)		77	211	186		202	341	300			227	1720
Starvation Cap Reductn		0	0	0		0	0	0			0	0
Spillback Cap Reductn		0	0	0		0	0	0			0	0
Storage Cap Reductn		0	0	0		0	0	0			0	0
Reduced v/c Ratio		0.36	0.77	0.19		0.59	0.57	0.33			0.76	0.82

Intersection Summary

Area Type: Other  
 Cycle Length: 140  
 Actuated Cycle Length: 140  
 Offset: 59 (42%), Referenced to phase 2:NBT and 6:SBT, Start of Green  
 Natural Cycle: 115  
 Control Type: Pretimed  
 Maximum v/c Ratio: 0.82  
 Intersection Signal Delay: 51.6 Intersection LOS: D  
 Intersection Capacity Utilization 114.5% ICU Level of Service H  
 Analysis Period (min) 15  
 # 95th percentile volume exceeds capacity, queue may be longer.  
 Queue shown is maximum after two cycles.

Splits and Phases: 15: Stony Island Avenue & South Chicago Avenue & 79th Street



Lanes, Volumes, Timings

15: Stony Island Avenue & South Chicago Avenue & 79th Street

02/23/2018



Lane Group	NBR	NBR2	SBL2	SBL	SBT	SBR	SBR2	SET	SER	SER2	NWT	NWR
v/c Ratio	0.21			0.69	0.63	0.20		0.60				0.61
Control Delay	32.6			86.7	43.8	37.3		58.7				59.0
Queue Delay	0.0			0.0	0.0	0.0		0.0				0.0
Total Delay	32.6			86.7	43.8	37.3		58.7				59.0
LOS	C			F	D	D		E				E
Approach Delay					47.1			58.7				59.0
Approach LOS					D			E				E
Stops (vph)	71			87	737	62		284				293
Fuel Used(gal)	2			3	17	1		7				8
CO Emissions (g/hr)	117			185	1164	102		493				538
NOx Emissions (g/hr)	23			36	226	20		96				105
VOC Emissions (g/hr)	27			43	270	24		114				125
Dilemma Vehicles (#)	0			0	0	0		0				0
Queue Length 50th (ft)	69			89	265	61		147				151
Queue Length 95th (ft)	117			#174	315	108		201				206
Internal Link Dist (ft)					610			632				809
Turn Bay Length (ft)	130											
Base Capacity (vph)	535			143	1479	460		550				553
Starvation Cap Reductn	0			0	0	0		0				0
Spillback Cap Reductn	0			0	0	0		0				0
Storage Cap Reductn	0			0	0	0		0				0
Reduced v/c Ratio	0.21			0.69	0.63	0.20		0.60				0.61

Intersection Summary



Lane Group	NWR2
v/c Ratio	
Control Delay	
Queue Delay	
Total Delay	
LOS	
Approach Delay	
Approach LOS	
Stops (vph)	
Fuel Used(gal)	
CO Emissions (g/hr)	
NOx Emissions (g/hr)	
VOC Emissions (g/hr)	
Dilemma Vehicles (#)	
Queue Length 50th (ft)	
Queue Length 95th (ft)	
Internal Link Dist (ft)	
Turn Bay Length (ft)	
Base Capacity (vph)	
Starvation Cap Reductn	
Spillback Cap Reductn	
Storage Cap Reductn	
Reduced v/c Ratio	
Intersection Summary	

Lanes, Volumes, Timings  
16: 79th Street & Cregier Avenue

02/23/2018



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕				
Traffic Volume (vph)	25	243	0	0	365	25	25	100	25	0	0	0
Future Volume (vph)	25	243	0	0	365	25	25	100	25	0	0	0
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Fr't					0.991			0.978				
Flt Protected		0.995						0.992				
Satd. Flow (prot)	0	1574	0	0	1749	0	0	1712	0	0	0	0
Flt Permitted		0.948						0.992				
Satd. Flow (perm)	0	1500	0	0	1749	0	0	1712	0	0	0	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)					8			15				
Link Speed (mph)		30			30			30				30
Link Distance (ft)		946			328			152				657
Travel Time (s)		21.5			7.5			3.5				14.9
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Bus Blockages (#/hr)	0	1	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)		0										
Adj. Flow (vph)	27	264	0	0	397	27	27	109	27	0	0	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	291	0	0	424	0	0	163	0	0	0	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			0				0
Link Offset(ft)		0			0			0				0
Crosswalk Width(ft)		16			16			16				16
Two way Left Turn Lane												
Headway Factor	1.07	1.23	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07
Turning Speed (mph)	15		9	15		9	15		9	15		9
Turn Type	Perm	NA			NA		Perm	NA				
Protected Phases		4			8			2				
Permitted Phases	4						2					
Minimum Split (s)	19.0	19.0			19.0		23.0	23.0				
Total Split (s)	44.0	44.0			44.0		26.0	26.0				
Total Split (%)	62.9%	62.9%			62.9%		37.1%	37.1%				
Maximum Green (s)	40.0	40.0			40.0		22.0	22.0				
Yellow Time (s)	3.0	3.0			3.0		3.0	3.0				
All-Red Time (s)	1.0	1.0			1.0		1.0	1.0				
Lost Time Adjust (s)		1.0			1.0			1.0				
Total Lost Time (s)		5.0			5.0			5.0				
Lead/Lag												
Lead-Lag Optimize?												
Walk Time (s)	5.0	5.0			5.0		5.0	5.0				
Flash Dont Walk (s)	10.0	10.0			10.0		14.0	14.0				
Pedestrian Calls (#/hr)	0	0			0		0	0				
Act Effct Green (s)		39.0			39.0			21.0				
Actuated g/C Ratio		0.56			0.56			0.30				
v/c Ratio		0.35			0.43			0.31				
Control Delay		4.1			10.6			19.1				

Lanes, Volumes, Timings  
 16: 79th Street & Cregier Avenue

02/23/2018

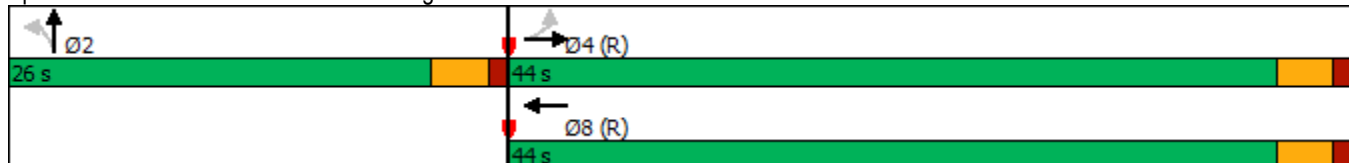


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Queue Delay		0.0			0.0			0.0				
Total Delay		4.1			10.6			19.1				
LOS		A			B			B				
Approach Delay		4.1			10.6			19.1				
Approach LOS		A			B			B				
Stops (vph)		106			211			101				
Fuel Used(gal)		4			3			1				
CO Emissions (g/hr)		250			210			92				
NOx Emissions (g/hr)		49			41			18				
VOC Emissions (g/hr)		58			49			21				
Dilemma Vehicles (#)		0			0			0				
Queue Length 50th (ft)		17			95			48				
Queue Length 95th (ft)		m22			156			95				
Internal Link Dist (ft)		866			248			72			577	
Turn Bay Length (ft)												
Base Capacity (vph)		835			977			524				
Starvation Cap Reductn		0			0			0				
Spillback Cap Reductn		0			0			0				
Storage Cap Reductn		0			0			0				
Reduced v/c Ratio		0.35			0.43			0.31				

Intersection Summary













Area Type: Other  
 Cycle Length: 70  
 Actuated Cycle Length: 70  
 Offset: 0 (0%), Referenced to phase 4:EBTL and 8:WBT, Start of Green  
 Natural Cycle: 45  
 Control Type: Pretimed  
 Maximum v/c Ratio: 0.43  
 Intersection Signal Delay: 10.0  
 Intersection LOS: B  
 Intersection Capacity Utilization 59.6%  
 ICU Level of Service B  
 Analysis Period (min) 15  
 m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 16: 79th Street & Cregier Avenue



Lanes, Volumes, Timings  
58: Paulina Street & 79th Street

02/23/2018

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑			↑		↖		↗	↖		↗
Traffic Volume (vph)	0	624	0	0	491	0	8	0	28	29	0	5
Future Volume (vph)	0	624	0	0	491	0	8	0	28	29	0	5
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Width (ft)	12	11	12	12	11	10	12	12	12	12	12	12
Storage Length (ft)	0		0	0		0	0		10	0		10
Storage Lanes	0		0	0		0	1		1	1		1
Taper Length (ft)	0			0			0			0		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Fr <sub>t</sub>									0.850			0.850
Fl <sub>t</sub> Protected							0.950			0.950		
Satd. Flow (prot)	0	1369	0	0	1335	0	1710	0	1471	1598	0	1530
Fl <sub>t</sub> Permitted							0.950			0.950		
Satd. Flow (perm)	0	1369	0	0	1335	0	1710	0	1471	1598	0	1530
Link Speed (mph)		30			30			30				30
Link Distance (ft)		664			664			657				669
Travel Time (s)		15.1			15.1			14.9				15.2
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.67	0.92	0.70	0.66	0.92	0.42
Heavy Vehicles (%)	2%	11%	2%	2%	10%	2%	0%	2%	4%	7%	2%	0%
Bus Blockages (#/hr)	0	6	6	0	6	6	0	0	0	0	0	0
Parking (#/hr)		1			7							
Adj. Flow (vph)	0	678	0	0	534	0	12	0	40	44	0	12
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	678	0	0	534	0	12	0	40	44	0	12
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		9			9			12				12
Link Offset(ft)		0			0			0				0
Crosswalk Width(ft)		16			16			16				16
Two way Left Turn Lane												
Headway Factor	1.07	1.33	1.07	1.07	1.38	1.17	1.07	1.07	1.07	1.07	1.07	1.07
Turning Speed (mph)	15		9	15		9	15		9	15		9
Sign Control		Free			Free			Stop				Stop

Intersection Summary

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	53.8%
ICU Level of Service	A
Analysis Period (min)	15

Lanes, Volumes, Timings  
69: Union Avenue & 79th Street

02/23/2018



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕				
Traffic Volume (vph)	25	604	0	0	523	16	2	8	8	0	0	0
Future Volume (vph)	25	604	0	0	523	16	2	8	8	0	0	0
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Width (ft)	12	10	12	12	10	12	12	16	12	12	16	16
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Flt					0.993			0.942				
Flt Protected		0.997						0.993				
Satd. Flow (prot)	0	1361	0	0	1372	0	0	1908	0	0	0	0
Flt Permitted		0.997						0.993				
Satd. Flow (perm)	0	1361	0	0	1372	0	0	1908	0	0	0	0
Link Speed (mph)		30			30			30				30
Link Distance (ft)		665			358			654				664
Travel Time (s)		15.1			8.1			14.9				15.1
Peak Hour Factor	0.52	0.95	0.92	0.92	0.96	0.50	0.50	0.67	0.67	0.92	0.92	0.92
Heavy Vehicles (%)	8%	11%	2%	2%	10%	0%	0%	0%	0%	2%	2%	2%
Parking (#/hr)		0			0							
Adj. Flow (vph)	48	636	0	0	545	32	4	12	12	0	0	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	684	0	0	577	0	0	28	0	0	0	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			0				0
Link Offset(ft)		0			0			0				0
Crosswalk Width(ft)		16			16			16				16
Two way Left Turn Lane												
Headway Factor	1.07	1.33	1.07	1.07	1.33	1.07	1.07	0.91	1.07	1.07	0.91	0.91
Turning Speed (mph)	15		9	15		9	15		9	15		9
Sign Control		Free			Free			Stop			Stop	

Intersection Summary

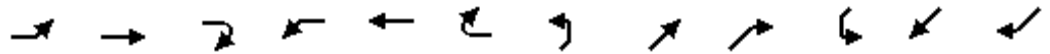
Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	66.6%
ICU Level of Service	C
Analysis Period (min)	15



# **PM Reports**

Lanes, Volumes, Timings  
1: W. Columbus Ave. & W. 79th St.

