Attachment C – Transportation

Red Line Extension Traffic Methodology:

Existing Traffic Volumes

Historic traffic volumes for the 130th Street and Ellis Avenue intersection and the 130th Street at I-94 ramps were compared to their 2020 traffic volumes to determine if traffic volumes were affected by the COVID-19 pandemic. The comparison of data determined that additional factors outside population growth impacted traffic volumes, and that the COVID-19 pandemic had affected transportation patterns. The 2020 traffic data was collected on September 1 and 2, 2020 using video traffic and turning movement counts during the AM and PM period for the 130th Street and Ellis Avenue intersection and the I-94 ramps. For comparison of the 2020 volume data, the intersection of 130th Street and Ellis Avenue used 2012 historic traffic data from the Draft EIS, whereas the I-94 ramps used a combination of 2018 and 2019 historic traffic data, based on availability from IDOT. For these two locations, the pandemic's effect on traffic has led to a much greater reduction in traffic in the AM and a modest increase in traffic in the PM, compared to historic traffic. As a result of CTA's coordination with IDOT, it was agreed upon to use historic volumes for the 130th Street and Ellis Avenue intersection as existing traffic volumes. For the I-94 ramps, the higher of the two volumes between the 2020 counts and the historic data for each ramp was chosen as the existing traffic volume for the Project.

The Altgeld Gardens neighborhood intersections did not have historic data available for comparison. Instead, a separate AM and PM growth factor based on historic traffic volumes from the 130th Street and Ellis Avenue intersection was applied to account for the variation of transportation patterns resulting from the pandemic. The traffic volumes that were established using historic volumes with growth factors were used as the existing traffic volumes at the Altgeld Gardens neighborhood intersections.

2050 No-Build Traffic Volumes

CTA used data from CMAP's 2050 Regional Travel Demand model to develop "no-project" intersection-level traffic projections. These "no-project" traffic projections accounted for the background growth in traffic due to additional regional and subregional land use development and population growth. The traffic projections include any mode shifts from vehicles to transit as a result of the future implementation of a modern, multimodal system that adapts to changing travel demand as part of the *ON TO 2050*. CTA determined the background growth of traffic for roadway segments using the data from the regional travel demand model. Average annual traffic growth for roadway segments ranged from 0 to 0.4 percent. These growths were used to calculate the 2050 No-Build traffic volumes.

2050 Build Traffic Volumes

The Build Alternative-generated trips were added to the No Build traffic volumes to develop the 2050 Build traffic volumes. The trip generation is based on the Simplified Trips-on-Project

Software (STOPS) analysis and data from similar sized existing CTA parking facilities. STOPS is a trip modeling software used to estimate future ridership for transit projects. The software provides station mode-of-access numbers, including estimates of those driving to the new stations. These estimates feed into the traffic analysis. STOPS is used nationally and is recommended for use in trip modeling by FTA. The STOPS analysis was run for both an existing year (2017), to serve as a baseline, and future year (2037) condition. The park & ride-generated trips for 2037 will be valid for 2050 because those trips are constrained by parking capacity. The 2050Build traffic volumes were calculated using the 2050 No Build traffic volumes plus the traffic generation volumes from the 2037 STOPS analysis.

Synchro and HCS Analysis

An analysis of existing traffic volumes, 2050 No-Build traffic volumes, and 2050 Build traffic volumes was performed using Synchro 10 at the intersections and Highway Capacity Software (HCS) at the I-94 ramps. The results of the Synchro and HCS analysis were used to determine which intersections were impacted by the additional traffic caused by background growth and station traffic. For this Supplemental EA, a traffic (i.e., passenger or freight vehicle) impact is defined by degradation in peak-hour Level of Service (LOS) at any intersection within the project area. CTA coordinated with IDOT and CDOT regarding LOS thresholds, and for this analysis, a change in intersection LOS from LOS A, B, C, or D under the No Build Alternative to LOS E or F under the Build Alternative would result in an adverse impact and operational or physical improvements were agreed to be identified in analyzing impacts where LOS degradation would occur between future No Build and Build Conditions. Instances where storage capacity for turning lanes was not adequate for vehicle traffic based on the IDOT red time queue formula would also warrant recommended improvements to be incorporated by CTA as mitigation measures to prevent adverse impacts to the roadway operations. CTA identified mitigation measures to reduce the impacts to a more acceptable LOS for adverse impacts caused directly by Project facilities, when those impacts would not be offset by the additional transportation benefits provided by the Project.

Attachment C includes Synchro and HCS summary sheets which includes all the volume and geometric inputs for each intersection along with the traffic analysis results including, delay, density, queue length, and LOS.

Intersection Design Study

PLOT DATE = $DATE$
FILE NAME = $FILE$
PLOT SCALE = $SCALE$
USER NAME = $USER$

SIGNALIZED CAPACITY DESIGN ANALYSIS

PROGRAM USED: SYNCHRO , VERSION: 10 SIGNAL TYPE: ACTUATED-COORD. AREA TYPE: OTHER
NUMBER OF PHASES: (A.M.) 5 (P.M.) 5 CYCLE LENGTH: (A.M.) 85 SEC. (P.M.) 85 SEC. PEAK HOUR FACTOR: 0.96
INTERSECTION DELAY/LEVEL-OF-SERVICE A.M. 17.3 SECONDS LOS B P.M. 21.9 SECONDS LOS C

APPROACH		EASTBOUND (C)				WESTBOUND (D)				NORTHBOUND (B)				SOUTHBOUND (A)			
LANE GROUP		L	T		R	L	T		R	L		RT		LTR			
NUMBER OF LANES		1	2		1	1	2		1	1		1		1			
2050 30TH MAX. HOUR TRAFFIC (veh/h)	A.M.	0	570		356	435	695		10	122		207		0			
	P.M.	0	1035		70	137	755		0	314		290		0			
BASE SATURATION FLOW RATE (veh/h)		1900	2000		1900	1900	2000		1900	1900		1900		1900			
LANE WIDTH (FT)		12	12		13	12	12		12	12		12		12			
VOLUME OF RIGHT TURN ON RED (veh/h)	A.M.	0	P.M.	0		A.M. 0	P.M.	0		A.M. 0	P.M.	0		A.M. 0	P.M.	0	
PEDESTRIANS/HOUR (ped/h)	A.M.	0	P.M.	0		A.M. 0	P.M.	0		A.M. 0	P.M.	0		A.M. 0	P.M.	0	
ARRIVAL TYPE		3				3				3				3			
LANE UTILIZATION ADJ. FACTOR		1.00	0.95		1.00	1.00	0.95		1.00	1.00		1.00		1.00			
GREEN TIME (SECONDS)	A.M.	-	43.0		43.0	7.0	53.0		53.0	-		24.0		24.0			
	P.M.	-	33.0		33.0	7.0	43.0		43.0	-		34.0		34.0			
GREEN RATIO (g+gu)/C	A.M.	-	0.51		0.51	0.58	0.62		0.67	-		0.28		-			
	P.M.	-	0.38		0.38	0.33	0.51		0.51	-		0.40		-			
CAPACITY (c)	A.M.	85	1876		914	508	2266		985	363		281		362			
	P.M.	85	1643		780	337	2026		925	516		449		560			
v/c RATIO (X)	A.M.	-	0.37		0.48	0.82	0.34		0.01	0.47		0.64		-			
	P.M.	-	0.73		0.10	0.55	0.42		-	0.71		0.60		-			
RED TIME STORAGE QUEUE (FEET)	A.M.	0	183		216	219	168		5	138		186		0			
	P.M.	0	385		51	107	222		0	268		210		0			
LANE GROUP DELAY (SECONDS)	A.M.	0.0	13.5		16.2	25.6	7.0		5.9	32.9		37.7		0.0			
	P.M.	0.0	24.6		16.6	19.0	12.2		0.0	33.1		27.8		0.0			
LANE GROUP LEVEL-OF-SERVICE	A.M.	A	B		B	C	A		A	C		D		A			
	P.M.	A	C		B	B	B		A	C		C		A			
APPROACH DELAY (SECONDS/VEHICLE)	A.M.	14.6				14.1				35.9				0.0			
	P.M.	24.1				13.2				30.5				0.0			
APPROACH LEVEL-OF-SERVICE	A.M.	B				B				D				A			
	P.M.	C				B				C				A			

PHASE		1			2			3			
N			YELLOW	RED		YELLOW	RED		YELLOW	RED	CYCLE LENGTH
GREEN	AM	24.0	3.0	1.0	7.0	3.0	0.0	43.0	3.0	1.0	85
TIME (SECS)	PM	34.0	3.0	1.0	7.0	3.0	0.0	33.0	3.0	1.0	85

ELEMENTS CONTROLLING DESIGN

PREFERRED ROUTE:

F.A.U. ROUTE NUMBER: 344. MARKED ROUTE NUMBER: N/A.
STREET NAME: 130TH STREET. SRA ROUTE: N.
FUNCTIONAL CLASSIFICATION: PRINCIPAL ARTERIAL. OSOW DESIGN: Y.
EXISTING ADT: 18,200 VPD (2018).
DESIGN YEAR ADT: 25,300 VPD (2050).
PROPOSED DESIGN SPEED: 40 MPH. PROPOSED POSTED SPEED: 35 MPH.

SECONDARY ROUTE:

F.A.U. ROUTE NUMBER: N/A. MARKED ROUTE NUMBER: N/A.
STREET NAME: COTTAGE GROVE AVENUE (N)/ELLIS AVENUE (S). SRA ROUTE: N.
FUNCTIONAL CLASSIFICATION: LOCAL ROAD. OSOW DESIGN: N.
EXISTING ADT: 2,000 VPD (2018). DESIGN YEAR ADT: 6,000 VPD (2050).
PROPOSED DESIGN SPEED: 25 MPH. PROPOSED POSTED SPEED: 20 MPH.

IMPROVEMENT TYPE: WIDEN/RECONSTRUCTION. ANTICIPATED YEAR OF CONSTRUCTION: 2025.
EXISTING METHOD OF TRAFFIC CONTROL: SIGNALIZED. PROPOSED METHOD: SIGNALIZED.
SIGNAL WARRANT: EXISTING SIGNAL.
DESIGN VEHICLE: S-BUS-40 AND WB-65.
DESIGN YEAR: 2050 WHICH IS A 20 YEAR DESIGN.
TRUCK ROUTE DESIGNATION: PREFERRED ROADWAY: NONE.
SECONDARY ROADWAY: NONE.
DESIGN CRITERIA: BDE CHAPTER 36.