02/23/2018



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Traffic Volume (vph)	238	597	6	153	542	1	23	578	160	0	993	25
Future Volume (vph)	238	597	6	153	542	1	23	578	160	0	993	25
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Width (ft)	10	10	10	10	10	11	12	12	10	12	11	11
Storage Length (ft)	180		100	0		0	0		115	0		0
Storage Lanes	1		1	1		1	0		0	0		0
Taper Length (ft)	75			0			0			0		
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	0.91	0.91	0.91	1.00	0.95	0.95
Fr <sub>t</sub>			0.850			0.850		0.968			0.996	
Fl <sub>t</sub> Protected	0.950			0.950				0.998				
Satd. Flow (prot)	1438	2669	1428	1451	2705	1450	0	4604	0	0	3189	0
Fl <sub>t</sub> Permitted	0.301			0.375				0.849				
Satd. Flow (perm)	456	2669	1428	573	2705	1450	0	3916	0	0	3189	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			136			109		76			3	
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		965			345			696			414	
Travel Time (s)		21.9			7.8			15.8			9.4	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	11%	13%	0%	10%	18%	2%	0%	3%	4%	2%	3%	13%
Parking (#/hr)		2										
Adj. Flow (vph)	259	649	7	166	589	1	25	628	174	0	1079	27
Shared Lane Traffic (%)												
Lane Group Flow (vph)	259	649	7	166	589	1	0	827	0	0	1106	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	L NA	Right	Left	Left	R NA	Left	Left	Right	Left	Left	Right
Median Width(ft)		10			10			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.17	1.26	1.17	1.17	1.17	1.12	1.07	1.07	1.17	1.07	1.12	1.12
Turning Speed (mph)	15		9	15		9	15		9	15		9
Turn Type	custom	NA	Perm	pm+pt	NA	custom	Perm	NA			NA	
Protected Phases	7	4 10		3	8	9		2			6	
Permitted Phases	4		4 10	8		8	2					
Minimum Split (s)	8.0			8.0	33.0	7.0	44.0	44.0			45.0	
Total Split (s)	11.0			9.0	33.0	7.0	44.0	44.0			49.0	
Total Split (%)	11.0%			9.0%	33.0%	7.0%	44.0%	44.0%			49.0%	
Maximum Green (s)	8.0			5.0	27.0	4.5	38.0	38.0			43.0	
Yellow Time (s)	3.0			3.5	4.0	2.0	4.0	4.0			4.0	
All-Red Time (s)	0.0			0.5	2.0	0.5	2.0	2.0			2.0	
Lost Time Adjust (s)	1.0			1.0	1.0	1.0		1.0			1.0	
Total Lost Time (s)	4.0			5.0	7.0	3.5		7.0			7.0	
Lead/Lag					Lag	Lead	Lag	Lag				
Lead-Lag Optimize?					Yes							
Walk Time (s)					5.0		4.0	4.0			5.0	
Flash Dont Walk (s)					22.0		34.0	34.0			34.0	
Pedestrian Calls (#/hr)					0		0	0			0	

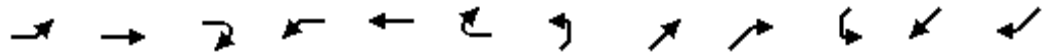
Lanes, Volumes, Timings  
 1: W. Columbus Ave. & W. 79th St.

02/23/2018

Lane Group	Ø1	Ø4	Ø10
Lane Configurations			
Traffic Volume (vph)			
Future Volume (vph)			
Ideal Flow (vphpl)			
Lane Width (ft)			
Storage Length (ft)			
Storage Lanes			
Taper Length (ft)			
Lane Util. Factor			
Frt			
Flt Protected			
Satd. Flow (prot)			
Flt Permitted			
Satd. Flow (perm)			
Right Turn on Red			
Satd. Flow (RTOR)			
Link Speed (mph)			
Link Distance (ft)			
Travel Time (s)			
Peak Hour Factor			
Heavy Vehicles (%)			
Parking (#/hr)			
Adj. Flow (vph)			
Shared Lane Traffic (%)			
Lane Group Flow (vph)			
Enter Blocked Intersection			
Lane Alignment			
Median Width(ft)			
Link Offset(ft)			
Crosswalk Width(ft)			
Two way Left Turn Lane			
Headway Factor			
Turning Speed (mph)			
Turn Type			
Protected Phases	1	4	10
Permitted Phases			
Minimum Split (s)	5.0	33.0	7.0
Total Split (s)	5.0	35.0	7.0
Total Split (%)	5%	35%	7%
Maximum Green (s)	2.0	29.0	5.0
Yellow Time (s)	3.0	4.0	2.0
All-Red Time (s)	0.0	2.0	0.0
Lost Time Adjust (s)			
Total Lost Time (s)			
Lead/Lag	Lead	Lag	Lead
Lead-Lag Optimize?			
Walk Time (s)		5.0	
Flash Dont Walk (s)		22.0	
Pedestrian Calls (#/hr)		0	

Lanes, Volumes, Timings  
 1: W. Columbus Ave. & W. 79th St.

02/23/2018



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NEL	NET	NER	SWL	SWT	SWR
Act Effct Green (s)	38.0	28.0	28.0	32.0	26.0	36.5		37.0			42.0	
Actuated g/C Ratio	0.38	0.28	0.28	0.32	0.26	0.36		0.37			0.42	
v/c Ratio	1.07	0.87	0.01	0.76	0.84	0.00		0.55			0.82	
Control Delay	112.7	48.1	0.0	25.3	32.2	0.0		24.1			25.9	
Queue Delay	6.4	0.3	0.0	0.0	0.0	0.0		0.0			12.5	
Total Delay	119.1	48.4	0.0	25.3	32.2	0.0		24.1			38.4	
LOS	F	D	A	C	C	A		C			D	
Approach Delay		68.1			30.7			24.1			38.4	
Approach LOS		E			C			C			D	
Stops (vph)	153	533	0	55	260	0		531			872	
Fuel Used(gal)	8	13	0	2	6	0		11			13	
CO Emissions (g/hr)	566	929	3	105	451	0		755			941	
NOx Emissions (g/hr)	110	181	1	20	88	0		147			183	
VOC Emissions (g/hr)	131	215	1	24	104	0		175			218	
Dilemma Vehicles (#)	0	0	0	0	0	0		0			0	
Queue Length 50th (ft)	~132	206	0	22	87	0		136			311	
Queue Length 95th (ft)	#248	#306	0	m27	m#133	m0		178			417	
Internal Link Dist (ft)		885			265			616			334	
Turn Bay Length (ft)	180		100									
Base Capacity (vph)	242	747	497	218	703	598		1496			1341	
Starvation Cap Reductn	0	0	0	0	0	0		0			233	
Spillback Cap Reductn	4	6	0	0	0	0		6			0	
Storage Cap Reductn	0	0	0	0	0	0		0			0	
Reduced v/c Ratio	1.09	0.88	0.01	0.76	0.84	0.00		0.56			1.00	

Intersection Summary

Area Type: Other

Cycle Length: 100

Actuated Cycle Length: 100

Offset: 96 (96%), Referenced to phase 1:Hold and 6:SWT, Start of Green

Natural Cycle: 100

Control Type: Pretimed

Maximum v/c Ratio: 1.07

Intersection Signal Delay: 41.0

Intersection LOS: D

Intersection Capacity Utilization 85.2%

ICU Level of Service E

Analysis Period (min) 15

~ Volume exceeds capacity, queue is theoretically infinite.

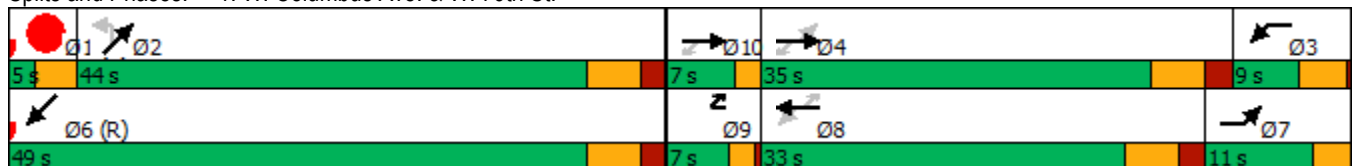
Queue shown is maximum after two cycles.

# 95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 1: W. Columbus Ave. & W. 79th St.



Lane Group	Ø1	Ø4	Ø10
Act Effct Green (s)			
Actuated g/C Ratio			
v/c Ratio			
Control Delay			
Queue Delay			
Total Delay			
LOS			
Approach Delay			
Approach LOS			
Stops (vph)			
Fuel Used(gal)			
CO Emissions (g/hr)			
NOx Emissions (g/hr)			
VOC Emissions (g/hr)			
Dilemma Vehicles (#)			
Queue Length 50th (ft)			
Queue Length 95th (ft)			
Internal Link Dist (ft)			
Turn Bay Length (ft)			
Base Capacity (vph)			
Starvation Cap Reductn			
Spillback Cap Reductn			
Storage Cap Reductn			
Reduced v/c Ratio			
<b>Intersection Summary</b>			

Lanes, Volumes, Timings  
2: S. Kedzie Ave. & W. 79th St.

02/23/2018



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑	↗	↖	↑↑			↔			↔	
Traffic Volume (vph)	0	590	167	29	565	51	125	501	37	29	714	5
Future Volume (vph)	0	590	167	29	565	51	125	501	37	29	714	5
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Width (ft)	11	11	12	9	11	12	12	11	12	12	11	12
Storage Length (ft)	0		0	40		0	0		0	0		0
Storage Lanes	0		1	1		0	0		0	0		0
Taper Length (ft)	0			25			0			0		
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Fr <sub>t</sub>			0.850		0.988			0.992			0.999	
Fl <sub>t</sub> Protected				0.950				0.991			0.998	
Satd. Flow (prot)	0	2978	1436	1193	2824	0	0	3144	0	0	3166	0
Fl <sub>t</sub> Permitted				0.268				0.560			0.895	
Satd. Flow (perm)	0	2978	1436	337	2824	0	0	1776	0	0	2839	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			182		9			9			1	
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		345			652			668			245	
Travel Time (s)		7.8			14.8			15.2			5.6	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	2%	11%	4%	29%	16%	12%	3%	3%	10%	0%	3%	0%
Bus Blockages (#/hr)	0	0	6	0	0	0	0	0	0	0	6	0
Adj. Flow (vph)	0	641	182	32	614	55	136	545	40	32	776	5
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	641	182	32	669	0	0	721	0	0	813	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	R NA	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		9			9			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.12	1.12	1.11	1.22	1.12	1.07	1.07	1.12	1.07	1.07	1.14	1.07
Turning Speed (mph)	15		9	15		9	15		9	15		9
Turn Type		NA	custom	custom	NA		pm+pt	NA		Perm	NA	
Protected Phases		4	9		8 10		5	2			6	
Permitted Phases			4	8			2			6		
Minimum Split (s)		24.0	7.0	24.0			11.0	34.0		34.0	34.0	
Total Split (s)		35.0	7.0	35.0			11.0	58.0		47.0	47.0	
Total Split (%)		35.0%	7.0%	35.0%			11.0%	58.0%		47.0%	47.0%	
Maximum Green (s)		29.0	5.0	29.0			6.0	52.0		41.0	41.0	
Yellow Time (s)		4.0	2.0	4.0			3.0	4.0		4.0	4.0	
All-Red Time (s)		2.0	0.0	2.0			2.0	2.0		2.0	2.0	
Lost Time Adjust (s)		1.0	1.0	1.0				1.0			1.0	
Total Lost Time (s)		7.0	3.0	7.0				7.0			7.0	
Lead/Lag		Lag	Lead	Lag			Lead			Lag	Lag	
Lead-Lag Optimize?				Yes			Yes			Yes	Yes	
Walk Time (s)		5.0		5.0				5.0		5.0	5.0	
Flash Dont Walk (s)		13.0		13.0				23.0		23.0	23.0	
Pedestrian Calls (#/hr)		0		0				0		0	0	

Lane Group	Ø10
Lane Configurations	
Traffic Volume (vph)	
Future Volume (vph)	
Ideal Flow (vphpl)	
Lane Width (ft)	
Storage Length (ft)	
Storage Lanes	
Taper Length (ft)	
Lane Util. Factor	
Fr <sub>t</sub>	
Fl <sub>t</sub> Protected	
Satd. Flow (prot)	
Fl <sub>t</sub> Permitted	
Satd. Flow (perm)	
Right Turn on Red	
Satd. Flow (RTOR)	
Link Speed (mph)	
Link Distance (ft)	
Travel Time (s)	
Peak Hour Factor	
Heavy Vehicles (%)	
Bus Blockages (#/hr)	
Adj. Flow (vph)	
Shared Lane Traffic (%)	
Lane Group Flow (vph)	
Enter Blocked Intersection	
Lane Alignment	
Median Width(ft)	
Link Offset(ft)	
Crosswalk Width(ft)	
Two way Left Turn Lane	
Headway Factor	
Turning Speed (mph)	
Turn Type	
Protected Phases	10
Permitted Phases	
Minimum Split (s)	7.0
Total Split (s)	7.0
Total Split (%)	7%
Maximum Green (s)	5.0
Yellow Time (s)	2.0
All-Red Time (s)	0.0
Lost Time Adjust (s)	
Total Lost Time (s)	
Lead/Lag	Lead
Lead-Lag Optimize?	Yes
Walk Time (s)	
Flash Dont Walk (s)	
Pedestrian Calls (#/hr)	
























Lane Group	Ø10
Act Effct Green (s)	
Actuated g/C Ratio	
v/c Ratio	
Control Delay	
Queue Delay	
Total Delay	
LOS	
Approach Delay	
Approach LOS	
Stops (vph)	
Fuel Used(gal)	
CO Emissions (g/hr)	
NOx Emissions (g/hr)	
VOC Emissions (g/hr)	
Dilemma Vehicles (#)	
Queue Length 50th (ft)	
Queue Length 95th (ft)	
Internal Link Dist (ft)	
Turn Bay Length (ft)	
Base Capacity (vph)	
Starvation Cap Reductn	
Spillback Cap Reductn	
Storage Cap Reductn	
Reduced v/c Ratio	
Intersection Summary	

Lanes, Volumes, Timings  
 3: W. Columbus Ave. & S. Kedzie Ave.

02/23/2018

												
Lane Group	NBL	NBT	NBR	SBL	SBT	SBR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Traffic Volume (vph)	1	463	89	9	648	555	400	413	3	97	463	12
Future Volume (vph)	1	463	89	9	648	555	400	413	3	97	463	12
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Width (ft)	12	11	12	12	10	10	11	11	11	10	11	12
Storage Length (ft)	0		0	0		100	0		0	90		0
Storage Lanes	0		0	0		1	1		0	1		0
Taper Length (ft)	0			0			0			25		
Lane Util. Factor	0.95	0.95	0.95	0.95	0.95	1.00	1.00	0.95	0.95	1.00	0.95	0.95
Fr <sub>t</sub>		0.976				0.850		0.999			0.996	
Fl <sub>t</sub> Protected					0.999		0.950			0.950		
Satd. Flow (prot)	0	3103	0	0	3047	1360	1574	3170	0	1580	3050	0
Fl <sub>t</sub> Permitted		0.954			0.943		0.258			0.491		
Satd. Flow (perm)	0	2960	0	0	2876	1360	428	3170	0	817	3050	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		24				43		1			2	
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		245			494			414			728	
Travel Time (s)		5.6			11.2			9.4			16.5	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	0%	4%	4%	50%	4%	5%	5%	4%	33%	1%	8%	6%
Adj. Flow (vph)	1	503	97	10	704	603	435	449	3	105	503	13
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	601	0	0	714	603	435	452	0	105	516	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			11			11	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.07	1.12	1.07	1.07	1.17	1.17	1.12	1.12	1.12	1.17	1.12	1.07
Turning Speed (mph)	15		9	15		9	15		9	15		9
Turn Type	Perm	NA		Perm	NA	pm+ov	pm+pt	NA		Perm	NA	
Protected Phases		2			6	7	7	4			8	
Permitted Phases	2			6		6	4			8		
Minimum Split (s)	28.0	28.0		28.0	28.0	8.0	8.0	26.0		26.0	26.0	
Total Split (s)	40.0	40.0		40.0	40.0	32.0	32.0	60.0		28.0	28.0	
Total Split (%)	40.0%	40.0%		40.0%	40.0%	32.0%	32.0%	60.0%		28.0%	28.0%	
Maximum Green (s)	34.0	34.0		34.0	34.0	29.0	29.0	54.0		22.0	22.0	
Yellow Time (s)	4.0	4.0		4.0	4.0	3.0	3.0	4.0		4.0	4.0	
All-Red Time (s)	2.0	2.0		2.0	2.0	0.0	0.0	2.0		2.0	2.0	
Lost Time Adjust (s)		1.0			1.0	1.0	1.0	1.0		1.0	1.0	
Total Lost Time (s)		7.0			7.0	4.0	4.0	7.0		7.0	7.0	
Lead/Lag						Lead	Lead			Lag	Lag	
Lead-Lag Optimize?						Yes	Yes			Yes	Yes	
Walk Time (s)	5.0	5.0		5.0	5.0			5.0		5.0	5.0	
Flash Dont Walk (s)	17.0	17.0		17.0	17.0			15.0		15.0	15.0	
Pedestrian Calls (#/hr)	0	0		0	0			0		0	0	
Act Effct Green (s)		33.0			33.0	68.0	56.0	53.0		21.0	21.0	



Lanes, Volumes, Timings  
4: Ashland Avenue & 79th Street

02/23/2018



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	85	478	34	74	514	79	63	375	58	49	843	98
Future Volume (vph)	85	478	34	74	514	79	63	375	58	49	843	98
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Width (ft)	9	10	10	9	10	11	10	11	11	10	11	11
Storage Length (ft)	80		100	60		30	100		30	100		30
Storage Lanes	1		1	1		1	1		1	1		1
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Ped Bike Factor	0.99		0.93	0.98		0.94	0.98		0.86	0.93		0.85
Frt			0.850			0.850			0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1539	1268	1360	1494	1321	1324	1425	2667	977	1506	2661	906
Flt Permitted	0.285			0.322			0.189			0.507		
Satd. Flow (perm)	455	1268	1265	496	1321	1250	277	2667	844	750	2661	767
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			50			50			50			50
Link Speed (mph)		30			30			30				30
Link Distance (ft)		664			1315			665				670
Travel Time (s)		15.1			29.9			15.1				15.2
Confl. Peds. (#/hr)	41		54	54		41	47		41	41		47
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Heavy Vehicles (%)	0%	10%	5%	3%	10%	9%	12%	6%	4%	6%	5%	9%
Bus Blockages (#/hr)	0	0	0	0	0	6	0	0	8	0	0	8
Parking (#/hr)		14			7			38	38		42	42
Adj. Flow (vph)	93	525	37	81	565	87	69	412	64	54	926	108
Shared Lane Traffic (%)												
Lane Group Flow (vph)	93	525	37	81	565	87	69	412	64	54	926	108
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			10				10
Link Offset(ft)		0			0			0				0
Crosswalk Width(ft)		16			16			16				16
Two way Left Turn Lane												
Headway Factor	1.22	1.47	1.17	1.22	1.40	1.15	1.17	1.36	1.77	1.17	1.38	1.83
Turning Speed (mph)	15		9	15		9	15		9	15		9
Turn Type	Perm	NA	Perm	Perm	NA	Perm	Perm	NA	Perm	Perm	NA	Perm
Protected Phases		4			8			2				6
Permitted Phases	4		4	8		8	2		2	6		6
Minimum Split (s)	38.0	38.0	38.0	38.0	38.0	38.0	27.0	27.0	27.0	27.0	27.0	27.0
Total Split (s)	59.0	59.0	59.0	59.0	59.0	59.0	51.0	51.0	51.0	51.0	51.0	51.0
Total Split (%)	53.6%	53.6%	53.6%	53.6%	53.6%	53.6%	46.4%	46.4%	46.4%	46.4%	46.4%	46.4%
Maximum Green (s)	51.0	51.0	51.0	51.0	51.0	51.0	43.0	43.0	43.0	43.0	43.0	43.0
Yellow Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
All-Red Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Lost Time Adjust (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Total Lost Time (s)	9.0	9.0	9.0	9.0	9.0	9.0	9.0	9.0	9.0	9.0	9.0	9.0
Lead/Lag												
Lead-Lag Optimize?												



Lanes, Volumes, Timings  
5: Loomis Blvd & 79th Street

02/23/2018
























Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	25	535	25	25	617	25	25	100	25	25	100	25
Future Volume (vph)	25	535	25	25	617	25	25	100	25	25	100	25
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (ft)	60		30	60		30	0		0	0		0
Storage Lanes	1		1	1		1	0		0	0		0
Taper Length (ft)	25			25			0			0		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.850			0.850		0.978			0.978	
Flt Protected	0.950			0.950				0.992			0.992	
Satd. Flow (prot)	1676	1588	1464	1676	1588	1500	0	1712	0	0	1712	0
Flt Permitted	0.329			0.380				0.941			0.941	
Satd. Flow (perm)	581	1588	1464	671	1588	1500	0	1624	0	0	1624	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			11			9		8			8	
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		1315			357			644			631	
Travel Time (s)		29.9			8.1			14.6			14.3	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Bus Blockages (#/hr)	0	0	6	0	0	0	0	0	0	0	0	0
Parking (#/hr)		0			0							
Adj. Flow (vph)	27	582	27	27	671	27	27	109	27	27	109	27
Shared Lane Traffic (%)												
Lane Group Flow (vph)	27	582	27	27	671	27	0	163	0	0	163	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.07	1.22	1.11	1.07	1.22	1.07	1.07	1.07	1.07	1.07	1.07	1.07
Turning Speed (mph)	15		9	15		9	15		9	15		9
Turn Type	Perm	NA	Perm	Perm	NA	Perm	Perm	NA		Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4		4	8		8	2			6		
Minimum Split (s)	18.0	18.0	18.0	18.0	18.0	18.0	19.0	19.0		19.0	19.0	
Total Split (s)	81.0	81.0	81.0	81.0	81.0	81.0	29.0	29.0		29.0	29.0	
Total Split (%)	73.6%	73.6%	73.6%	73.6%	73.6%	73.6%	26.4%	26.4%		26.4%	26.4%	
Maximum Green (s)	77.0	77.0	77.0	77.0	77.0	77.0	25.5	25.5		25.5	25.5	
Yellow Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	2.5	2.5		2.5	2.5	
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0		1.0	1.0	
Lost Time Adjust (s)	0.0	1.0	1.0	0.0	1.0	1.0		1.0			1.0	
Total Lost Time (s)	4.0	5.0	5.0	4.0	5.0	5.0		4.5			4.5	
Lead/Lag												
Lead-Lag Optimize?												
Walk Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0		5.0	5.0	
Flash Dont Walk (s)	9.0	9.0	9.0	9.0	9.0	9.0	10.0	10.0		10.0	10.0	
Pedestrian Calls (#/hr)	0	0	0	0	0	0	0	0		0	0	
Act Effct Green (s)	77.0	76.0	76.0	77.0	76.0	76.0		24.5			24.5	



Lanes, Volumes, Timings  
6: Morgan Street & 79th Street

02/23/2018

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	25	637	25	25	540	25	25	100	25	25	100	25
Future Volume (vph)	25	637	25	25	540	25	25	100	25	25	100	25
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (ft)	100		30	100		30	0		0	0		0
Storage Lanes	1		1	1		1	0		0	0		0
Taper Length (ft)	25			25			0			0		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.850			0.850		0.978			0.978	
Flt Protected	0.950			0.950				0.992			0.992	
Satd. Flow (prot)	1676	1588	1500	1676	1571	1500	0	1712	0	0	1712	0
Flt Permitted	0.344			0.269				0.935			0.935	
Satd. Flow (perm)	607	1588	1500	475	1571	1500	0	1614	0	0	1614	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			18			18		16			16	
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		323			1321			593			659	
Travel Time (s)		7.3			30.0			13.5			15.0	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Parking (#/hr)		0			2							
Adj. Flow (vph)	27	692	27	27	587	27	27	109	27	27	109	27
Shared Lane Traffic (%)												
Lane Group Flow (vph)	27	692	27	27	587	27	0	163	0	0	163	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.07	1.22	1.07	1.07	1.24	1.07	1.07	1.07	1.07	1.07	1.07	1.07
Turning Speed (mph)	15		9	15		9	15		9	15		9
Turn Type	Perm	NA	Perm	Perm	NA	Perm	Perm	NA		Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4		4	8		8	2			6		
Minimum Split (s)	17.0	17.0	17.0	17.0	17.0	17.0	21.0	21.0		21.0	21.0	
Total Split (s)	39.0	39.0	39.0	39.0	39.0	39.0	21.0	21.0		21.0	21.0	
Total Split (%)	65.0%	65.0%	65.0%	65.0%	65.0%	65.0%	35.0%	35.0%		35.0%	35.0%	
Maximum Green (s)	35.0	35.0	35.0	35.0	35.0	35.0	17.0	17.0		17.0	17.0	
Yellow Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0		1.0	1.0	
Lost Time Adjust (s)	1.0	1.0	1.0	1.0	1.0	1.0		1.0			1.0	
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0	5.0		5.0			5.0	
Lead/Lag												
Lead-Lag Optimize?												
Walk Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0		5.0	5.0	
Flash Dont Walk (s)	8.0	8.0	8.0	8.0	8.0	8.0	12.0	12.0		12.0	12.0	
Pedestrian Calls (#/hr)	0	0	0	0	0	0	0	0		0	0	
Act Effct Green (s)	34.0	34.0	34.0	34.0	34.0	34.0		16.0			16.0	
Actuated g/C Ratio	0.57	0.57	0.57	0.57	0.57	0.57		0.27			0.27	