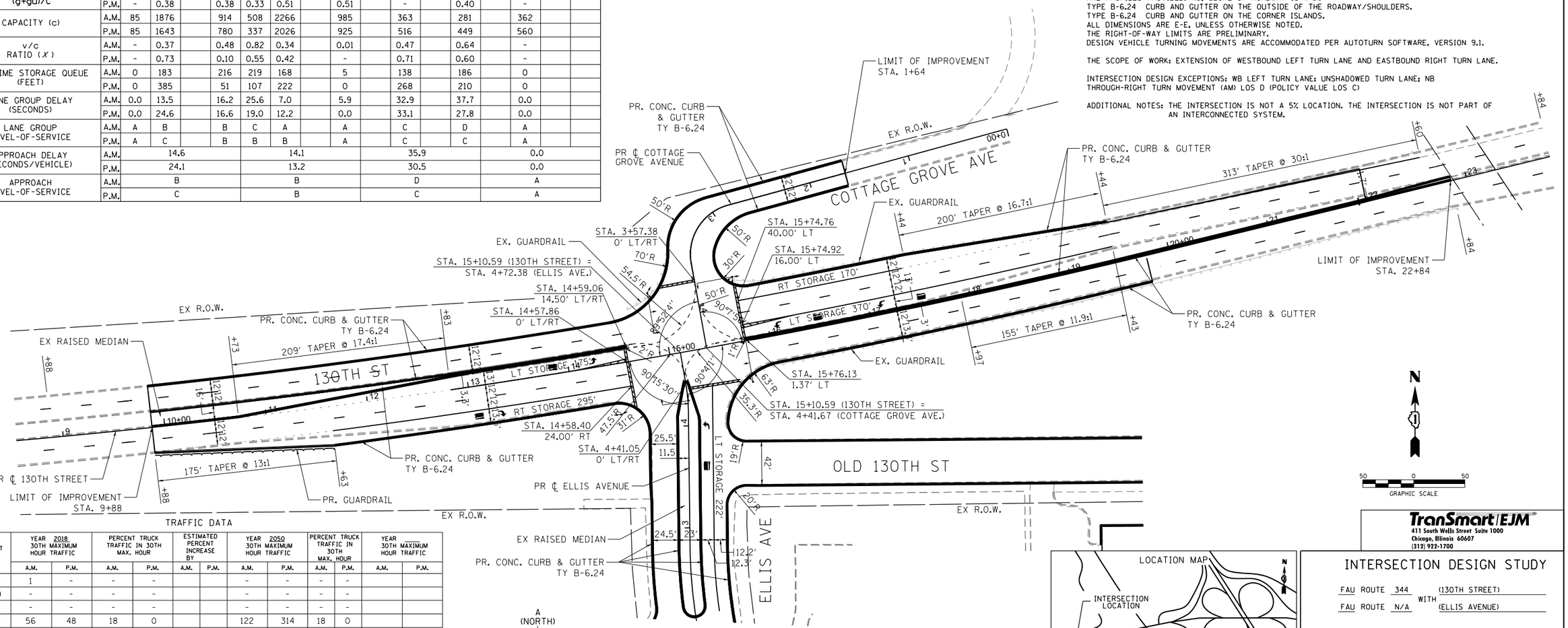
GENERAL NOTES

ARE PROFILES PROVIDED: NO. SLOPE OF ROADWAY IS < 1%
TYPE B-6.24 CURB AND GUTTER ON THE OUTSIDE OF THE ROADWAY/SHOULDERS.
TYPE B-6.24 CURB AND GUTTER ON THE CORNER ISLANDS.
ALL DIMENSIONS ARE E-E, UNLESS OTHERWISE NOTED.
THE RIGHT-OF-WAY LIMITS ARE PRELIMINARY.
DESIGN VEHICLE TURNING MOVEMENTS ARE ACCOMMODATED PER AUTOTURN SOFTWARE, VERSION 9.1.

THE SCOPE OF WORK: EXTENSION OF WESTBOUND LEFT TURN LANE AND EASTBOUND RIGHT TURN LANE.

INTERSECTION DESIGN EXCEPTIONS: WB LEFT TURN LANE: UNSHADOWED TURN LANE; NB THROUGH-RIGHT TURN MOVEMENT (AM) LOS D (POLICY VALUE LOS C)

ADDITIONAL NOTES: THE INTERSECTION IS NOT A 5% LOCATION. THE INTERSECTION IS NOT PART OF AN INTERCONNECTED SYSTEM.



N

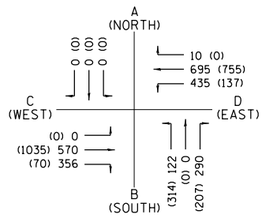
GRAPHIC SCALE 50 0 50

TranSmart/EJM
411 South Wells Street Suite 1000
Chicago, Illinois 60607
(312) 922-1700

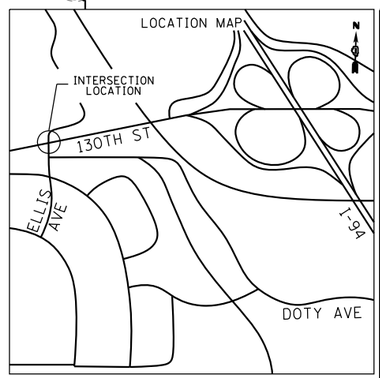
TRAFFIC DATA

2018 MOVEMENT	YEAR 2018 30TH MAXIMUM HOUR TRAFFIC		PERCENT TRUCK TRAFFIC IN 30TH MAX. HOUR		ESTIMATED PERCENT INCREASE BY		YEAR 2050 30TH MAXIMUM HOUR TRAFFIC		PERCENT TRUCK TRAFFIC IN 30TH MAX. HOUR		YEAR ____ 30TH MAXIMUM HOUR TRAFFIC	
	A.M.	P.M.	A.M.	P.M.	A.M.	P.M.	A.M.	P.M.	A.M.	P.M.	A.M.	P.M.
AD (L)	1	-	-	-			-	-	-	-		
AB (T)	-	-	-	-			-	-	-	-		
AC (R)	-	-	-	-			-	-	-	-		
BC (L)	56	48	18	0			122	314	18	0		
BA (T)	-	-	-	-			-	-	-	-		
BD (R)	144	121	6	2			207	290	6	2		
CA (L)	1	1	-	-			-	-	-	-		
CD (T)	454	823	10	3			570	1035	10	3		
CB (R)	69	32	4	0			356	70	4	0		
DB (L)	227	96	4	4			435	137	4	4		
DC (T)	552	599	9	3			695	755	9	3		
DA (R)	8	1	12	0			10	0	12	0		
TOTAL A	10	2					10	0				
TOTAL B	496	297					1120	811				
TOTAL C	1132	1503					1743	2174				
TOTAL D	1386	1640					1917	2217				

T = THROUGH, L = LEFT, R = RIGHT



(2050) DHV: A.M. (P.M.)



INTERSECTION DESIGN STUDY

FAU ROUTE 344 (130TH STREET)
FAU ROUTE N/A WITH (ELLIS AVENUE)

SEC. NO. _____ PROJ. NO. _____
SCALE 1" = 50' COUNTY COOK
SJN : _____ REV. NO. ___

DESIGNED BY GREGORY GEDEMER DATE 7/28/21

SATISFACTORY _____ DISTRICT GEOMETRICS ENGINEER _____ DATE
SATISFACTORY _____ DISTRICT PROGRAM DEVELOPMENT ENGINEER _____ DATE
SATISFACTORY _____ DISTRICT OPERATIONS ENGINEER _____ DATE
APPROVED _____ DEPUTY DIRECTOR OF HIGHWAYS, REGION ENGINEER _____ DATE

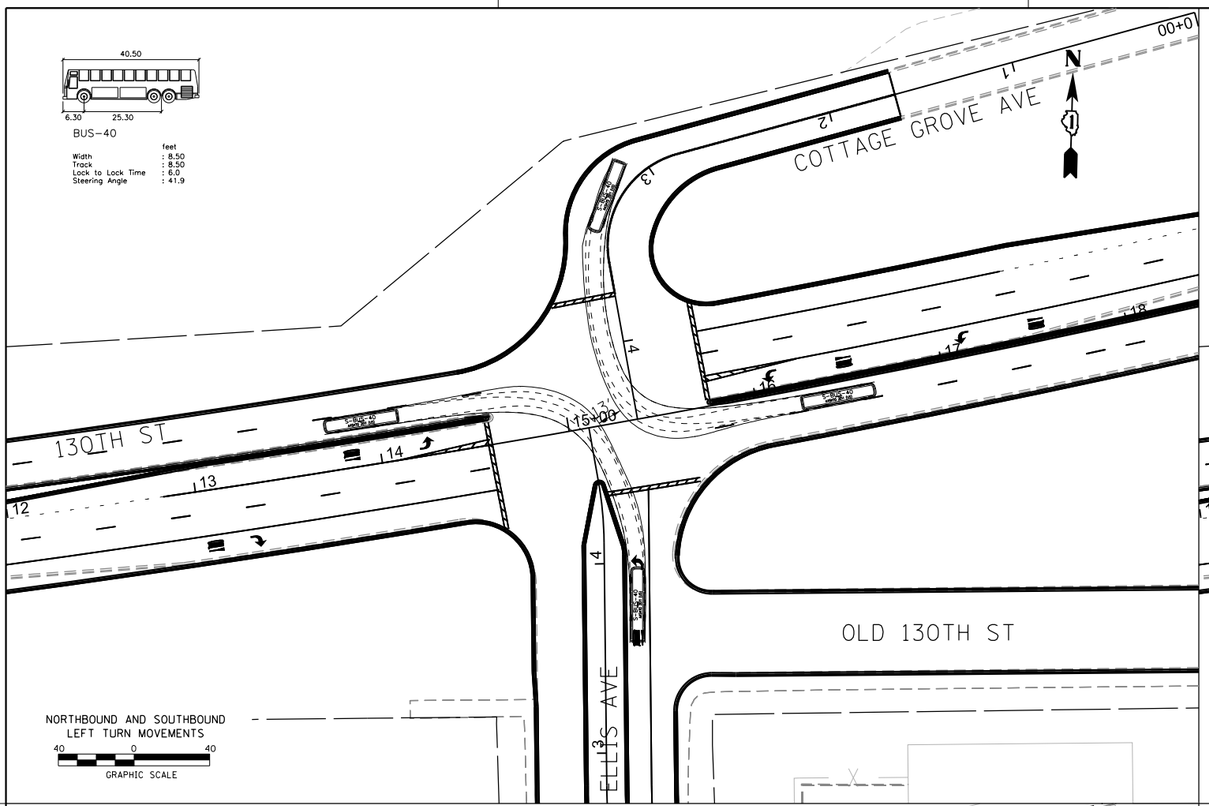
CADD FILE NAME : [ ] I.D.S. SHEET 1 OF 3