Lanes, Volumes, Timings  
6: Morgan Street & 79th Street

02/23/2018



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
v/c Ratio	0.08	0.77	0.03	0.10	0.66	0.03		0.37				0.37
Control Delay	6.7	17.7	3.7	7.2	13.5	3.7		19.0				19.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0		0.0				0.0
Total Delay	6.7	17.7	3.7	7.2	13.5	3.7		19.0				19.0
LOS	A	B	A	A	B	A		B				B
Approach Delay		16.8			12.8			19.0				19.0
Approach LOS		B			B			B				B
Stops (vph)	12	457	7	12	361	7		107				107
Fuel Used(gal)	0	6	0	0	9	0		2				2
CO Emissions (g/hr)	11	449	8	25	632	22		130				136
NOx Emissions (g/hr)	2	87	2	5	123	4		25				26
VOC Emissions (g/hr)	3	104	2	6	147	5		30				31
Dilemma Vehicles (#)	0	0	0	0	0	0		0				0
Queue Length 50th (ft)	4	170	1	4	130	1		43				43
Queue Length 95th (ft)	14	#328	10	14	230	10		89				89
Internal Link Dist (ft)		243			1241			513				579
Turn Bay Length (ft)	100		30	100		30						
Base Capacity (vph)	343	899	857	269	890	857		442				442
Starvation Cap Reductn	0	0	0	0	0	0		0				0
Spillback Cap Reductn	0	0	0	0	0	0		0				0
Storage Cap Reductn	0	0	0	0	0	0		0				0
Reduced v/c Ratio	0.08	0.77	0.03	0.10	0.66	0.03		0.37				0.37

Intersection Summary

Area Type: Other

Cycle Length: 60

Actuated Cycle Length: 60

Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green

Natural Cycle: 60

Control Type: Pretimed

Maximum v/c Ratio: 0.77

Intersection Signal Delay: 15.7

Intersection LOS: B

Intersection Capacity Utilization 57.9%

ICU Level of Service B

Analysis Period (min) 15

# 95th percentile volume exceeds capacity, queue may be longer.

























Queue shown is maximum after two cycles.

Splits and Phases: 6: Morgan Street & 79th Street



Lanes, Volumes, Timings  
7: Halsted Street & 79th Street

02/23/2018

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	62	543	82	87	448	45	85	339	90	78	636	57
Future Volume (vph)	62	543	82	87	448	45	85	339	90	78	636	57
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Width (ft)	9	10	10	9	10	10	10	11	13	10	10	13
Storage Length (ft)	100		100	60		100	100		100	100		100
Storage Lanes	1		1	1		1	1		1	1		1
Taper Length (ft)	100			100			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.850			0.850			0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1539	1375	1389	1539	1356	1386	1596	1689	1520	1550	1585	1506
Flt Permitted	0.320			0.219			0.146			0.453		
Satd. Flow (perm)	518	1375	1389	355	1356	1386	245	1689	1520	739	1585	1506
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			42			40			77			40
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		1321			665			631			665	
Travel Time (s)		30.0			15.1			14.3			15.1	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	0%	10%	2%	0%	9%	3%	0%	3%	4%	3%	6%	5%
Bus Blockages (#/hr)	0	0	2	0	0	0	0	0	0	0	0	0
Parking (#/hr)		0			4							
Adj. Flow (vph)	67	590	89	95	487	49	92	368	98	85	691	62
Shared Lane Traffic (%)												
Lane Group Flow (vph)	67	590	89	95	487	49	92	368	98	85	691	62
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			10			10	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.22	1.33	1.18	1.22	1.37	1.17	1.17	1.12	1.03	1.17	1.17	1.03
Turning Speed (mph)	15		9	15		9	15		9	15		9
Turn Type	Perm	NA	Perm	Perm	NA	Perm	Perm	NA	Perm	Perm	NA	Perm
Protected Phases		4			8			2			6	
Permitted Phases	4		4	8		8	2		2	6		6
Minimum Split (s)	30.0	30.0	30.0	30.0	30.0	30.0	27.0	27.0	27.0	27.0	27.0	27.0
Total Split (s)	54.0	54.0	54.0	54.0	54.0	54.0	56.0	56.0	56.0	56.0	56.0	56.0
Total Split (%)	49.1%	49.1%	49.1%	49.1%	49.1%	49.1%	50.9%	50.9%	50.9%	50.9%	50.9%	50.9%
Maximum Green (s)	47.0	47.0	47.0	47.0	47.0	47.0	49.0	49.0	49.0	49.0	49.0	49.0
Yellow Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
All-Red Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lost Time Adjust (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Total Lost Time (s)	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0
Lead/Lag												
Lead-Lag Optimize?												
Walk Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Flash Dont Walk (s)	18.0	18.0	18.0	18.0	18.0	18.0	15.0	15.0	15.0	15.0	15.0	15.0



Lanes, Volumes, Timings  
8: 79th Street & 150 W.

02/23/2018



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Volume (vph)	10	813	10	10	579	10	10	10	10	10	10	10
Future Volume (vph)	10	813	10	10	579	10	10	10	10	10	10	10
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Fr <sub>t</sub>		0.998			0.998			0.955			0.955	
Fl <sub>t</sub> Protected		0.999			0.999			0.984			0.984	
Satd. Flow (prot)	0	1583	0	0	1583	0	0	1658	0	0	1658	0
Fl <sub>t</sub> Permitted		0.992			0.985			0.925			0.925	
Satd. Flow (perm)	0	1572	0	0	1561	0	0	1559	0	0	1559	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		2			2			11			11	
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		558			495			173			227	
Travel Time (s)		12.7			11.3			3.9			5.2	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Parking (#/hr)		0			0							
Adj. Flow (vph)	11	884	11	11	629	11	11	11	11	11	11	11
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	906	0	0	651	0	0	33	0	0	33	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			0			0	
Link Offset(ft)		0			0			0			-30	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.07	1.22	1.07	1.07	1.22	1.07	1.07	1.07	1.07	1.07	1.07	1.07
Turning Speed (mph)	15		9	15		9	15		9	15		9
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Minimum Split (s)	9.0	9.0		9.0	9.0		21.0	21.0		21.0	21.0	
Total Split (s)	79.0	79.0		79.0	79.0		21.0	21.0		21.0	21.0	
Total Split (%)	79.0%	79.0%		79.0%	79.0%		21.0%	21.0%		21.0%	21.0%	
Maximum Green (s)	75.0	75.0		75.0	75.0		17.0	17.0		17.0	17.0	
Yellow Time (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
All-Red Time (s)	1.0	1.0		1.0	1.0		1.0	1.0		1.0	1.0	
Lost Time Adjust (s)		1.0			1.0			1.0			1.0	
Total Lost Time (s)		5.0			5.0			5.0			5.0	
Lead/Lag												
Lead-Lag Optimize?												
Walk Time (s)							5.0	5.0		5.0	5.0	
Flash Dont Walk (s)							12.0	12.0		12.0	12.0	
Pedestrian Calls (#/hr)							0	0		0	0	
Act Effct Green (s)		74.0			74.0			16.0			16.0	
Actuated g/C Ratio		0.74			0.74			0.16			0.16	
v/c Ratio		0.78			0.56			0.13			0.13	
Control Delay		14.0			13.3			28.3			28.3	
Queue Delay		0.0			0.0			0.0			0.0	

Lanes, Volumes, Timings  
8: 79th Street & 150 W.

02/23/2018



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Total Delay		14.0			13.3			28.3			28.3	
LOS		B			B			C			C	
Approach Delay		14.0			13.3			28.3			28.3	
Approach LOS		B			B			C			C	
Stops (vph)		504			375			21			21	
Fuel Used(gal)		9			8			0			0	
CO Emissions (g/hr)		615			527			23			24	
NOx Emissions (g/hr)		120			103			4			5	
VOC Emissions (g/hr)		142			122			5			6	
Dilemma Vehicles (#)		0			0			0			0	
Queue Length 50th (ft)		297			190			12			12	
Queue Length 95th (ft)		484			227			40			40	
Internal Link Dist (ft)		478			415			93			147	
Turn Bay Length (ft)												
Base Capacity (vph)		1163			1155			258			258	
Starvation Cap Reductn		0			0			0			0	
Spillback Cap Reductn		0			0			0			0	
Storage Cap Reductn		0			0			0			0	
Reduced v/c Ratio		0.78			0.56			0.13			0.13	

Intersection Summary

Area Type: Other  
 Cycle Length: 100  
 Actuated Cycle Length: 100  
 Offset: 3 (3%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green  
 Natural Cycle: 70  
 Control Type: Pretimed  
 Maximum v/c Ratio: 0.78  
 Intersection Signal Delay: 14.3  
 Intersection LOS: B  
 Intersection Capacity Utilization 74.0%  
 ICU Level of Service D  
 Analysis Period (min) 15

Splits and Phases: 8: 79th Street & 150 W.



Lanes, Volumes, Timings  
 9: Lafayette Avenue & 79th Street

02/23/2018



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑↑	↗	↖	↑↑	↗				↖	↑↑↑	↗
Traffic Volume (vph)	0	624	209	280	514	15	0	0	0	181	1220	85
Future Volume (vph)	0	624	209	280	514	15	0	0	0	181	1220	85
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Width (ft)	10	10	12	10	10	11	12	12	12	12	10	8
Storage Length (ft)	75		150	0		0	0		0	0		0
Storage Lanes	2		1	1		1	0		0	1		1
Taper Length (ft)	100			0			0			0		
Lane Util. Factor	1.00	0.91	1.00	1.00	0.95	1.00	1.00	1.00	1.00	0.86	0.86	1.00
Ped Bike Factor			0.69	0.94		0.97						0.97
Frt			0.850			0.850						0.850
Flt Protected				0.950						0.950	0.999	
Satd. Flow (prot)	0	4208	1286	1550	2682	740	0	0	0	1337	4083	1087
Flt Permitted				0.222						0.950	0.999	
Satd. Flow (perm)	0	4208	886	340	2682	715	0	0	0	1337	4083	1051
Right Turn on Red			Yes			No			Yes			Yes
Satd. Flow (RTOR)			87									109
Link Speed (mph)		30			30			30				30
Link Distance (ft)		330			322			703				664
Travel Time (s)		7.5			7.3			16.0				15.1
Confl. Peds. (#/hr)	5		130	130		5	20					20
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	2%	9%	19%	3%	8%	100%	2%	2%	2%	10%	6%	22%
Parking (#/hr)					17							
Adj. Flow (vph)	0	678	227	304	559	16	0	0	0	197	1326	92
Shared Lane Traffic (%)										10%		
Lane Group Flow (vph)	0	678	227	304	559	16	0	0	0	177	1346	92
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	L NA	Left	L NA	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		10			10			12				12
Link Offset(ft)		0			0			0				0
Crosswalk Width(ft)		16			16			16				16
Two way Left Turn Lane												
Headway Factor	1.17	1.17	1.07	1.17	1.32	1.12	1.07	1.07	1.07	1.07	1.17	1.28
Turning Speed (mph)	15		9	15		9	15		9	15		9
Turn Type		NA	Perm	pm+pt	NA	custom				Perm	NA	Perm
Protected Phases		4 9		3	8	9					6	
Permitted Phases			4 9	8		8				6		6
Minimum Split (s)				8.0	26.0	8.0				36.0	36.0	36.0
Total Split (s)				23.0	46.0	8.0				46.0	46.0	46.0
Total Split (%)				23.0%	46.0%	8.0%				46.0%	46.0%	46.0%
Maximum Green (s)				20.0	38.0	6.0				38.0	38.0	38.0
Yellow Time (s)				3.0	3.0	2.0				3.0	3.0	3.0
All-Red Time (s)				0.0	5.0	0.0				5.0	5.0	5.0
Lost Time Adjust (s)				1.0	1.0	1.0				1.0	1.0	1.0
Total Lost Time (s)				4.0	9.0	3.0				9.0	9.0	9.0
Lead/Lag				Lead								
Lead-Lag Optimize?												
Walk Time (s)					5.0					5.0	5.0	5.0

Lane Group	Ø4
Lane Configurations	
Traffic Volume (vph)	
Future Volume (vph)	
Ideal Flow (vphpl)	
Lane Width (ft)	
Storage Length (ft)	
Storage Lanes	
Taper Length (ft)	
Lane Util. Factor	
Ped Bike Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Right Turn on Red	
Satd. Flow (RTOR)	
Link Speed (mph)	
Link Distance (ft)	
Travel Time (s)	
Confl. Peds. (#/hr)	
Peak Hour Factor	
Heavy Vehicles (%)	
Parking (#/hr)	
Adj. Flow (vph)	
Shared Lane Traffic (%)	
Lane Group Flow (vph)	
Enter Blocked Intersection	
Lane Alignment	
Median Width(ft)	
Link Offset(ft)	
Crosswalk Width(ft)	
Two way Left Turn Lane	
Headway Factor	
Turning Speed (mph)	
Turn Type	
Protected Phases	4
Permitted Phases	
Minimum Split (s)	20.0
Total Split (s)	23.0
Total Split (%)	23%
Maximum Green (s)	20.0
Yellow Time (s)	3.0
All-Red Time (s)	0.0
Lost Time Adjust (s)	
Total Lost Time (s)	
Lead/Lag	Lag
Lead-Lag Optimize?	
Walk Time (s)	5.0

Lanes, Volumes, Timings  
 9: Lafayette Avenue & 79th Street

02/23/2018

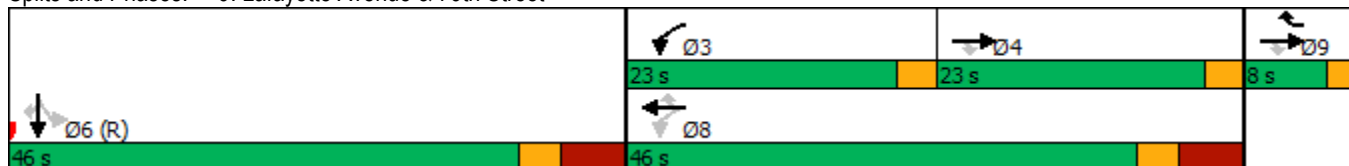


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Flash Dont Walk (s)					13.0					23.0	23.0	23.0
Pedestrian Calls (#/hr)					0					0	0	0
Act Effct Green (s)		27.0	27.0	42.0	37.0	48.0				37.0	37.0	37.0
Actuated g/C Ratio		0.27	0.27	0.42	0.37	0.48				0.37	0.37	0.37
v/c Ratio		0.60	0.75	0.82	0.56	0.05				0.36	0.89	0.20
Control Delay		26.6	26.1	37.7	23.1	13.7				25.5	38.5	4.2
Queue Delay		0.0	0.0	0.6	0.5	0.0				0.1	5.3	0.0
Total Delay		26.6	26.1	38.3	23.6	13.7				25.7	43.8	4.2
LOS		C	C	D	C	B				C	D	A
Approach Delay		26.5			28.5						39.6	
Approach LOS		C			C						D	
Stops (vph)		512	162	228	454	10				116	1096	9
Fuel Used(gal)		10	3	4	6	0				2	22	1
CO Emissions (g/hr)		715	234	287	434	9				163	1550	39
NOx Emissions (g/hr)		139	46	56	85	2				32	302	8
VOC Emissions (g/hr)		166	54	67	101	2				38	359	9
Dilemma Vehicles (#)		0	0	0	0	0				0	0	0
Queue Length 50th (ft)		135	81	174	174	5				94	308	0
Queue Length 95th (ft)		162	m125	#273	231	m12				160	#389	25
Internal Link Dist (ft)		250			242			623			584	
Turn Bay Length (ft)			150									
Base Capacity (vph)		1136	302	372	992	344				494	1510	457
Starvation Cap Reductn		0	0	6	145	0				0	0	0
Spillback Cap Reductn		0	0	0	0	0				40	124	0
Storage Cap Reductn		0	0	0	0	0				0	0	0
Reduced v/c Ratio		0.60	0.75	0.83	0.66	0.05				0.39	0.97	0.20

Intersection Summary

Area Type: Other  
 Cycle Length: 100  
 Actuated Cycle Length: 100  
 Offset: 0 (0%), Referenced to phase 6:SBTL, Start of Green  
 Natural Cycle: 80  
 Control Type: Pretimed  
 Maximum v/c Ratio: 0.89  
 Intersection Signal Delay: 33.2 Intersection LOS: C  
 Intersection Capacity Utilization 75.8% ICU Level of Service D  
 Analysis Period (min) 15  
 # 95th percentile volume exceeds capacity, queue may be longer.  
 Queue shown is maximum after two cycles.  
 m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 9: Lafayette Avenue & 79th Street





























Lane Group	Ø4
Flash Dont Walk (s)	7.0
Pedestrian Calls (#/hr)	0
Act Effct Green (s)	
Actuated g/C Ratio	
v/c Ratio	
Control Delay	
Queue Delay	
Total Delay	
LOS	
Approach Delay	
Approach LOS	
Stops (vph)	
Fuel Used(gal)	
CO Emissions (g/hr)	
NOx Emissions (g/hr)	
VOC Emissions (g/hr)	
Dilemma Vehicles (#)	
Queue Length 50th (ft)	
Queue Length 95th (ft)	
Internal Link Dist (ft)	
Turn Bay Length (ft)	
Base Capacity (vph)	
Starvation Cap Reductn	
Spillback Cap Reductn	
Storage Cap Reductn	
Reduced v/c Ratio	
<b>Intersection Summary</b>	

Lanes, Volumes, Timings  
10: State Street & 79th Street

02/23/2018

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	 				  			 				
Traffic Volume (vph)	357	448	15	0	461	178	333	242	244	0	0	0
Future Volume (vph)	357	448	15	0	461	178	333	242	244	0	0	0
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Width (ft)	10	10	11	10	10	11	12	11	16	12	12	12
Storage Length (ft)	0		0	200		115	0		0	0		0
Storage Lanes	2		1	1		1	1		1	0		0
Taper Length (ft)	0			50			0			0		
Lane Util. Factor	0.97	1.00	1.00	1.00	0.91	1.00	0.91	0.91	1.00	1.00	1.00	1.00
Ped Bike Factor	0.86		0.46			0.82	0.99	1.00	0.84			
Frt			0.850			0.850			0.850			
Flt Protected	0.950						0.950	0.981				
Satd. Flow (prot)	3036	1260	740	0	4496	1450	1526	3046	1700	0	0	0
Flt Permitted	0.453						0.950	0.981				
Satd. Flow (perm)	1239	1260	338	0	4496	1183	1513	3035	1421	0	0	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			55			142			142			
Link Speed (mph)		30			30			30				30
Link Distance (ft)		322			463			683				659
Travel Time (s)		7.3			10.5			15.5				15.0
Confl. Peds. (#/hr)	82		240	240		82	8		145	145		8
Peak Hour Factor	0.89	0.90	0.92	0.92	0.90	0.78	0.91	0.95	0.78	0.92	0.92	0.92
Heavy Vehicles (%)	2%	2%	100%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Parking (#/hr)		27										
Adj. Flow (vph)	401	498	16	0	512	228	366	255	313	0	0	0
Shared Lane Traffic (%)							45%					
Lane Group Flow (vph)	401	498	16	0	512	228	201	420	313	0	0	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	L NA	Right	Left	L NA	Right	L NA	L NA	Right	Left	Left	Right
Median Width(ft)		20			20			12				12
Link Offset(ft)		0			0			0				0
Crosswalk Width(ft)		16			16			16				16
Two way Left Turn Lane												
Headway Factor	1.17	1.62	1.12	1.17	1.17	1.12	1.07	1.12	0.91	1.07	1.07	1.07
Turning Speed (mph)	15		9	15		9	15		9	15		9
Turn Type	pm+pt	NA	Perm		NA	Perm	Perm	NA	Perm			
Protected Phases	7	4			8			2				
Permitted Phases	4		4			8	2		2			
Minimum Split (s)	8.0	26.0	26.0		22.0	22.0	36.0	36.0	36.0			
Total Split (s)	12.0	63.0	63.0		51.0	51.0	37.0	37.0	37.0			
Total Split (%)	12.0%	63.0%	63.0%		51.0%	51.0%	37.0%	37.0%	37.0%			
Maximum Green (s)	9.0	55.0	55.0		43.0	43.0	29.0	29.0	29.0			
Yellow Time (s)	3.0	3.0	3.0		3.0	3.0	3.0	3.0	3.0			
All-Red Time (s)	0.0	5.0	5.0		5.0	5.0	5.0	5.0	5.0			
Lost Time Adjust (s)	1.0	1.0	1.0		1.0	1.0	1.0	1.0	1.0			
Total Lost Time (s)	4.0	9.0	9.0		9.0	9.0	9.0	9.0	9.0			
Lead/Lag	Lag				Lead	Lead						
Lead-Lag Optimize?	Yes				Yes	Yes						
Walk Time (s)		5.0	5.0		5.0	5.0	5.0	5.0	5.0			

Lanes, Volumes, Timings  
10: State Street & 79th Street

02/23/2018



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Flash Dont Walk (s)		13.0	13.0		9.0	9.0	23.0	23.0	23.0			
Pedestrian Calls (#/hr)		0	0		0	0	0	0	0			
Act Effct Green (s)	59.0	54.0	54.0		42.0	42.0	28.0	28.0	28.0			
Actuated g/C Ratio	0.59	0.54	0.54		0.42	0.42	0.28	0.28	0.28			
v/c Ratio	0.46	0.73	0.08		0.27	0.39	0.48	0.49	0.63			
Control Delay	11.1	37.8	1.4		19.5	9.9	34.4	32.5	23.0			
Queue Delay	0.0	13.7	0.0		0.0	0.0	0.0	0.0	0.0			
Total Delay	11.1	51.5	1.4		19.5	9.9	34.4	32.5	23.0			
LOS	B	D	A		B	A	C	C	C			
Approach Delay		32.9			16.5			29.7				
Approach LOS		C			B			C				
Stops (vph)	169	358	0		289	49	150	319	121			
Fuel Used(gal)	3	7	0		8	2	3	6	3			
CO Emissions (g/hr)	184	458	3		574	173	216	450	218			
NOx Emissions (g/hr)	36	89	1		112	34	42	88	42			
VOC Emissions (g/hr)	43	106	1		133	40	50	104	50			
Dilemma Vehicles (#)	0	0	0		0	0	0	0	0			
Queue Length 50th (ft)	38	215	0		76	34	116	122	93			
Queue Length 95th (ft)	m54	m317	m0		102	65	194	173	142			
Internal Link Dist (ft)		242			383			603			579	
Turn Bay Length (ft)						115						
Base Capacity (vph)	874	680	207		1888	579	423	849	500			
Starvation Cap Reductn	0	167	0		0	0	0	0	0			
Spillback Cap Reductn	0	0	0		65	0	0	0	0			
Storage Cap Reductn	0	0	0		0	0	0	0	0			
Reduced v/c Ratio	0.46	0.97	0.08		0.28	0.39	0.48	0.49	0.63			

Intersection Summary

Area Type: Other

Cycle Length: 100

Actuated Cycle Length: 100

Offset: 0 (0%), Referenced to phase 2:NBTL, Start of Green

Natural Cycle: 80

Control Type: Pretimed

Maximum v/c Ratio: 0.73

Intersection Signal Delay: 27.1

Intersection LOS: C

Intersection Capacity Utilization 69.4%

ICU Level of Service C

Analysis Period (min) 15

m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 10: State Street & 79th Street



Lanes, Volumes, Timings  
11: Indiana Avenue & 79th Street

02/23/2018



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑	↗		↖						↕	
Traffic Volume (vph)	0	604	88	25	570	0	0	0	0	25	25	69
Future Volume (vph)	0	604	88	25	570	0	0	0	0	25	25	69
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (ft)	0		30	0		0	0		0	0		0
Storage Lanes	0		1	0		0	0		0	0		0
Taper Length (ft)	0			0			0			0		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.850									0.922
Flt Protected					0.998							0.990
Satd. Flow (prot)	0	1588	1488	0	1585	0	0	0	0	0	1611	0
Flt Permitted					0.963							0.990
Satd. Flow (perm)	0	1588	1488	0	1529	0	0	0	0	0	1611	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			45									75
Link Speed (mph)		30			30			30				30
Link Distance (ft)		869			1306			672				662
Travel Time (s)		19.8			29.7			15.3				15.0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Bus Blockages (#/hr)	0	0	2	0	0	0	0	0	0	0	0	0
Parking (#/hr)		0			0							
Adj. Flow (vph)	0	657	96	27	620	0	0	0	0	27	27	75
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	657	96	0	647	0	0	0	0	0	129	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		10			10			0				0
Link Offset(ft)		0			0			0				0
Crosswalk Width(ft)		16			16			16				16
Two way Left Turn Lane												
Headway Factor	1.07	1.22	1.08	1.07	1.22	1.07	1.07	1.07	1.07	1.07	1.07	1.07
Turning Speed (mph)	15		9	15		9	15		9	15		9
Turn Type		NA	Perm	Perm	NA					Perm	NA	
Protected Phases		4			8							6
Permitted Phases			4	8						6		
Minimum Split (s)		18.0	18.0	18.0	18.0					19.0	19.0	
Total Split (s)		50.0	50.0	50.0	50.0					20.0	20.0	
Total Split (%)		71.4%	71.4%	71.4%	71.4%					28.6%	28.6%	
Maximum Green (s)		45.0	45.0	45.0	45.0					16.0	16.0	
Yellow Time (s)		3.0	3.0	3.0	3.0					3.0	3.0	
All-Red Time (s)		2.0	2.0	2.0	2.0					1.0	1.0	
Lost Time Adjust (s)		1.0	1.0		1.0							1.0
Total Lost Time (s)		6.0	6.0		6.0							5.0
Lead/Lag												
Lead-Lag Optimize?												
Walk Time (s)		5.0	5.0	5.0	5.0					5.0	5.0	
Flash Dont Walk (s)		8.0	8.0	8.0	8.0					10.0	10.0	
Pedestrian Calls (#/hr)		0	0	0	0					0	0	
Act Efect Green (s)		44.0	44.0		44.0							15.0