BDE-9908

PLOT DATE = $DATE$
FILE NAME = $FILEL$
PLOT SCALE = $SCALE$
USER NAME = $USER$

BUS-40

	feet
Width	: 8.50
Track	: 8.50
Lock to Lock Time	: 6.0
Steering Angle	: 41.9

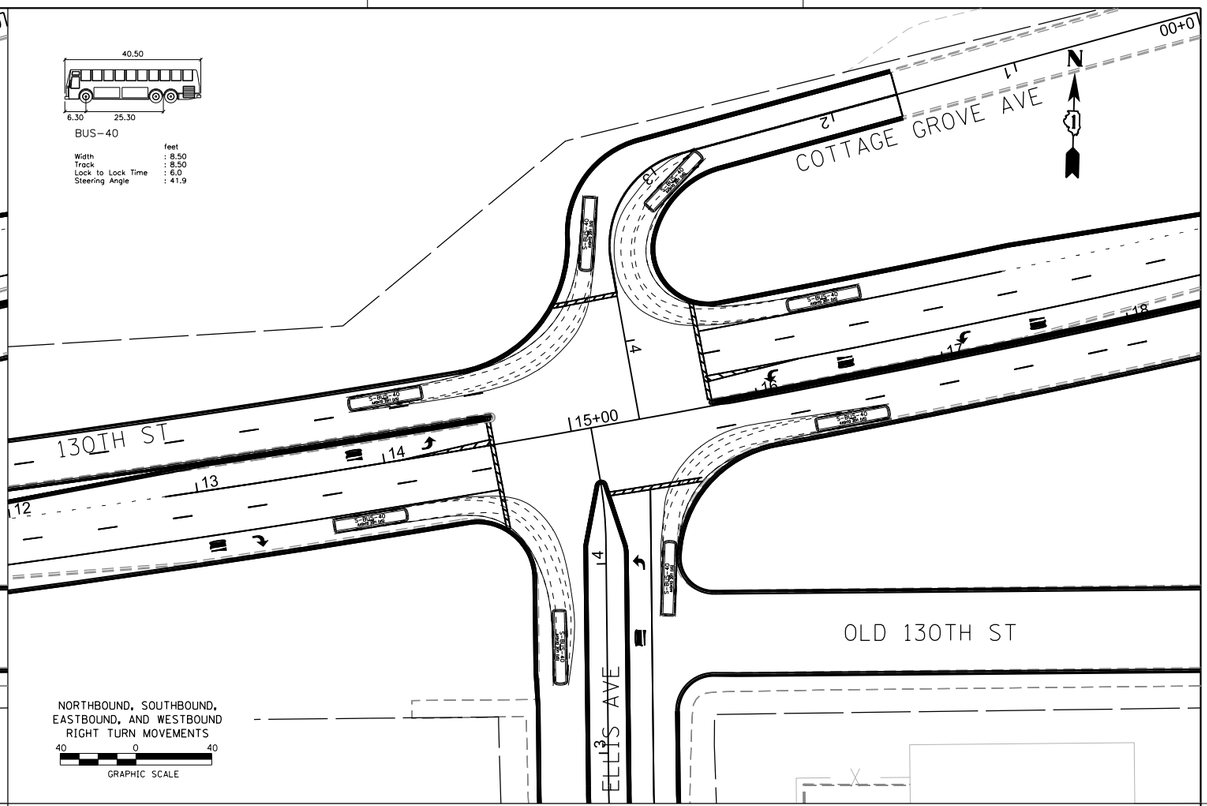


NORTHBOUND AND SOUTHBOUND
LEFT TURN MOVEMENTS

40 0 40
GRAPHIC SCALE

BUS-40

	feet
Width	: 8.50
Track	: 8.50
Lock to Lock Time	: 6.0
Steering Angle	: 41.9

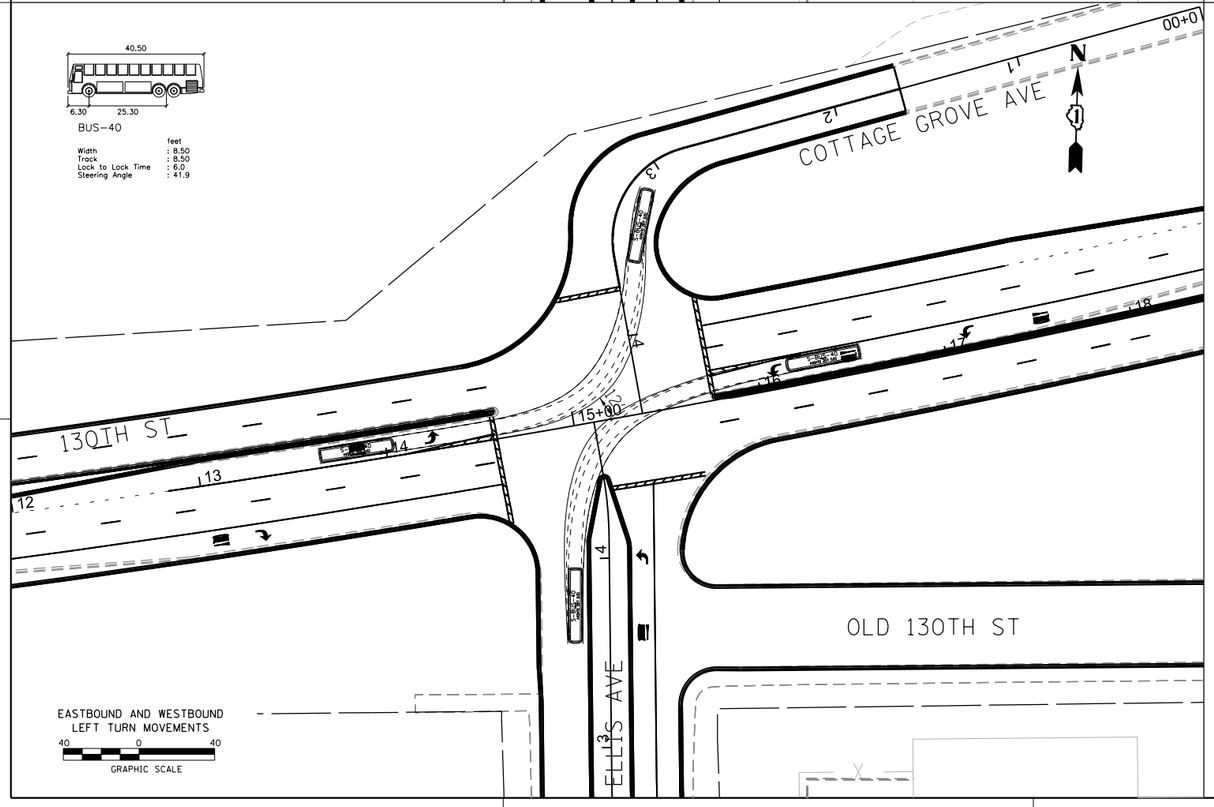


NORTHBOUND, SOUTHBOUND,
EASTBOUND, AND WESTBOUND
RIGHT TURN MOVEMENTS

40 0 40
GRAPHIC SCALE

BUS-40

	feet
Width	: 8.50
Track	: 8.50
Lock to Lock Time	: 6.0
Steering Angle	: 41.9



EASTBOUND AND WESTBOUND
LEFT TURN MOVEMENTS

40 0 40
GRAPHIC SCALE

INTERSECTION DESIGN STUDY

FAU ROUTE 344 (13OTH STREET)
FAU ROUTE N/A WITH (ELLIS AVENUE)

SEC. NO. _____

SCALE 1" = 40' COUNTY: COOK

SJN : _____ PROJ. NO. _____

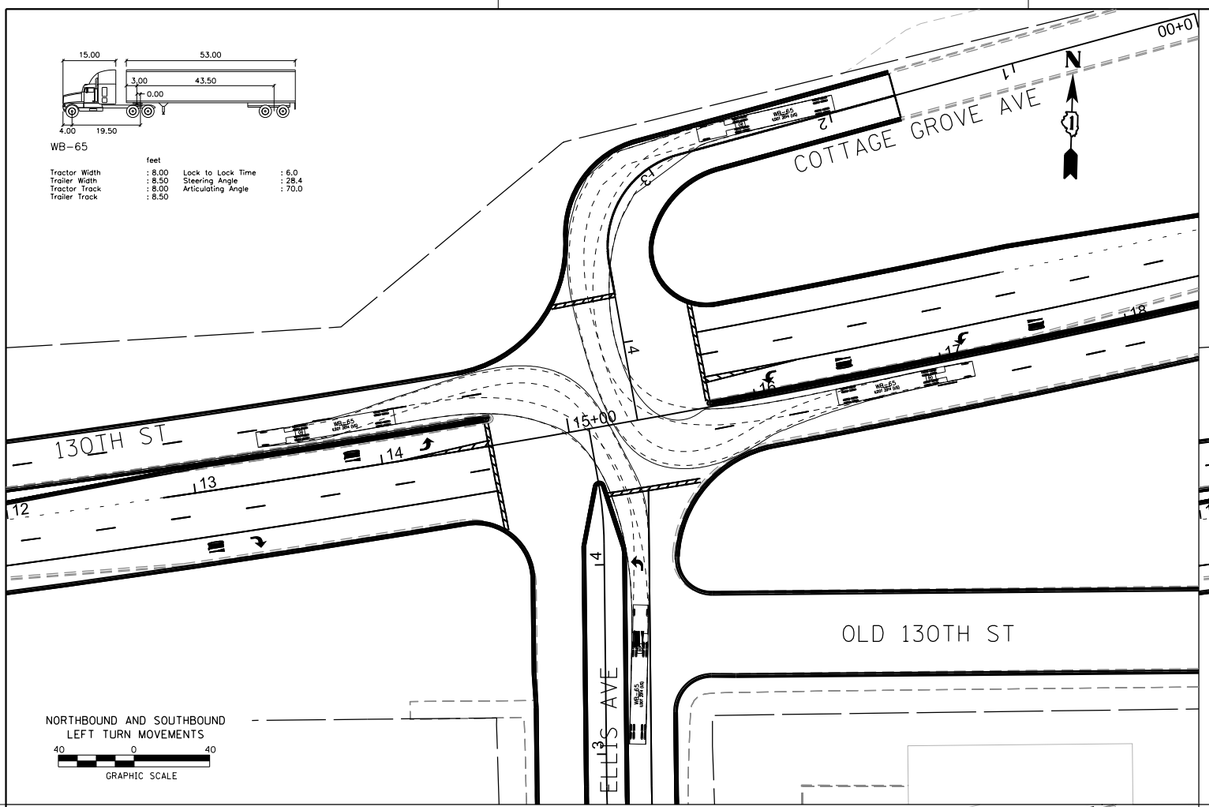
I.D.S. SHEET 2 OF 3

BDE-9908

PLOT DATE = $DATE$
FILE NAME = $FILE$
PLOT SCALE = $SCALE$
USER NAME = $USER$

WB-65

feet			
Tractor Width	: 8.00	Lock to Lock Time	: 6.0
Trailer Width	: 8.50	Steering Angle	: 28.4
Tractor Track	: 8.00	Articulating Angle	: 70.0
Trailer Track	: 8.50		