Lanes, Volumes, Timings  
 11: Indiana Avenue & 79th Street

02/23/2018

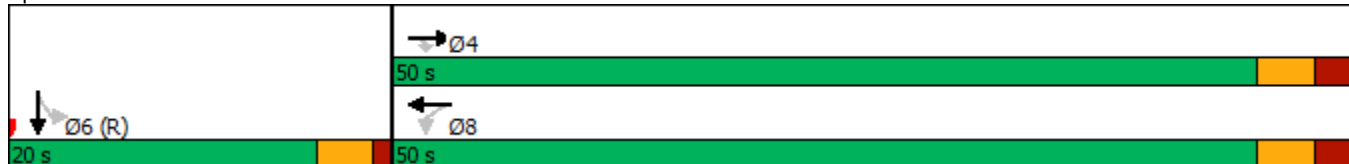


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Actuated g/C Ratio		0.63	0.63		0.63							0.21
v/c Ratio		0.66	0.10		0.67							0.32
Control Delay		12.3	3.4		4.4							13.7
Queue Delay		0.0	0.0		0.0							0.0
Total Delay		12.3	3.4		4.4							13.7
LOS		B	A		A							B
Approach Delay		11.1			4.4							13.7
Approach LOS		B			A							B
Stops (vph)		368	18		164							49
Fuel Used(gal)		10	1		8							1
CO Emissions (g/hr)		686	75		524							85
NOx Emissions (g/hr)		133	15		102							17
VOC Emissions (g/hr)		159	17		122							20
Dilemma Vehicles (#)		0	0		0							0
Queue Length 50th (ft)		156	7		28							19
Queue Length 95th (ft)		263	23		m36							61
Internal Link Dist (ft)		789			1226			592				582
Turn Bay Length (ft)			30									
Base Capacity (vph)		998	952		961							404
Starvation Cap Reductn		0	0		0							0
Spillback Cap Reductn		0	0		0							0
Storage Cap Reductn		0	0		0							0
Reduced v/c Ratio		0.66	0.10		0.67							0.32

Intersection Summary

Area Type: Other  
 Cycle Length: 70  
 Actuated Cycle Length: 70  
 Offset: 51 (73%), Referenced to phase 6:SBTL, Start of Green  
 Natural Cycle: 60  
 Control Type: Pretimed  
 Maximum v/c Ratio: 0.67  
 Intersection Signal Delay: 8.5  
 Intersection LOS: A  
 Intersection Capacity Utilization 74.8%  
 ICU Level of Service D  
 Analysis Period (min) 15  
 m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 11: Indiana Avenue & 79th Street



Lanes, Volumes, Timings  
12: King Dr & 79th Street

02/23/2018



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	34	539	56	64	509	47	66	313	58	64	583	20
Future Volume (vph)	34	539	56	64	509	47	66	313	58	64	583	20
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Width (ft)	10	10	11	10	10	11	10	10	10	10	10	10
Storage Length (ft)	80		100	60		100	60		30	50		50
Storage Lanes	1		1	1		1	1		1	1		1
Taper Length (ft)	100			75			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	0.96		0.85	0.96		0.86	0.99		0.88	0.94		0.92
Frt			0.850			0.850			0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1565	1425	1450	1565	1416	1450	1565	1647	1400	1565	1647	1400
Flt Permitted	0.278			0.247			0.171			0.469		
Satd. Flow (perm)	439	1425	1236	391	1416	1248	277	1647	1230	728	1647	1286
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			47			42			36			31
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		1306			1324			671			675	
Travel Time (s)		29.7			30.1			15.3			15.3	
Confl. Peds. (#/hr)	73		78	78		73	36		59	59		36
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Parking (#/hr)		7			8							
Adj. Flow (vph)	37	586	61	70	553	51	72	340	63	70	634	22
Shared Lane Traffic (%)												
Lane Group Flow (vph)	37	586	61	70	553	51	72	340	63	70	634	22
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		10			10			10			10	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.17	1.40	1.12	1.17	1.41	1.12	1.17	1.17	1.17	1.17	1.17	1.17
Turning Speed (mph)	15		9	15		9	15		9	15		9
Turn Type	Perm	NA	Perm	Perm	NA	Perm	Perm	NA	Perm	Perm	NA	Perm
Protected Phases		4			8			2			6	
Permitted Phases	4		4	8		8	2		2	6		6
Minimum Split (s)	26.0	26.0	26.0	26.0	26.0	26.0	24.0	24.0	24.0	24.0	24.0	24.0
Total Split (s)	36.0	36.0	36.0	36.0	36.0	36.0	34.0	34.0	34.0	34.0	34.0	34.0
Total Split (%)	51.4%	51.4%	51.4%	51.4%	51.4%	51.4%	48.6%	48.6%	48.6%	48.6%	48.6%	48.6%
Maximum Green (s)	31.0	31.0	31.0	31.0	31.0	31.0	30.0	30.0	30.0	30.0	30.0	30.0
Yellow Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Total Lost Time (s)	6.0	6.0	6.0	6.0	6.0	6.0	5.0	5.0	5.0	5.0	5.0	5.0
Lead/Lag												
Lead-Lag Optimize?												
Walk Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Flash Dont Walk (s)	16.0	16.0	16.0	16.0	16.0	16.0	15.0	15.0	15.0	15.0	15.0	15.0



Lanes, Volumes, Timings  
 13: St Lawrence Avenue & 79th Street

02/23/2018



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↑	↗		↕				
Traffic Volume (vph)	25	636	0	0	595	25	25	100	25	0	0	0
Future Volume (vph)	25	636	0	0	595	25	25	100	25	0	0	0
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (ft)	0		30	0		30	0		0	0		0
Storage Lanes	0		0	0		1	0		0	0		0
Taper Length (ft)	0			0			0			0		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt						0.850		0.978				
Flt Protected		0.998						0.992				
Satd. Flow (prot)	0	1585	0	0	1588	1500	0	1712	0	0	0	0
Flt Permitted		0.969						0.992				
Satd. Flow (perm)	0	1539	0	0	1588	1500	0	1712	0	0	0	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)						16		13				
Link Speed (mph)		30			30			30				30
Link Distance (ft)		1324			660			692				656
Travel Time (s)		30.1			15.0			15.7				14.9
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Parking (#/hr)		0			0							
Adj. Flow (vph)	27	691	0	0	647	27	27	109	27	0	0	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	718	0	0	647	27	0	163	0	0	0	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		10			10			0				0
Link Offset(ft)		0			0			0				0
Crosswalk Width(ft)		16			16			16				16
Two way Left Turn Lane												
Headway Factor	1.07	1.22	1.07	1.07	1.22	1.07	1.07	1.07	1.07	1.07	1.07	1.07
Turning Speed (mph)	15		9	15		9	15		9	15		9
Turn Type	Perm	NA			NA	Perm	Perm	NA				
Protected Phases		4			8			2				
Permitted Phases	4					8	2					
Minimum Split (s)	16.0	16.0			16.0	16.0	17.0	17.0				
Total Split (s)	52.0	52.0			52.0	52.0	18.0	18.0				
Total Split (%)	74.3%	74.3%			74.3%	74.3%	25.7%	25.7%				
Maximum Green (s)	48.0	48.0			48.0	48.0	14.0	14.0				
Yellow Time (s)	3.0	3.0			3.0	3.0	3.0	3.0				
All-Red Time (s)	1.0	1.0			1.0	1.0	1.0	1.0				
Lost Time Adjust (s)		1.0			1.0	1.0		1.0				
Total Lost Time (s)		5.0			5.0	5.0		5.0				
Lead/Lag												
Lead-Lag Optimize?												
Walk Time (s)	5.0	5.0			5.0	5.0	5.0	5.0				
Flash Dont Walk (s)	7.0	7.0			7.0	7.0	8.0	8.0				
Pedestrian Calls (#/hr)	0	0			0	0	0	0				
Act Effct Green (s)		47.0			47.0	47.0		13.0				
Actuated g/C Ratio		0.67			0.67	0.67		0.19				



Lanes, Volumes, Timings  
 13: St Lawrence Avenue & 79th Street

02/23/2018



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
v/c Ratio		0.70			0.61	0.03			0.50			
Control Delay		3.8			9.4	2.6			29.4			
Queue Delay		0.0			0.0	0.0			0.0			
Total Delay		3.8			9.4	2.6			29.4			
LOS		A			A	A			C			
Approach Delay		3.8			9.1				29.4			
Approach LOS		A			A				C			
Stops (vph)		130			311	6			122			
Fuel Used(gal)		8			6	0			2			
CO Emissions (g/hr)		563			414	12			167			
NOx Emissions (g/hr)		110			81	2			32			
VOC Emissions (g/hr)		131			96	3			39			
Dilemma Vehicles (#)		0			0	0			0			
Queue Length 50th (ft)		17			129	1			58			
Queue Length 95th (ft)		m25			217	8			114			
Internal Link Dist (ft)		1244			580				612			576
Turn Bay Length (ft)						30						
Base Capacity (vph)		1033			1066	1012			328			
Starvation Cap Reductn		0			0	0			0			
Spillback Cap Reductn		0			0	0			0			
Storage Cap Reductn		0			0	0			0			
Reduced v/c Ratio		0.70			0.61	0.03			0.50			

Intersection Summary

Area Type: Other  
 Cycle Length: 70  
 Actuated Cycle Length: 70  
 Offset: 53 (76%), Referenced to phase 2:NBT, Start of Green  
 Natural Cycle: 60  
 Control Type: Pretimed  
 Maximum v/c Ratio: 0.70  
 Intersection Signal Delay: 8.8  
 Intersection Capacity Utilization 75.9%  
 Analysis Period (min) 15  
 Intersection LOS: A  
 ICU Level of Service D

m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 13: St Lawrence Avenue & 79th Street



Lanes, Volumes, Timings  
14: Kenwood Avenue & 79th Street

02/23/2018



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	240	25	25	395	0	0	0	0	25	100	25
Future Volume (vph)	0	240	25	25	395	0	0	0	0	25	100	25
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Fr <sub>t</sub>		0.987									0.978	
Fl <sub>t</sub> Protected					0.997						0.992	
Satd. Flow (prot)	0	1568	0	0	1759	0	0	0	0	0	1712	0
Fl <sub>t</sub> Permitted					0.972						0.992	
Satd. Flow (perm)	0	1568	0	0	1715	0	0	0	0	0	1712	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		17									26	
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		351			1665			668			659	
Travel Time (s)		8.0			37.8			15.2			15.0	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Parking (#/hr)		0										
Adj. Flow (vph)	0	261	27	27	429	0	0	0	0	27	109	27
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	288	0	0	456	0	0	0	0	0	163	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		9			9			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.07	1.22	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07
Turning Speed (mph)	15		9	15		9	15		9	15		9
Turn Type		NA			Perm	NA					Perm	NA
Protected Phases		4			8						6	
Permitted Phases				8							6	
Minimum Split (s)		16.0			16.0	16.0					17.0	17.0
Total Split (s)		23.0			23.0	23.0					17.0	17.0
Total Split (%)		57.5%			57.5%	57.5%					42.5%	42.5%
Maximum Green (s)		19.0			19.0	19.0					13.0	13.0
Yellow Time (s)		3.0			3.0	3.0					3.0	3.0
All-Red Time (s)		1.0			1.0	1.0					1.0	1.0
Lost Time Adjust (s)		1.0			1.0						1.0	
Total Lost Time (s)		5.0			5.0						5.0	
Lead/Lag												
Lead-Lag Optimize?												
Walk Time (s)		5.0			5.0	5.0					5.0	5.0
Flash Dont Walk (s)		7.0			7.0	7.0					8.0	8.0
Pedestrian Calls (#/hr)		0			0	0					0	0
Act Effct Green (s)		18.0			18.0						12.0	
Actuated g/C Ratio		0.45			0.45						0.30	
v/c Ratio		0.40			0.59						0.31	
Control Delay		9.1			12.2						11.2	
Queue Delay		0.0			0.0						0.0	