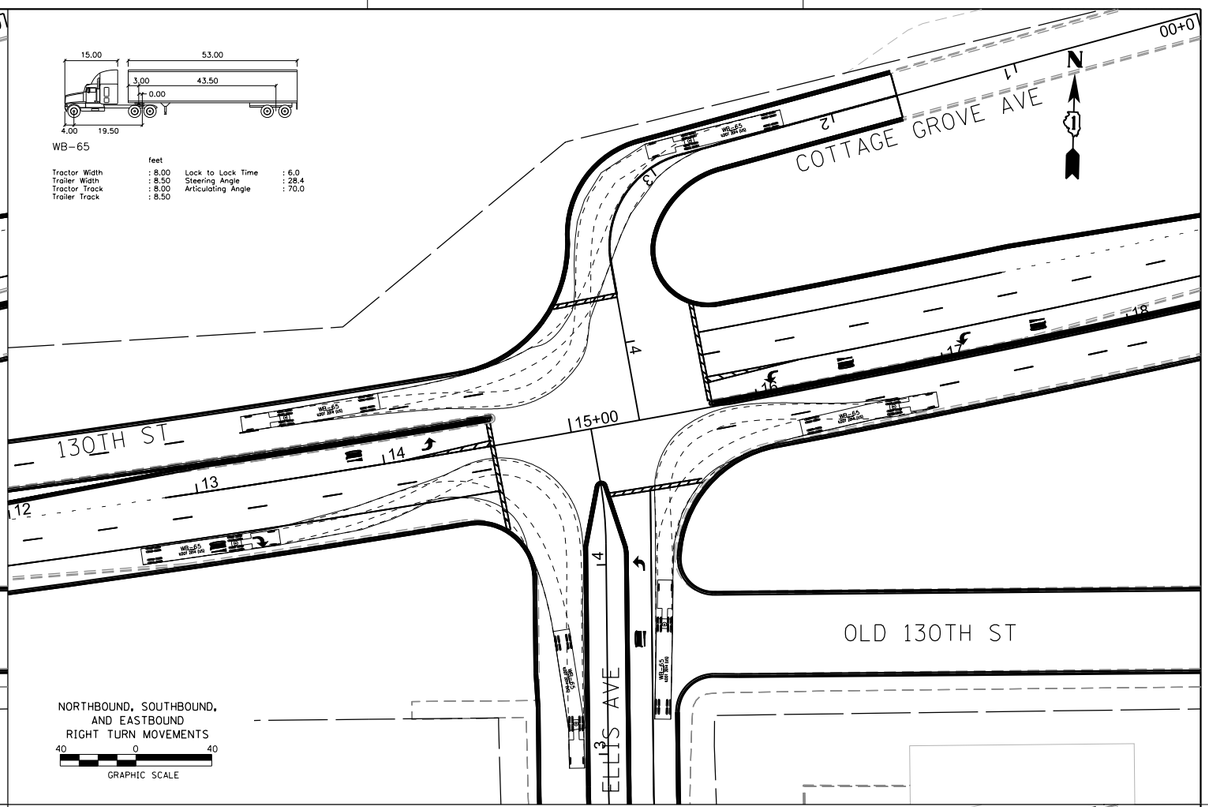


NORTHBOUND AND SOUTHBOUND
LEFT TURN MOVEMENTS

40 0 40
GRAPHIC SCALE

WB-65

feet			
Tractor Width	: 8.00	Lock to Lock Time	: 6.0
Trailer Width	: 8.50	Steering Angle	: 28.4
Tractor Track	: 8.00	Articulating Angle	: 70.0
Trailer Track	: 8.50		

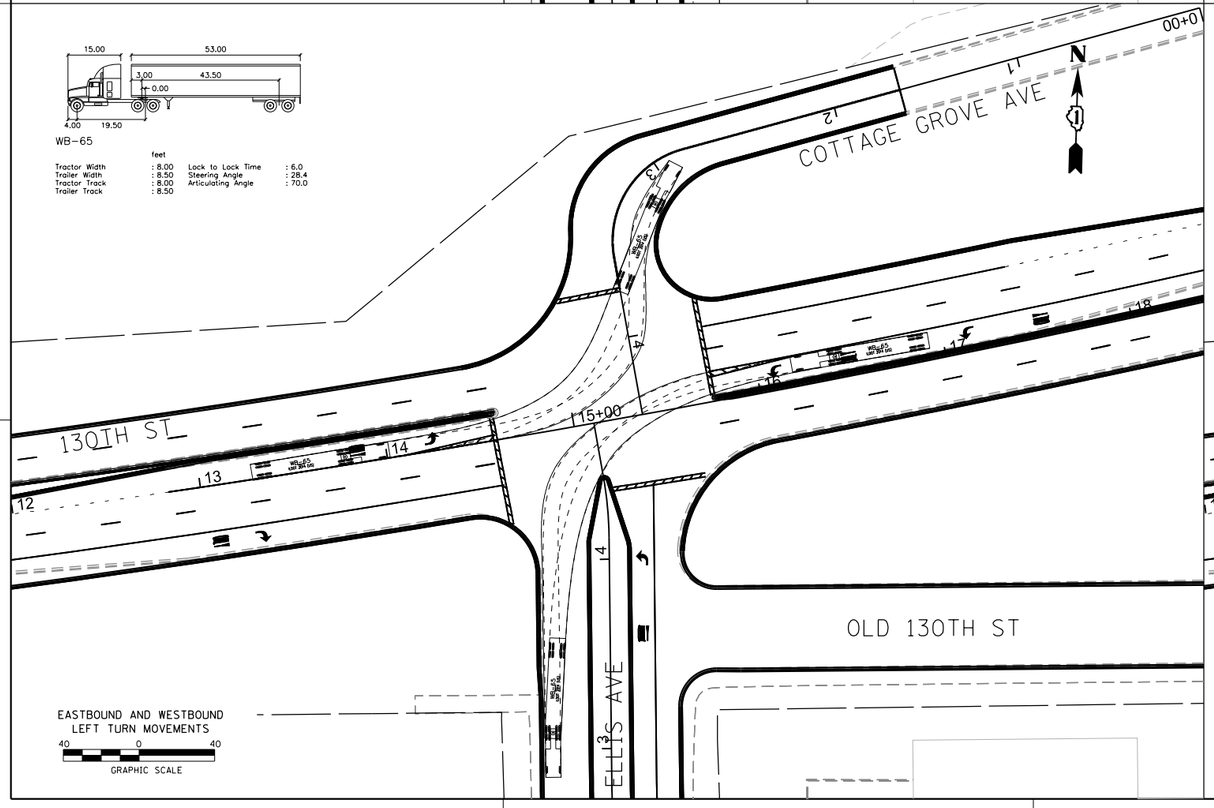


NORTHBOUND, SOUTHBOUND,
AND EASTBOUND
RIGHT TURN MOVEMENTS

40 0 40
GRAPHIC SCALE

WB-65

feet			
Tractor Width	: 8.00	Lock to Lock Time	: 6.0
Trailer Width	: 8.50	Steering Angle	: 28.4
Tractor Track	: 8.00	Articulating Angle	: 70.0
Trailer Track	: 8.50		

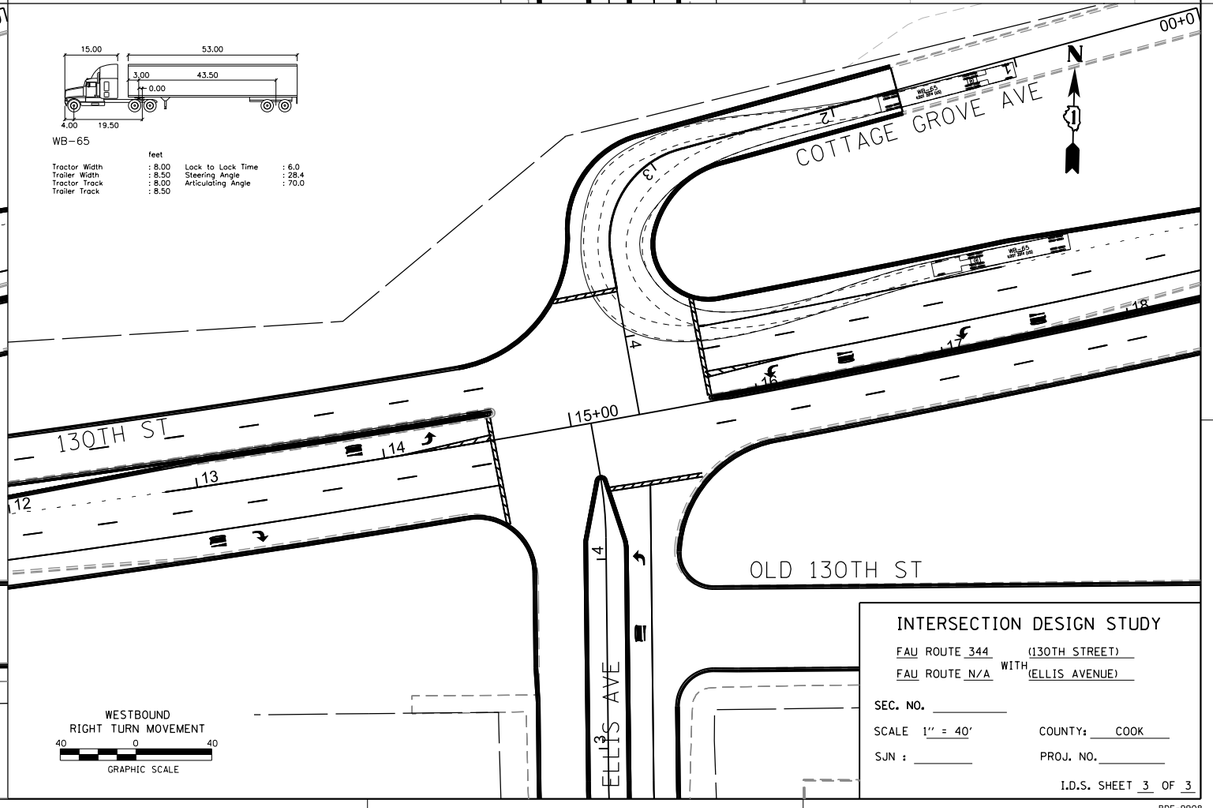


EASTBOUND AND WESTBOUND
LEFT TURN MOVEMENTS

40 0 40
GRAPHIC SCALE

WB-65

feet			
Tractor Width	: 8.00	Lock to Lock Time	: 6.0
Trailer Width	: 8.50	Steering Angle	: 28.4
Tractor Track	: 8.00	Articulating Angle	: 70.0
Trailer Track	: 8.50		



WESTBOUND
RIGHT TURN MOVEMENT

40 0 40
GRAPHIC SCALE

INTERSECTION DESIGN STUDY

FAU ROUTE 344 (130TH STREET)
FAU ROUTE N/A WITH (ELLIS AVENUE)

SEC. NO. _____

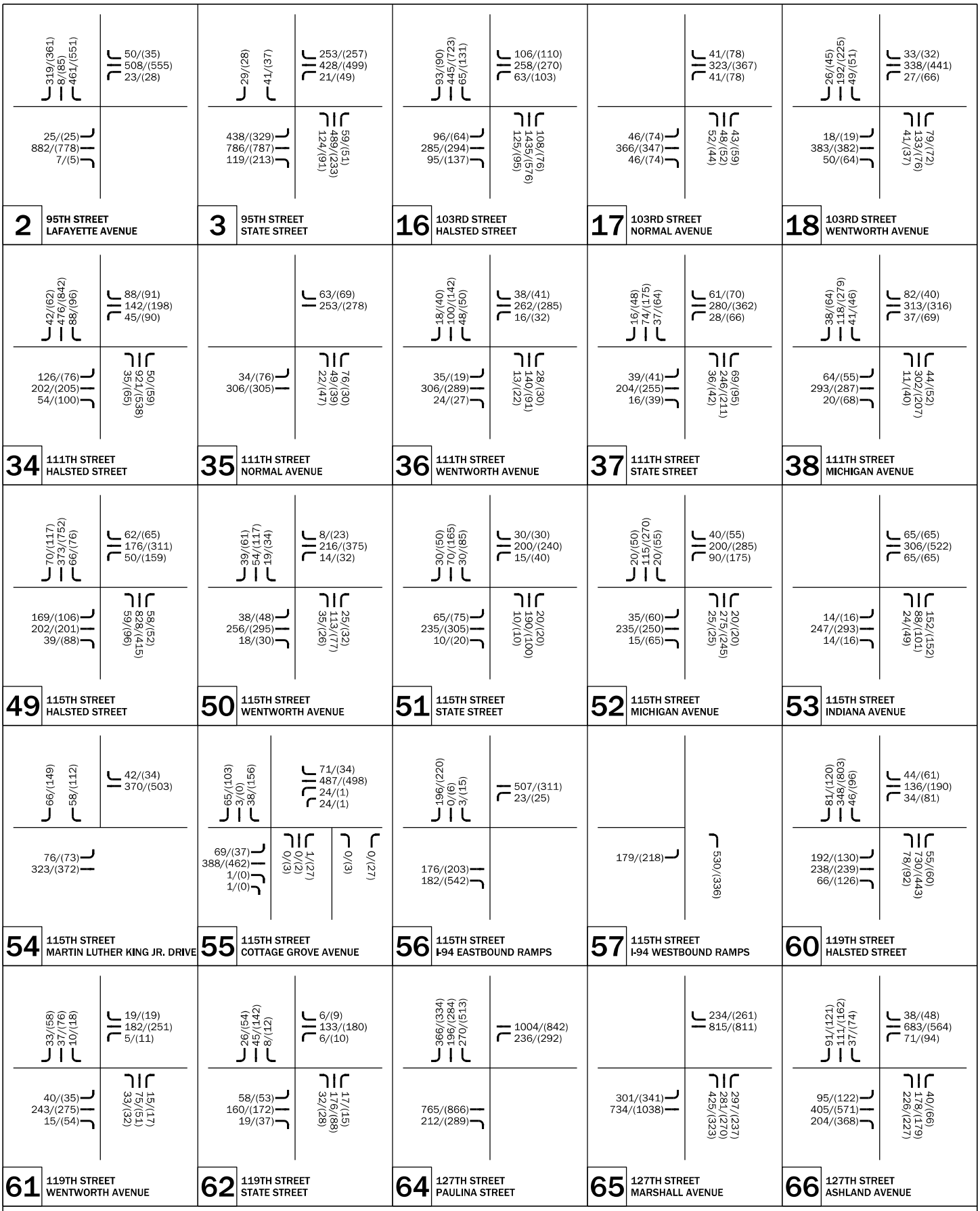
SCALE 1" = 40' COUNTY: COOK

SJN : _____ PROJ. NO. _____

I.D.S. SHEET 3 OF 3

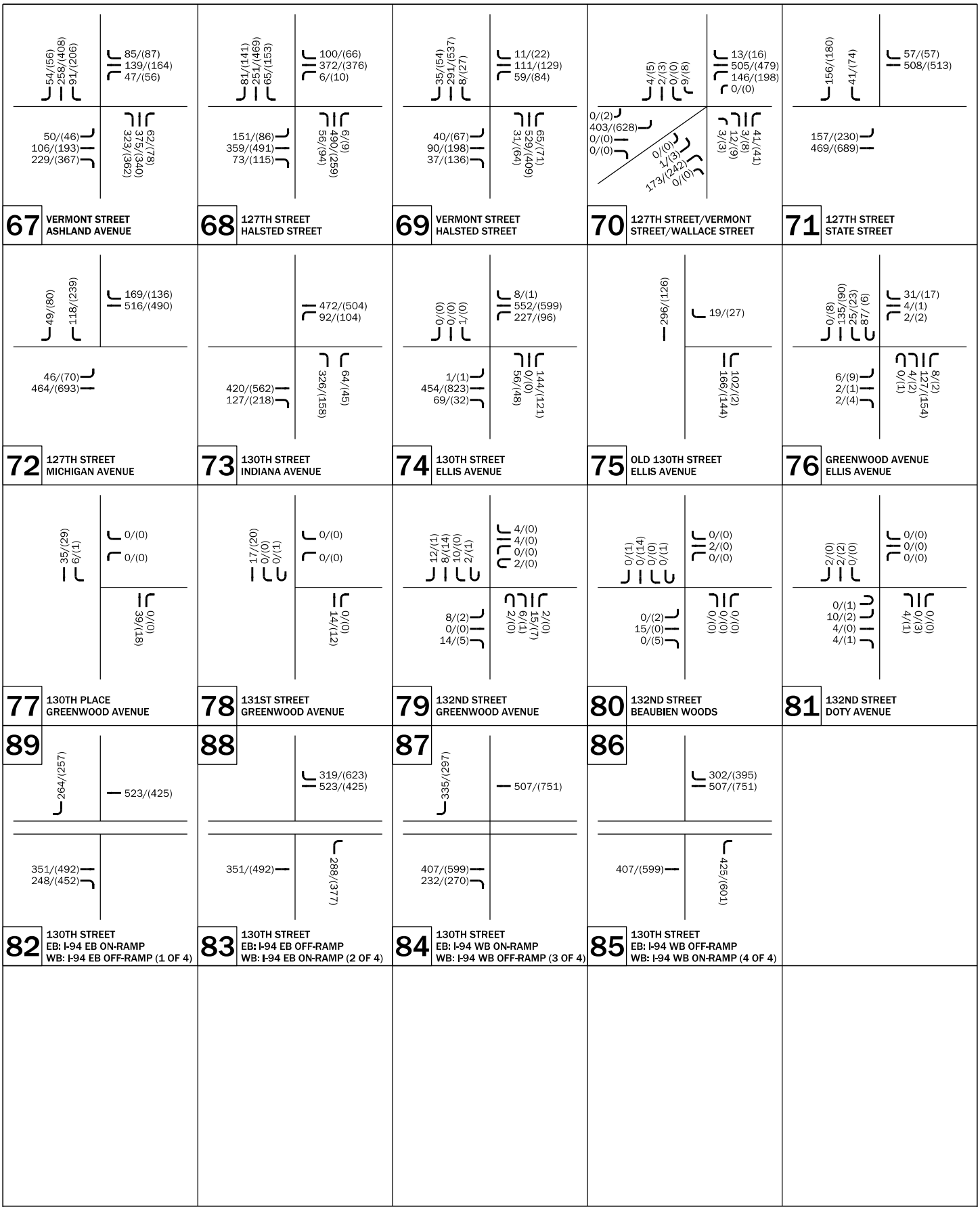
BDE-9908

Traffic Analysis – Existing Condition (2020)



EXISTING (2020) INTERSECTION TRAFFIC VOLUMES

PAGE 1 OF 2



EXISTING (2020) INTERSECTION TRAFFIC VOLUMES

PAGE 2 OF 2

Adjustment of 2020 Collected Traffic Data under COVID-19 Pandemic Conditions for Altgeld Gardens

November 30, 2020

To: CTA RLE Team

From: TranSmart

Re: Adjustment of 2020 Collected Traffic Data under COVID-19 Pandemic Conditions for Altgeld Gardens

Background:

Traffic counts were conducted within Altgeld Gardens to obtain data for use in the traffic analysis of the relocated 130th Street station within Altgeld Gardens. The analysis will be part of the Supplemental Environmental Assessment (EA) evaluating the new location of the 130th Street station. Seven locations within Altgeld Gardens were counted. **Figure 1** in the Appendix shows a map of these locations.

1. Old 130th Street and Ellis Avenue
2. Greenwood Avenue and Ellis Avenue
3. Greenwood Avenue and 130th Place
4. Greenwood Avenue and 131st Street
5. Greenwood Avenue and 132nd Street
6. Beaubien Woods and 132nd Street
7. Doty Avenue and 132nd Street

Traffic counts were conducted on October 7 and 8, 2020 using Miovision cameras and manual counters. The counts were observed from 7:00 AM to 9:00 AM for the morning peak and from 4:00 PM to 6:00 PM for the afternoon peak.

The Chicago Department of Transportation (CDOT) and the Chicago Housing Authority (CHA) were queried and no historical traffic data was available within Altgeld Gardens for comparison. The lack of historical data required that adjustments be made to the collected 2020 Altgeld Gardens traffic data to account for effects of the COVID-19 pandemic before the data could be used in the analysis. Adjustment factors would need to be developed and applied to make it consistent with the available historical traffic data utilized at the 130th Street intersection.

Volume Adjustments:

The growth factor applied to the Altgeld Gardens turning movement counts was calculated from the total volume of inbound and outbound traffic on the south leg of the 130th Street and Ellis

Avenue intersection. The south leg of 130th Street and Ellis Avenue was used to calculate the growth factor because it is the main entrance to the Altgeld Gardens development, serving as a desirable representative for the Altgeld Gardens intersections. The growth factor was the percentage difference between the collected 2020 traffic data and historical traffic data. A separate growth factor was calculated for the AM and PM peak hours. A growth factor of 1.93 and 0.81 was calculated for the AM peak hour and PM peak hour, respectively. Since the growth factor in the AM is greater than 1.00 and the growth factor in the PM is less than 1.00, the adjusted volumes in the AM will be greater than the 2020 volumes collected and the adjusted volumes in the PM will be less than the 2020 volumes collected.

Table 1 in the Appendix has the individual turning movements for the Altgeld Gardens intersections for the AM and PM peaks. These turning movements include the collected 2020 traffic data and the adjusted 2020 traffic data, where the AM and PM growth factor were applied. The adjusted volumes for the seven intersections will be used in the traffic analysis to determine the impacts, if any, of the additional traffic generated by the 130th Street station to the Altgeld Gardens street network near the station.