Lanes, Volumes, Timings  
 14: Kenwood Avenue & 79th Street

02/23/2018

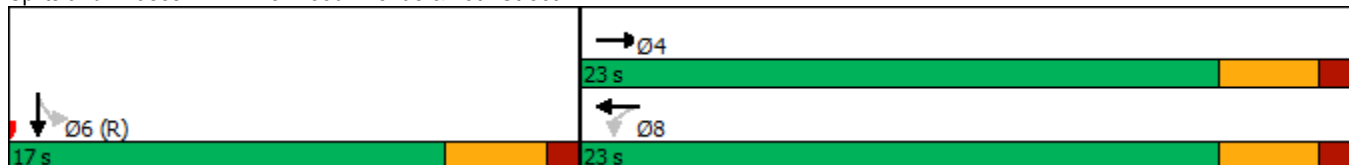


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Total Delay		9.1			12.2							11.2
LOS		A			B							B
Approach Delay		9.1			12.2							11.2
Approach LOS		A			B							B
Stops (vph)		155			296							95
Fuel Used(gal)		2			8							2
CO Emissions (g/hr)		145			568							114
NOx Emissions (g/hr)		28			111							22
VOC Emissions (g/hr)		34			132							27
Dilemma Vehicles (#)		0			0							0
Queue Length 50th (ft)		36			69							23
Queue Length 95th (ft)		77			135							56
Internal Link Dist (ft)		271			1585			588				579
Turn Bay Length (ft)												
Base Capacity (vph)		714			771							531
Starvation Cap Reductn		0			0							0
Spillback Cap Reductn		0			0							0
Storage Cap Reductn		0			0							0
Reduced v/c Ratio		0.40			0.59							0.31

Intersection Summary

Area Type: Other  
 Cycle Length: 40  
 Actuated Cycle Length: 40  
 Offset: 0 (0%), Referenced to phase 6:SBTL, Start of Green  
 Natural Cycle: 40  
 Control Type: Pretimed  
 Maximum v/c Ratio: 0.59  
 Intersection Signal Delay: 11.0  
 Intersection LOS: B  
 Intersection Capacity Utilization 61.7%  
 ICU Level of Service B  
 Analysis Period (min) 15

Splits and Phases: 14: Kenwood Avenue & 79th Street



Lanes, Volumes, Timings

15: Stony Island Avenue & South Chicago Avenue & 79th Street

02/23/2018

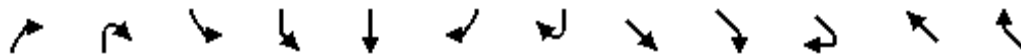


Lane Group	EBL2	EBL	EBT	EBR	EBR2	WBL	WBT	WBR	WBR2	NBL2	NBL	NBT
Lane Configurations												
Traffic Volume (vph)	3	34	178	33	17	90	200	63	38	15	97	979
Future Volume (vph)	3	34	178	33	17	90	200	63	38	15	97	979
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Width (ft)	9	9	10	11	11	9	10	11	11	12	12	12
Storage Length (ft)		100		100		175		150			90	
Storage Lanes		1		1		1		1			1	
Taper Length (ft)		25				25					25	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.91	1.00	0.91
Fr <sub>t</sub>				0.850				0.850				
Fl <sub>t</sub> Protected		0.950				0.950					0.950	
Satd. Flow (prot)	0	1509	1647	1450	0	1509	1392	1450	0	0	1676	4818
Fl <sub>t</sub> Permitted		0.222				0.330					0.950	
Satd. Flow (perm)	0	353	1647	1450	0	524	1392	1450	0	0	1676	4818
Right Turn on Red					No				No			
Satd. Flow (RTOR)												
Link Speed (mph)			30				30					30
Link Distance (ft)			1665				377					254
Travel Time (s)			37.8				8.6					5.8
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Parking (#/hr)							11					
Adj. Flow (vph)	3	36	187	35	18	95	211	66	40	16	102	1031
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	39	187	53	0	95	211	106	0	0	118	1031
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Right	Left	Left	Right	Right	Left	Left	Left
Median Width(ft)			9				9					12
Link Offset(ft)			0				0					0
Crosswalk Width(ft)			16				16					16
Two way Left Turn Lane												
Headway Factor	1.22	1.22	1.17	1.12	1.12	1.22	1.44	1.12	1.12	1.07	1.07	1.07
Turning Speed (mph)	15	15		9	9	15		9	9	15	15	
Turn Type	Perm	Perm	NA	Perm		pm+pt	NA	Prot		Prot	Prot	NA
Protected Phases			4			3	8	8		5	5	2
Permitted Phases	4	4		4		8						
Minimum Split (s)	21.0	21.0	21.0	21.0		8.0	21.0	21.0		8.0	8.0	34.0
Total Split (s)	24.0	24.0	24.0	24.0		9.0	33.0	33.0		15.0	15.0	55.0
Total Split (%)	14.1%	14.1%	14.1%	14.1%		5.3%	19.4%	19.4%		8.8%	8.8%	32.4%
Maximum Green (s)	19.0	19.0	19.0	19.0		5.0	28.0	28.0		12.0	12.0	48.0
Yellow Time (s)	3.0	3.0	3.0	3.0		3.5	3.0	3.0		3.0	3.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0		0.5	2.0	2.0		0.0	0.0	3.0
Lost Time Adjust (s)		1.0	1.0	1.0		1.0	1.0	1.0			1.0	1.0
Total Lost Time (s)		6.0	6.0	6.0		5.0	6.0	6.0			4.0	8.0
Lead/Lag										Lead	Lead	Lag
Lead-Lag Optimize?												
Walk Time (s)	5.0	5.0	5.0	5.0			5.0	5.0				5.0
Flash Dont Walk (s)	11.0	11.0	11.0	11.0			11.0	11.0				22.0
Pedestrian Calls (#/hr)	0	0	0	0			0	0				0
Act Effct Green (s)		18.0	18.0	18.0		28.0	27.0	27.0			11.0	47.0

Lanes, Volumes, Timings

15: Stony Island Avenue & South Chicago Avenue & 79th Street

02/23/2018



Lane Group	NBR	NBR2	SBL2	SBL	SBT	SBR	SBR2	SET	SER	SER2	NWT	NWR
Lane Configurations												
Traffic Volume (vph)	99	4	32	188	2029	199	16	464	216	6	268	45
Future Volume (vph)	99	4	32	188	2029	199	16	464	216	6	268	45
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Width (ft)	12	12	12	12	12	12	12	12	12	12	12	12
Storage Length (ft)	130			0		0			0			0
Storage Lanes	2			1		1			0			0
Taper Length (ft)				0								
Lane Util. Factor	1.00	0.91	0.91	1.00	0.91	1.00	0.91	0.95	0.95	0.95	0.95	0.95
Fr <sub>t</sub>	0.850					0.850		0.952			0.978	
Fl <sub>t</sub> Protected				0.950								
Satd. Flow (prot)	1500	0	0	1676	4818	1500	0	3192	0	0	3279	0
Fl <sub>t</sub> Permitted				0.950								
Satd. Flow (perm)	1500	0	0	1676	4818	1500	0	3192	0	0	3279	0
Right Turn on Red		No					No			No		
Satd. Flow (RTOR)												
Link Speed (mph)					30			30			30	
Link Distance (ft)					690			712			889	
Travel Time (s)					15.7			16.2			20.2	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Parking (#/hr)												
Adj. Flow (vph)	104	4	34	198	2136	209	17	488	227	6	282	47
Shared Lane Traffic (%)												
Lane Group Flow (vph)	108	0	0	232	2136	226	0	721	0	0	331	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Right	Right	Left	Left	Left	Right	Right	Left	Right	Right	Left	Right
Median Width(ft)					12			0			0	
Link Offset(ft)					0			0			0	
Crosswalk Width(ft)					16			16			16	
Two way Left Turn Lane												
Headway Factor	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07
Turning Speed (mph)	9	9	15	15		9	9		9	9		9
Turn Type	Perm		Prot	Prot	NA	Perm		NA			NA	
Protected Phases			1	1	6			10			14	
Permitted Phases	2					6						
Minimum Split (s)	34.0		8.0	8.0	45.0	45.0		31.0			31.0	
Total Split (s)	55.0		39.0	39.0	79.0	79.0		43.0			43.0	
Total Split (%)	32.4%		22.9%	22.9%	46.5%	46.5%		25.3%			25.3%	
Maximum Green (s)	48.0		36.0	36.0	72.0	72.0		37.0			37.0	
Yellow Time (s)	4.0		3.0	3.0	4.0	4.0		4.0			4.0	
All-Red Time (s)	3.0		0.0	0.0	3.0	3.0		2.0			2.0	
Lost Time Adjust (s)	1.0			1.0	1.0	1.0		1.0			1.0	
Total Lost Time (s)	8.0			4.0	8.0	8.0		7.0			7.0	
Lead/Lag	Lag		Lead	Lead	Lag	Lag						
Lead-Lag Optimize?												
Walk Time (s)	5.0				5.0	5.0		4.0			4.0	
Flash Dont Walk (s)	22.0				33.0	33.0		21.0			21.0	
Pedestrian Calls (#/hr)	0				0	0		0			0	
Act Effct Green (s)	47.0			35.0	71.0	71.0		36.0			36.0	

Lanes, Volumes, Timings  
 15: Stony Island Avenue & South Chicago Avenue & 79th Street

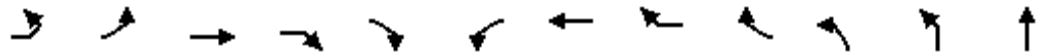
02/23/2018



Lane Group	NWR2
Lane Configurations	
Traffic Volume (vph)	2
Future Volume (vph)	2
Ideal Flow (vphpl)	1800
Lane Width (ft)	12
Storage Length (ft)	
Storage Lanes	
Taper Length (ft)	
Lane Util. Factor	0.95
Fr <sub>t</sub>	
Fl <sub>t</sub> Protected	
Satd. Flow (prot)	0
Fl <sub>t</sub> Permitted	
Satd. Flow (perm)	0
Right Turn on Red	No
Satd. Flow (RTOR)	
Link Speed (mph)	
Link Distance (ft)	
Travel Time (s)	
Peak Hour Factor	0.95
Parking (#/hr)	
Adj. Flow (vph)	2
Shared Lane Traffic (%)	
Lane Group Flow (vph)	0
Enter Blocked Intersection	No
Lane Alignment	Right
Median Width(ft)	
Link Offset(ft)	
Crosswalk Width(ft)	
Two way Left Turn Lane	
Headway Factor	1.07
Turning Speed (mph)	9
Turn Type	
Protected Phases	
Permitted Phases	
Minimum Split (s)	
Total Split (s)	
Total Split (%)	
Maximum Green (s)	
Yellow Time (s)	
All-Red Time (s)	
Lost Time Adjust (s)	
Total Lost Time (s)	
Lead/Lag	
Lead-Lag Optimize?	
Walk Time (s)	
Flash Dont Walk (s)	
Pedestrian Calls (#/hr)	
Act Effct Green (s)	

Lanes, Volumes, Timings  
 15: Stony Island Avenue & South Chicago Avenue & 79th Street