Appendix

Figure 1: Altgeld Gardens Traffic Count Locations

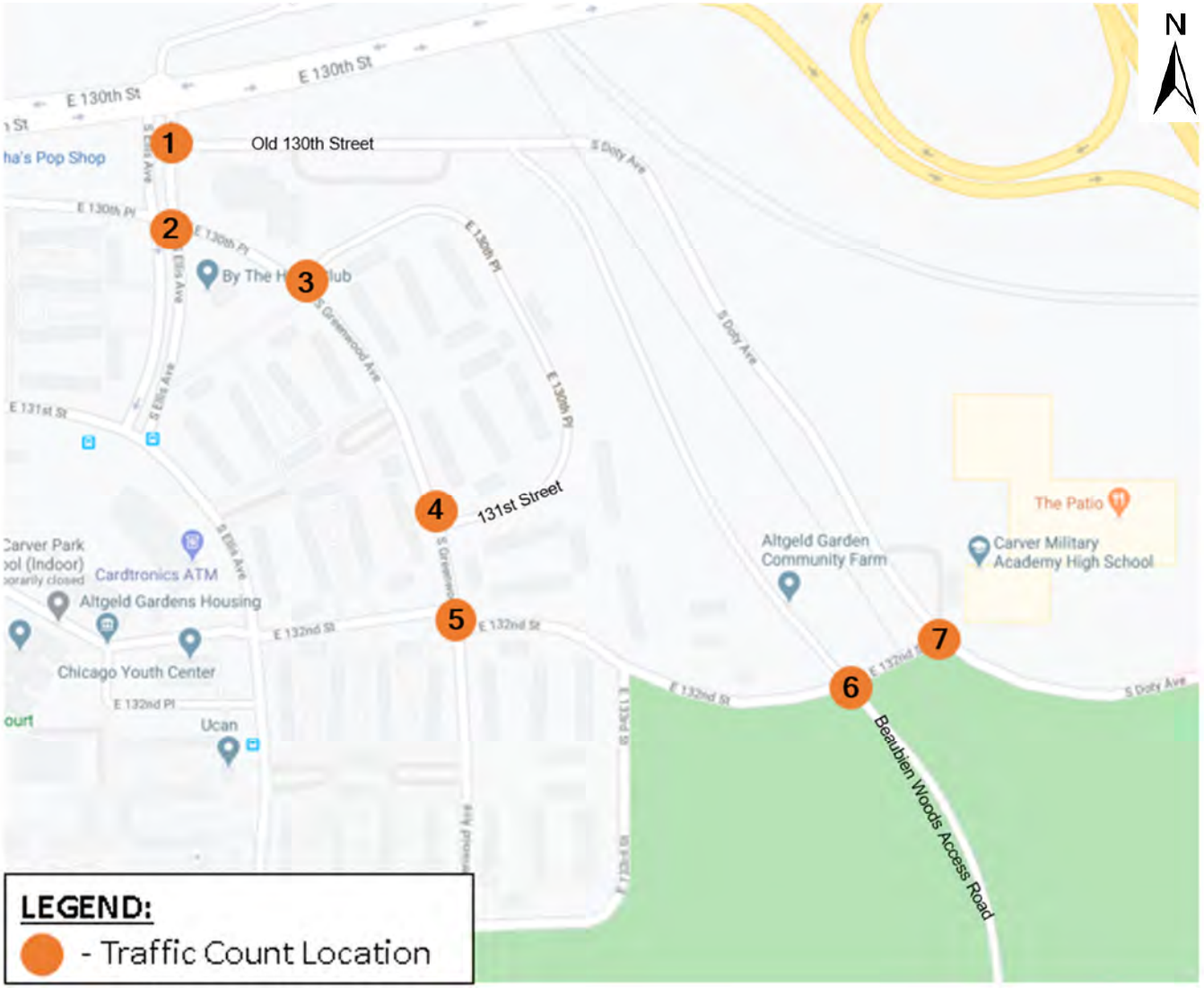
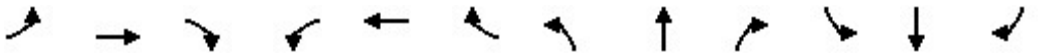
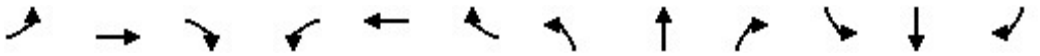


Table 1: Altgeld Gardens Intersections Turning Movement Volumes With and Without the Applied Growth Factor

Intersection	Count Type	Period	Turning Movement															
			NBU	NBL	NBT	NBR	SBU	SBL	SBT	SBR	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	Total
(1) Old 130th St & Ellis Ave	2020 Count	AM	-	-	86	53	-	-	-	-	-	-	-	-	0	-	-	10	149
		PM	-	-	178	3	-	-	-	-	-	-	-	-	0	-	-	33	214
	Apply Growth Factor: AM (1.93); PM (0.81)																		
	2020 Adjusted Volume	AM	-	-	166	102	-	-	-	-	-	-	-	-	0	-	-	19	287
		PM	-	-	144	2	-	-	-	-	-	-	-	-	0	-	-	27	173
(2) Greenwood Ave & Ellis Ave	2020 Count	AM	0	2	66	4	45	13	70	0	0	3	1	1	0	1	2	16	224
		PM	1	2	190	3	8	28	111	10	0	11	1	5	0	3	1	21	395
	Apply Growth Factor: AM (1.93); PM (0.81)																		
	2020 Adjusted Volume	AM	0	4	127	8	87	25	135	0	0	6	2	2	0	2	4	31	433
		PM	1	2	154	2	6	23	90	8	0	9	1	4	0	2	1	17	320
(3) Greenwood Ave & 130th Pl	2020 Count	AM	0	-	20	0	0	3	18	-	-	-	-	-	0	0	-	0	41
		PM	0	-	22	0	0	1	36	-	-	-	-	-	0	0	-	0	59
	Apply Growth Factor: AM (1.93); PM (0.81)																		
	2020 Adjusted Volume	AM	0	-	39	0	0	6	35	-	-	-	-	-	0	0	-	0	80
		PM	0	-	18	0	0	1	29	-	-	-	-	-	0	0	-	0	48
(4) Greenwood Ave & 131st St	2020 Count	AM	0	-	7	0	0	0	9	-	-	-	-	-	0	0	-	0	16
		PM	0	-	15	0	1	0	25	-	-	-	-	-	0	0	-	0	41
	Apply Growth Factor: AM (1.93); PM (0.81)																		
	2020 Adjusted Volume	AM	0	-	14	0	0	0	17	-	-	-	-	-	0	0	-	0	31
		PM	0	-	12	0	1	0	20	-	-	-	-	-	0	0	-	0	33
(5) Greenwood Ave & 132nd St	2020 Count	AM	1	3	8	1	1	5	4	6	0	4	0	7	1	0	2	2	45
		PM	0	1	9	0	1	0	17	1	0	3	0	6	0	0	0	0	38
	Apply Growth Factor: AM (1.93); PM (0.81)																		
	2020 Adjusted Volume	AM	2	6	15	2	2	10	8	12	0	8	0	14	2	0	4	4	89
		PM	0	1	7	0	1	0	14	1	0	2	0	5	0	0	0	0	31
(6) Beaubien Woods & 132nd St	2020 Count	AM	0	0	0	0	0	0	0	0	0	0	8	0	0	0	1	0	9
		PM	0	0	0	0	1	0	17	1	0	3	0	6	0	0	0	0	28
	Apply Growth Factor: AM (1.93); PM (0.81)																		
	2020 Adjusted Volume	AM	0	0	0	0	0	0	0	0	0	0	15	0	0	0	2	0	17
		PM	0	0	0	0	1	0	14	1	0	2	0	5	0	0	0	0	23
(7) Doty Ave & 132nd St	2020 Count	AM	0	2	0	0	0	0	1	0	0	5	2	2	0	0	0	0	12
		PM	0	1	4	0	0	0	2	2	1	2	0	1	0	0	0	0	13
	Apply Growth Factor: AM (1.93); PM (0.81)																		
	2020 Adjusted Volume	AM	0	4	0	0	0	0	2	0	0	10	4	4	0	0	0	0	24
		PM	0	1	3	0	0	0	2	2	1	2	0	1	0	0	0	0	12



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	1	454	69	227	552	8	56	0	144	1	0	0
Future Volume (vph)	1	454	69	227	552	8	56	0	144	1	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	12	12	12	16	12
Storage Length (ft)	165		165	165		165	0		0	0		0
Storage Lanes	1		1	1		1	0		1	0		0
Taper Length (ft)	210			200			25			25		
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.850			0.850			0.850			
Flt Protected	0.950			0.950				0.950			0.950	
Satd. Flow (prot)	1710	3109	1471	1644	3138	1366	0	1449	1443	0	969	0
Flt Permitted	0.436			0.435				0.757			0.719	
Satd. Flow (perm)	785	3109	1471	753	3138	1366	0	1155	1443	0	733	0
Right Turn on Red			No			No			No			No
Satd. Flow (RTOR)												
Link Speed (mph)		35			35			30			30	
Link Distance (ft)		5340			1172			141			331	
Travel Time (s)		104.0			22.8			3.2			7.5	
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Heavy Vehicles (%)	0%	10%	4%	4%	9%	12%	18%	0%	6%	100%	0%	0%
Adj. Flow (vph)	1	473	72	236	575	8	58	0	150	1	0	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	1	473	72	236	575	8	0	58	150	0	1	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	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07	0.91	1.07
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	1	1	1	1	1	1	1	1	1	1	
Detector Template												
Leading Detector (ft)	50	50	50	50	50	50	50	50	50	50	50	
Trailing Detector (ft)	0	0	0	0	0	0	0	0	0	0	0	
Detector 1 Position(ft)	0	0	0	0	0	0	0	0	0	0	0	
Detector 1 Size(ft)	50	50	50	50	50	50	50	50	50	50	50	
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Turn Type	Perm	NA	Perm	pm+pt	NA	Perm	Perm	NA	Perm	Perm	NA	
Protected Phases		4		3	8			2			6	
Permitted Phases	4		4	8		8	2		2	6		
Detector Phase	4	4	4	3	8	8	2	2	2	6	6	
Switch Phase												
Minimum Initial (s)	43.0	43.0	43.0	7.0	43.0	43.0	6.0	6.0	6.0	6.0	6.0	



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Minimum Split (s)	47.0	47.0	47.0	10.0	47.0	47.0	10.0	10.0	10.0	10.0	10.0	
Total Split (s)	47.0	47.0	47.0	10.0	57.0	57.0	28.0	28.0	28.0	28.0	28.0	
Total Split (%)	55.3%	55.3%	55.3%	11.8%	67.1%	67.1%	32.9%	32.9%	32.9%	32.9%	32.9%	
Maximum Green (s)	43.0	43.0	43.0	7.0	53.0	53.0	24.0	24.0	24.0	24.0	24.0	
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	
All-Red Time (s)	1.0	1.0	1.0	0.0	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		0.0	
Total Lost Time (s)	4.0	4.0	4.0	3.0	4.0	4.0		4.0	4.0		4.0	
Lead/Lag	Lag	Lag	Lag	Lead								
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	6.0	6.0	6.0	6.0	6.0	
Recall Mode	C-Max	C-Max	C-Max	None	C-Max	C-Max	None	None	None	None	None	
Act Effct Green (s)	48.4	48.4	48.4	61.1	60.1	60.1		16.9	16.9		16.9	
Actuated g/C Ratio	0.57	0.57	0.57	0.72	0.71	0.71		0.20	0.20		0.20	
v/c Ratio	0.00	0.27	0.09	0.37	0.26	0.01		0.25	0.52		0.01	
Control Delay	10.0	10.7	10.3	6.4	5.4	5.1		30.2	36.7		24.0	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	
Total Delay	10.0	10.7	10.3	6.4	5.4	5.1		30.2	36.7		24.0	
LOS	A	B	B	A	A	A		C	D		C	
Approach Delay		10.6			5.7			34.9			24.0	
Approach LOS		B			A			C			C	
90th %ile Green (s)	43.0	43.0	43.0	7.9	53.9	53.9	23.1	23.1	23.1	23.1	23.1	
90th %ile Term Code	Coord	Coord	Coord	Max	Coord	Coord	Gap	Gap	Gap	Hold	Hold	
70th %ile Green (s)	43.9	43.9	43.9	11.0	57.9	57.9	19.1	19.1	19.1	19.1	19.1	
70th %ile Term Code	Coord	Coord	Coord	Gap	Coord	Coord	Gap	Gap	Gap	Hold	Hold	
50th %ile Green (s)	47.8	47.8	47.8	9.4	60.2	60.2	16.8	16.8	16.8	16.8	16.8	
50th %ile Term Code	Coord	Coord	Coord	Gap	Coord	Coord	Gap	Gap	Gap	Hold	Hold	
30th %ile Green (s)	51.5	51.5	51.5	8.1	62.6	62.6	14.4	14.4	14.4	14.4	14.4	
30th %ile Term Code	Coord	Coord	Coord	Gap	Coord	Coord	Gap	Gap	Gap	Hold	Hold	
10th %ile Green (s)	55.9	55.9	55.9	7.0	65.9	65.9	11.1	11.1	11.1	11.1	11.1	
10th %ile Term Code	Coord	Coord	Coord	Min	Coord	Coord	Gap	Gap	Gap	Hold	Hold	
Stops (vph)	1	225	33	73	186	3		47	128		2	
Fuel Used(gal)	0	20	3	3	8	0		1	2		0	
CO Emissions (g/hr)	3	1411	213	220	532	8		47	136		1	
NOx Emissions (g/hr)	1	274	42	43	103	2		9	26		0	
VOC Emissions (g/hr)	1	327	49	51	123	2		11	31		0	
Dilemma Vehicles (#)	0	26	0	0	33	0		0	0		0	
Queue Length 50th (ft)	0	63	16	34	48	1		27	74		0	
Queue Length 95th (ft)	3	105	41	77	90	6		58	127		4	
Internal Link Dist (ft)		5260			1092			61			251	
Turn Bay Length (ft)	165		165	165		165						
Base Capacity (vph)	447	1770	838	632	2218	966		326	407		206	
Starvation Cap Reductn	0	0	0	0	0	0		0	0		0	
Spillback Cap Reductn	0	0	0	0	0	0		0	0		0	
Storage Cap Reductn	0	0	0	0	0	0		0	0		0	
Reduced v/c Ratio	0.00	0.27	0.09	0.37	0.26	0.01		0.18	0.37		0.00	

Intersection Summary	
Area Type:	Other

Cycle Length: 85	
Actuated Cycle Length: 85	
Offset: 0 (0%), Referenced to phase 4:EBTL and 8:WBTL, Start of Green	
Natural Cycle: 70	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.52	
Intersection Signal Delay: 11.2	Intersection LOS: B
Intersection Capacity Utilization 86.7%	ICU Level of Service E
Analysis Period (min) 15	

Splits and Phases: 1: Ellis Avenue & 130th Street

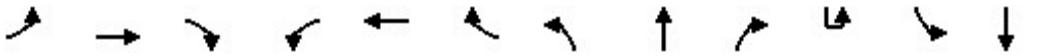
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	0	19	166	102	0	296
Future Volume (vph)	0	19	166	102	0	296
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Lane Util. Factor	1.00	1.00	0.95	0.95	1.00	0.95
Frt		0.865	0.943			
Flt Protected						
Satd. Flow (prot)	0	1557	3225	0	0	3420
Flt Permitted						
Satd. Flow (perm)	0	1557	3225	0	0	3420
Link Speed (mph)	30		30			30
Link Distance (ft)	642		174			141
Travel Time (s)	14.6		4.0			3.2
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%
Adj. Flow (vph)	0	21	184	113	0	329
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	21	297	0	0	329
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(ft)	0		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
Turning Speed (mph)	15	9		9	15	
Sign Control	Stop		Free			Free

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 18.3%		ICU Level of Service A	
Analysis Period (min) 15			

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	0	19	166	102	0	296
Future Volume (Veh/h)	0	19	166	102	0	296
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	0	21	184	113	0	329
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type			None			None
Median storage veh)						
Upstream signal (ft)						141
pX, platoon unblocked						
vC, conflicting volume	405	148			297	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	405	148			297	
tC, single (s)	6.8	6.9			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	100	98			100	
cM capacity (veh/h)	579	878			1276	

Direction, Lane #	WB 1	NB 1	NB 2	SB 1	SB 2
Volume Total	21	123	174	164	164
Volume Left	0	0	0	0	0
Volume Right	21	0	113	0	0
cSH	878	1700	1700	1700	1700
Volume to Capacity	0.02	0.07	0.10	0.10	0.10
Queue Length 95th (ft)	2	0	0	0	0
Control Delay (s)	9.2	0.0	0.0	0.0	0.0
Lane LOS	A				
Approach Delay (s)	9.2	0.0		0.0	
Approach LOS	A				

Intersection Summary			
Average Delay	0.3		
Intersection Capacity Utilization	18.3%	ICU Level of Service	A
Analysis Period (min)	15		

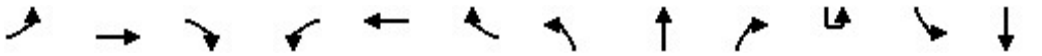


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBU	SBL	SBT
Lane Configurations												
Traffic Volume (vph)	6	2	2	2	4	31	4	127	8	87	25	135
Future Volume (vph)	6	2	2	2	4	31	4	127	8	87	25	135
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt		0.975			0.885			0.992				
Flt Protected		0.969			0.998			0.999				0.978
Satd. Flow (prot)	0	1701	0	0	1590	0	0	1727	0	0	0	1737
Flt Permitted		0.969			0.998			0.999				0.978
Satd. Flow (perm)	0	1701	0	0	1590	0	0	1727	0	0	0	1737
Link Speed (mph)		30			30			30				30
Link Distance (ft)		472			392			265				174
Travel Time (s)		10.7			8.9			6.0				4.0
Confl. Peds. (#/hr)			4	4		1			1	4	1	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	0%	2%	25%	0%	8%	1%
Adj. Flow (vph)	7	2	2	2	4	34	4	141	9	97	28	150
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	11	0	0	40	0	0	154	0	0	0	275
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	R NA	Left	Left
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	1.07	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	9	15	
Sign Control		Stop			Stop			Free				Free

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 36.6%		ICU Level of Service A	
Analysis Period (min) 15			

Lane Group	SBR
Lane Configurations	
Traffic Volume (vph)	0
Future Volume (vph)	0
Ideal Flow (vphpl)	1800
Lane Util. Factor	1.00
Ped Bike Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	1800
Flt Permitted	
Satd. Flow (perm)	1800
Link Speed (mph)	
Link Distance (ft)	
Travel Time (s)	
Confl. Peds. (#/hr)	4
Peak Hour Factor	0.90
Heavy Vehicles (%)	0%
Adj. Flow (vph)	0
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
Sign Control	

Intersection Summary



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBU	SBL	SBT
Lane Configurations												
Traffic Volume (veh/h)	6	2	2	2	4	31	4	127	8	87	25	135
Future Volume (Veh/h)	6	2	2	2	4	31	4	127	8	87	25	135
Sign Control		Stop			Stop			Free				Free
Grade		0%			0%			0%				0%
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	7	2	2	2	4	34	4	141	9	0	28	150
Pedestrians		4			1			4				1
Lane Width (ft)		12.0			12.0			12.0				12.0
Walking Speed (ft/s)		4.0			4.0			4.0				4.0
Percent Blockage		0			0			0				0
Right turn flare (veh)												
Median type								None				None
Median storage veh)												
Upstream signal (ft)												315
pX, platoon unblocked	0.99	0.99	0.99	0.99	0.99		0.99			0.00		
vC, conflicting volume	400	369	158	368	364	148	154			0	151	
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	385	353	139	351	348	148	134			0	151	
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			0.0	4.2	
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			0.0	2.3	
p0 queue free %	99	100	100	100	99	96	100			0	98	
cM capacity (veh/h)	531	552	896	581	555	903	1437			0	1393	

Direction, Lane #	EB 1	WB 1	NB 1	SB 1	SB 2
Volume Total	11	40	154	178	0
Volume Left	7	2	4	28	0
Volume Right	2	34	9	0	0
cSH	578	828	1437	1393	1700
Volume to Capacity	0.02	0.05	0.00	0.02	0.00
Queue Length 95th (ft)	1	4	0	2	0
Control Delay (s)	11.3	9.6	0.2	1.3	0.0
Lane LOS	B	A	A	A	
Approach Delay (s)	11.3	9.6	0.2	1.3	
Approach LOS	B	A			

Intersection Summary				
Average Delay	2.0			
Intersection Capacity Utilization	36.6%	ICU Level of Service		A
Analysis Period (min)	15			

Movement	SBR
Lane Configurations	
Traffic Volume (veh/h)	0
Future Volume (Veh/h)	0
Sign Control	
Grade	
Peak Hour Factor	0.90
Hourly flow rate (vph)	0
Pedestrians	
Lane Width (ft)	
Walking Speed (ft/s)	
Percent Blockage	
Right turn flare (veh)	
Median type	
Median storage veh)	
Upstream signal (ft)	
pX, platoon unblocked	
vC, conflicting volume	
vC1, stage 1 conf vol	
vC2, stage 2 conf vol	
vCu, unblocked vol	
tC, single (s)	
tC, 2 stage (s)	
tF (s)	
p0 queue free %	
cM capacity (veh/h)	
Direction, Lane #	