02/23/2018

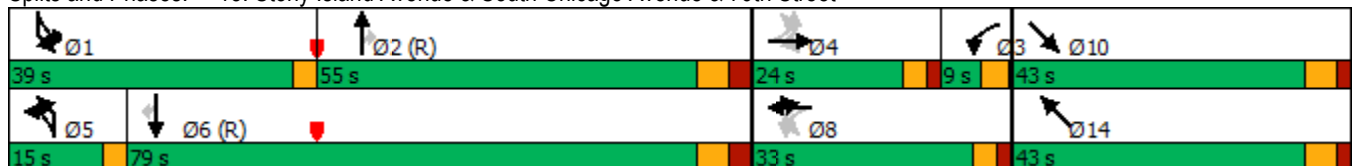


Lane Group	EBL2	EBL	EBT	EBR	EBR2	WBL	WBT	WBR	WBR2	NBL2	NBL	NBT
Actuated g/C Ratio		0.11	0.11	0.11		0.16	0.16	0.16			0.06	0.28
v/c Ratio		1.05	1.07	0.35		0.87	0.95	0.46			1.09	0.77
Control Delay		231.6	157.2	77.5		111.3	105.7	65.0			182.5	61.3
Queue Delay		0.0	0.0	0.0		0.0	0.0	0.0			0.0	0.0
Total Delay		231.6	157.2	77.5		111.3	105.7	65.0			182.5	61.3
LOS		F	F	E		F	F	E			F	E
Approach Delay			152.5				96.5					71.7
Approach LOS			F				F					E
Stops (vph)		27	148	46		71	175	91			90	885
Fuel Used(gal)		2	9	2		3	7	3			5	23
CO Emissions (g/hr)		166	617	118		235	513	201			371	1591
NOx Emissions (g/hr)		32	120	23		46	100	39			72	309
VOC Emissions (g/hr)		38	143	27		54	119	47			86	369
Dilemma Vehicles (#)		0	0	0		0	0	0			0	0
Queue Length 50th (ft)		~47	~230	56		96	238	109			~147	390
Queue Length 95th (ft)		#134	#403	105		m#177	#415	m160			#290	447
Internal Link Dist (ft)			1585				297					174
Turn Bay Length (ft)		100		100		175		150			90	
Base Capacity (vph)		37	174	153		109	221	230			108	1332
Starvation Cap Reductn		0	0	0		0	0	0			0	0
Spillback Cap Reductn		0	0	0		0	0	0			0	0
Storage Cap Reductn		0	0	0		0	0	0			0	0
Reduced v/c Ratio		1.05	1.07	0.35		0.87	0.95	0.46			1.09	0.77

Intersection Summary

Area Type: Other  
 Cycle Length: 170  
 Actuated Cycle Length: 170  
 Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBT, Start of Green  
 Natural Cycle: 145  
 Control Type: Pretimed  
 Maximum v/c Ratio: 1.09  
 Intersection Signal Delay: 86.6 Intersection LOS: F  
 Intersection Capacity Utilization 121.5% ICU Level of Service H  
 Analysis Period (min) 15  
 ~ Volume exceeds capacity, queue is theoretically infinite.  
 Queue shown is maximum after two cycles.  
 # 95th percentile volume exceeds capacity, queue may be longer.  
 Queue shown is maximum after two cycles.  
 m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 15: Stony Island Avenue & South Chicago Avenue & 79th Street



Lanes, Volumes, Timings

15: Stony Island Avenue & South Chicago Avenue & 79th Street

02/23/2018



Lane Group	NBR	NBR2	SBL2	SBL	SBT	SBR	SBR2	SET	SER	SER2	NWT	NWR
Actuated g/C Ratio	0.28			0.21	0.42	0.42		0.21			0.21	
v/c Ratio	0.26			0.67	1.06	0.36		1.07			0.48	
Control Delay	50.1			73.0	85.7	36.1		115.8			61.4	
Queue Delay	0.0			0.0	0.0	0.0		0.0			0.0	
Total Delay	50.1			73.0	85.7	36.1		115.8			61.4	
LOS	D			E	F	D		F			E	
Approach Delay					80.2			115.8			61.4	
Approach LOS					F			F			E	
Stops (vph)	79			202	1831	146		606			270	
Fuel Used(gal)	2			6	56	4		23			8	
CO Emissions (g/hr)	145			389	3944	248		1629			531	
NOx Emissions (g/hr)	28			76	767	48		317			103	
VOC Emissions (g/hr)	34			90	914	57		377			123	
Dilemma Vehicles (#)	0			0	0	0		0			0	
Queue Length 50th (ft)	95			241	~954	172		~464			172	
Queue Length 95th (ft)	154			343	#1039	248		#599			226	
Internal Link Dist (ft)					610			632			809	
Turn Bay Length (ft)	130											
Base Capacity (vph)	414			345	2012	626		675			694	
Starvation Cap Reductn	0			0	0	0		0			0	
Spillback Cap Reductn	0			0	0	0		0			0	
Storage Cap Reductn	0			0	0	0		0			0	
Reduced v/c Ratio	0.26			0.67	1.06	0.36		1.07			0.48	
Intersection Summary												





Lane Group	NWR2
Actuated g/C Ratio	
v/c Ratio	
Control Delay	
Queue Delay	
Total Delay	
LOS	
Approach Delay	
Approach LOS	
Stops (vph)	
Fuel Used(gal)	
CO Emissions (g/hr)	
NOx Emissions (g/hr)	
VOC Emissions (g/hr)	
Dilemma Vehicles (#)	
Queue Length 50th (ft)	
Queue Length 95th (ft)	
Internal Link Dist (ft)	
Turn Bay Length (ft)	
Base Capacity (vph)	
Starvation Cap Reductn	
Spillback Cap Reductn	
Storage Cap Reductn	
Reduced v/c Ratio	
Intersection Summary	

Lanes, Volumes, Timings  
16: 79th Street & Cregier Avenue

02/23/2018



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕				
Traffic Volume (vph)	25	286	0	0	366	366	25	100	25	0	0	0
Future Volume (vph)	25	286	0	0	366	366	25	100	25	0	0	0
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Fr <sub>t</sub>					0.932			0.978				
Fl <sub>t</sub> Protected		0.996						0.992				
Satd. Flow (prot)	0	1576	0	0	1645	0	0	1712	0	0	0	0
Fl <sub>t</sub> Permitted		0.921						0.992				
Satd. Flow (perm)	0	1457	0	0	1645	0	0	1712	0	0	0	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)					129			11				
Link Speed (mph)		30			30			30				30
Link Distance (ft)		946			328			152				657
Travel Time (s)		21.5			7.5			3.5				14.9
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Bus Blockages (#/hr)	0	1	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)		0										
Adj. Flow (vph)	27	311	0	0	398	398	27	109	27	0	0	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	338	0	0	796	0	0	163	0	0	0	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			0				0
Link Offset(ft)		0			0			0				0
Crosswalk Width(ft)		16			16			16				16
Two way Left Turn Lane												
Headway Factor	1.07	1.23	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07
Turning Speed (mph)	15		9	15		9	15		9	15		9
Turn Type	Perm	NA			NA		Perm	NA				
Protected Phases		4			8			2				
Permitted Phases	4						2					
Minimum Split (s)	19.0	19.0			19.0		23.0	23.0				
Total Split (s)	62.0	62.0			62.0		23.0	23.0				
Total Split (%)	72.9%	72.9%			72.9%		27.1%	27.1%				
Maximum Green (s)	58.0	58.0			58.0		19.0	19.0				
Yellow Time (s)	3.0	3.0			3.0		3.0	3.0				
All-Red Time (s)	1.0	1.0			1.0		1.0	1.0				
Lost Time Adjust (s)		1.0			1.0			1.0				
Total Lost Time (s)		5.0			5.0			5.0				
Lead/Lag												
Lead-Lag Optimize?												
Walk Time (s)	5.0	5.0			5.0		5.0	5.0				
Flash Dont Walk (s)	10.0	10.0			10.0		14.0	14.0				
Pedestrian Calls (#/hr)	0	0			0		0	0				
Act Effct Green (s)		57.0			57.0			18.0				
Actuated g/C Ratio		0.67			0.67			0.21				
v/c Ratio		0.35			0.70			0.44				
Control Delay		4.5			11.0			31.4				

Lanes, Volumes, Timings  
 16: 79th Street & Cregier Avenue

02/23/2018



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Queue Delay		0.0			0.0			0.0				
Total Delay		4.5			11.0			31.4				
LOS		A			B			C				
Approach Delay		4.5			11.0			31.4				
Approach LOS		A			B			C				
Stops (vph)		156			372			119				
Fuel Used(gal)		4			6			2				
CO Emissions (g/hr)		305			389			126				
NOx Emissions (g/hr)		59			76			24				
VOC Emissions (g/hr)		71			90			29				
Dilemma Vehicles (#)		0			0			0				
Queue Length 50th (ft)		17			187			71				
Queue Length 95th (ft)		m260			316			130				
Internal Link Dist (ft)		866			248			72			577	
Turn Bay Length (ft)												
Base Capacity (vph)		977			1145			371				
Starvation Cap Reductn		0			0			0				
Spillback Cap Reductn		0			0			0				
Storage Cap Reductn		0			0			0				
Reduced v/c Ratio		0.35			0.70			0.44				

Intersection Summary

Area Type: Other

Cycle Length: 85

Actuated Cycle Length: 85

Offset: 0 (0%), Referenced to phase 4:EBTL and 8:WBT, Start of Green

Natural Cycle: 60

Control Type: Pretimed

Maximum v/c Ratio: 0.70

Intersection Signal Delay: 11.9

Intersection LOS: B

Intersection Capacity Utilization 68.1%

ICU Level of Service C

Analysis Period (min) 15

m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 16: 79th Street & Cregier Avenue



Lanes, Volumes, Timings  
58: Paulina Street & 79th Street

02/23/2018
















Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑			↑		↑		↑	↑		↑
Traffic Volume (vph)	0	540	0	0	675	0	8	0	28	29	0	5
Future Volume (vph)	0	540	0	0	675	0	8	0	28	29	0	5
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Width (ft)	12	11	12	12	11	10	12	12	12	12	12	12
Storage Length (ft)	0		0	0		0	0		10	0		10
Storage Lanes	0		0	0		0	1		1	1		1
Taper Length (ft)	0			0			0			0		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Fr <sub>t</sub>									0.850			0.850
Fl <sub>t</sub> Protected							0.950			0.950		
Satd. Flow (prot)	0	1369	0	0	1335	0	1710	0	1471	1598	0	1530
Fl <sub>t</sub> Permitted							0.950			0.950		
Satd. Flow (perm)	0	1369	0	0	1335	0	1710	0	1471	1598	0	1530
Link Speed (mph)		30			30			30				30
Link Distance (ft)		664			664			657				669
Travel Time (s)		15.1			15.1			14.9				15.2
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.67	0.92	0.70	0.66	0.92	0.42
Heavy Vehicles (%)	2%	11%	2%	2%	10%	2%	0%	2%	4%	7%	2%	0%
Bus Blockages (#/hr)	0	6	6	0	6	6	0	0	0	0	0	0
Parking (#/hr)		1			7							
Adj. Flow (vph)	0	587	0	0	734	0	12	0	40	44	0	12
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	587	0	0	734	0	12	0	40	44	0	12
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		9			9			12				12
Link Offset(ft)		0			0			0				0
Crosswalk Width(ft)		16			16			16				16
Two way Left Turn Lane												
Headway Factor	1.07	1.33	1.07	1.07	1.38	1.17	1.07	1.07	1.07	1.07	1.07	1.07
Turning Speed (mph)	15		9	15		9	15		9	15		9
Sign Control		Free			Free			Stop				Stop

Intersection Summary

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	56.7%
ICU Level of Service	B
Analysis Period (min)	15

Lanes, Volumes, Timings  
69: Union Avenue & 79th Street

02/23/2018

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	25	0	686	8	2	8	578	16	0	0	0	0
Future Volume (vph)	25	0	686	8	2	8	578	16	0	0	0	0
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Width (ft)	12	10	12	12	10	12	12	16	12	12	16	16
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.873			0.920							
Flt Protected		0.997			0.984			0.953				
Satd. Flow (prot)	0	1286	0	0	1350	0	0	1944	0	0	0	0
Flt Permitted		0.997			0.984			0.953				
Satd. Flow (perm)	0	1286	0	0	1350	0	0	1944	0	0	0	0
Link Speed (mph)		30			30			30				30
Link Distance (ft)		665			358			654				664
Travel Time (s)		15.1			8.1			14.9				15.1
Peak Hour Factor	0.52	0.95	0.92	0.92	0.96	0.50	0.50	0.67	0.67	0.92	0.92	0.92
Heavy Vehicles (%)	8%	11%	2%	2%	10%	0%	0%	0%	0%	2%	2%	2%
Parking (#/hr)		0			0							
Adj. Flow (vph)	48	0	746	9	2	16	1156	24	0	0	0	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	794	0	0	27	0	0	1180	0	0	0	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		9			9			0				0
Link Offset(ft)		0			0			0				0
Crosswalk Width(ft)		16			16			16				16
Two way Left Turn Lane												
Headway Factor	1.07	1.33	1.07	1.07	1.33	1.07	1.07	0.91	1.07	1.07	0.91	0.91
Turning Speed (mph)	15		9	15		9	15		9	15		9
Sign Control		Free			Free			Stop				Stop

Intersection Summary

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	89.5%
ICU Level of Service	E
Analysis Period (min)	15