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	0	0	39	0	6	35
Future Volume (vph)	0	0	39	0	6	35
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt						
Flt Protected						0.992
Satd. Flow (prot)	1765	0	1765	0	0	1751
Flt Permitted						0.992
Satd. Flow (perm)	1765	0	1765	0	0	1751
Link Speed (mph)	30		30			30
Link Distance (ft)	330		257			242
Travel Time (s)	7.5		5.8			5.5
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	42	0	7	38
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	0	42	0	0	45
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
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
Turning Speed (mph)	15	9		9	15	
Sign Control	Stop		Free			Free

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 10.7%		ICU Level of Service A	
Analysis Period (min) 15			

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	0	0	39	0	6	35
Future Volume (Veh/h)	0	0	39	0	6	35
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	0	42	0	7	38
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type			None			None
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	94	42			42	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	94	42			42	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	100	100			100	
cM capacity (veh/h)	902	1029			1567	

Direction, Lane #	WB 1	NB 1	SB 1
Volume Total	0	42	45
Volume Left	0	0	7
Volume Right	0	0	0
cSH	1700	1700	1567
Volume to Capacity	0.00	0.02	0.00
Queue Length 95th (ft)	0	0	0
Control Delay (s)	0.0	0.0	1.2
Lane LOS	A		A
Approach Delay (s)	0.0	0.0	1.2
Approach LOS	A		

Intersection Summary			
Average Delay	0.6		
Intersection Capacity Utilization	10.7%	ICU Level of Service	A
Analysis Period (min)	15		

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	0	0	14	0	0	17
Future Volume (vph)	0	0	14	0	0	17
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt						
Flt Protected						
Satd. Flow (prot)	1800	0	1800	0	0	1622
Flt Permitted						
Satd. Flow (perm)	1800	0	1800	0	0	1622
Link Speed (mph)	30		30			30
Link Distance (ft)	383		252			706
Travel Time (s)	8.7		5.7			16.0
Confl. Peds. (#/hr)	3			3		
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles (%)	0%	0%	0%	0%	0%	11%
Adj. Flow (vph)	0	0	16	0	0	19
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	0	16	0	0	19
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
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
Turning Speed (mph)	15	9		9	15	
Sign Control	Stop		Free			Free

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization	7.6%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	0	0	14	0	0	17
Future Volume (Veh/h)	0	0	14	0	0	17
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	0	0	16	0	0	19
Pedestrians	3		3			
Lane Width (ft)	12.0		12.0			
Walking Speed (ft/s)	4.0		4.0			
Percent Blockage	0		0			
Right turn flare (veh)						
Median type			None			None
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	41	19			19	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	41	19			19	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	100	100			100	
cM capacity (veh/h)	971	1062			1607	

Direction, Lane #	WB 1	NB 1	SB 1
Volume Total	0	16	19
Volume Left	0	0	0
Volume Right	0	0	0
cSH	1700	1700	1607
Volume to Capacity	0.00	0.01	0.00
Queue Length 95th (ft)	0	0	0
Control Delay (s)	0.0	0.0	0.0
Lane LOS	A		
Approach Delay (s)	0.0	0.0	0.0
Approach LOS	A		

Intersection Summary			
Average Delay	0.0		
Intersection Capacity Utilization	7.6%	ICU Level of Service	A
Analysis Period (min)	15		

Lane Group	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU
Lane Configurations												
Traffic Volume (vph)	8	0	14	2	0	4	4	2	6	15	2	2
Future Volume (vph)	8	0	14	2	0	4	4	2	6	15	2	2
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
Frt		0.914				0.946				0.990		
Flt Protected		0.982				0.990				0.984		
Satd. Flow (prot)	0	1616	0	0	0	1686	0	0	0	1637	0	0
Flt Permitted		0.982				0.990				0.984		
Satd. Flow (perm)	0	1616	0	0	0	1686	0	0	0	1637	0	0
Link Speed (mph)		30				30				30		
Link Distance (ft)		311				1025				274		
Travel Time (s)		7.1				23.3				6.2		
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	100%	0%
Adj. Flow (vph)	9	0	16	2	0	4	4	2	7	17	2	2
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	25	0	0	0	10	0	0	0	28	0	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	R NA	Left	Left	Right	R NA	Left	Left	Right	R NA
Median Width(ft)		0				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)	15		9	9	15		9	9	15		9	9
Sign Control		Stop				Stop				Free		

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 13.3%		ICU Level of Service A	
Analysis Period (min) 15			

Lane Group	SBL	SBT	SBR
Lane Configurations			
Traffic Volume (vph)	10	8	12
Future Volume (vph)	10	8	12
Ideal Flow (vphpl)	1800	1800	1800
Lane Util. Factor	1.00	1.00	1.00
Frt		0.950	
Flt Protected		0.982	
Satd. Flow (prot)	0	1578	0
Flt Permitted		0.982	
Satd. Flow (perm)	0	1578	0
Link Speed (mph)		30	
Link Distance (ft)		252	
Travel Time (s)		5.7	
Peak Hour Factor	0.90	0.90	0.90
Heavy Vehicles (%)	0%	25%	0%
Adj. Flow (vph)	11	9	13
Shared Lane Traffic (%)			
Lane Group Flow (vph)	0	35	0
Enter Blocked Intersection	No	No	No
Lane Alignment	Left	Left	Right
Median Width(ft)		0	
Link Offset(ft)		0	
Crosswalk Width(ft)		16	
Two way Left Turn Lane			
Headway Factor	1.07	1.07	1.07
Turning Speed (mph)	15		9
Sign Control		Free	

Intersection Summary

Movement	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU
Lane Configurations												
Traffic Volume (veh/h)	8	0	14	2	0	4	4	2	6	15	2	2
Future Volume (Veh/h)	8	0	14	2	0	4	4	2	6	15	2	2
Sign Control		Stop				Stop				Free		
Grade		0%				0%				0%		
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	9	0	16	0	0	4	4	0	7	17	2	0
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type										None		
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked				0.00				0.00				0.00
vC, conflicting volume	76	70	16	0	86	76	18	0	22			0
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	76	70	16	0	86	76	18	0	22			0
tC, single (s)	7.1	6.5	6.2	0.0	7.1	6.5	6.2	0.0	4.1			0.0
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	0.0	3.5	4.0	3.3	0.0	2.2			0.0
p0 queue free %	99	100	99	0	100	100	100	0	100			0
cM capacity (veh/h)	905	815	1070	0	884	809	1066	0	1607			0

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	25	8	26	33
Volume Left	9	0	7	11
Volume Right	16	4	2	13
cSH	1004	920	1607	1611
Volume to Capacity	0.02	0.01	0.00	0.01
Queue Length 95th (ft)	2	1	0	1
Control Delay (s)	8.7	8.9	2.0	2.5
Lane LOS	A	A	A	A
Approach Delay (s)	8.7	8.9	2.0	2.5
Approach LOS	A	A		

Intersection Summary				
Average Delay	4.6			
Intersection Capacity Utilization	13.3%	ICU Level of Service	A	
Analysis Period (min)	15			

Movement	SBL	SBT	SBR
Lane Configurations			
Traffic Volume (veh/h)	10	8	12
Future Volume (Veh/h)	10	8	12
Sign Control		Free	
Grade		0%	
Peak Hour Factor	0.90	0.90	0.90
Hourly flow rate (vph)	11	9	13
Pedestrians			
Lane Width (ft)			
Walking Speed (ft/s)			
Percent Blockage			
Right turn flare (veh)			
Median type		None	
Median storage veh)			
Upstream signal (ft)			
pX, platoon unblocked			
vC, conflicting volume	19		
vC1, stage 1 conf vol			
vC2, stage 2 conf vol			
vCu, unblocked vol	19		
tC, single (s)	4.1		
tC, 2 stage (s)			
tF (s)	2.2		
p0 queue free %	99		
cM capacity (veh/h)	1611		
Direction, Lane #			

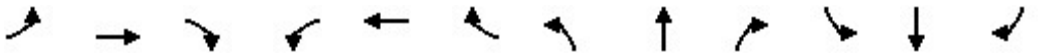
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	SEL	SET	SER	NWL	NWT	NWR
Lane Configurations												
Traffic Volume (vph)	0	15	0	0	2	0	0	0	0	0	0	0
Future Volume (vph)	0	15	0	0	2	0	0	0	0	0	0	0
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt												
Flt Protected												
Satd. Flow (prot)	0	1104	0	0	1800	0	0	1800	0	0	1800	0
Flt Permitted												
Satd. Flow (perm)	0	1104	0	0	1800	0	0	1800	0	0	1800	0
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		1025			255			543			489	
Travel Time (s)		23.3			5.8			12.3			11.1	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles (%)	0%	63%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Adj. Flow (vph)	0	17	0	0	2	0	0	0	0	0	0	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	17	0	0	2	0	0	0	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	1.07	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
Sign Control		Free			Free			Stop			Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 6.7%		ICU Level of Service A	
Analysis Period (min) 15			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	SEL	SET	SER	NWL	NWT	NWR
Lane Configurations												
Traffic Volume (veh/h)	0	15	0	0	2	0	0	0	0	0	0	0
Future Volume (Veh/h)	0	15	0	0	2	0	0	0	0	0	0	0
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	0	17	0	0	2	0	0	0	0	0	0	0
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	2			17			19	19	2	19	19	17
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	2			17			19	19	2	19	19	17
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	100			100			100	100	100	100	100	100
cM capacity (veh/h)	1634			1613			1000	879	1088	1000	879	1068

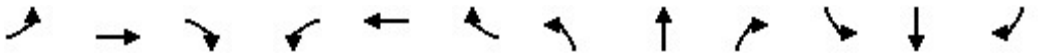
Direction, Lane #	EB 1	WB 1	SE 1	NW 1
Volume Total	17	2	0	0
Volume Left	0	0	0	0
Volume Right	0	0	0	0
cSH	1634	1613	1700	1700
Volume to Capacity	0.00	0.00	0.00	0.00
Queue Length 95th (ft)	0	0	0	0
Control Delay (s)	0.0	0.0	0.0	0.0
Lane LOS			A	A
Approach Delay (s)	0.0	0.0	0.0	0.0
Approach LOS			A	A

Intersection Summary			
Average Delay	0.0		
Intersection Capacity Utilization	6.7%	ICU Level of Service	A
Analysis Period (min)	15		



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	10	4	4	0	0	0	4	0	0	0	2	2
Future Volume (vph)	10	4	4	0	0	0	4	0	0	0	2	2
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
Frt		0.972									0.932	
Flt Protected		0.972						0.950				
Satd. Flow (prot)	0	1667	0	0	1765	0	0	1676	0	0	1645	0
Flt Permitted		0.972						0.950				
Satd. Flow (perm)	0	1667	0	0	1765	0	0	1676	0	0	1645	0
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		357			354			334			259	
Travel Time (s)		8.1			8.0			7.6			5.9	
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
Adj. Flow (vph)	11	4	4	0	0	0	4	0	0	0	2	2
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	19	0	0	0	0	0	4	0	0	4	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	1.07	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
Sign Control		Stop			Stop			Free			Free	

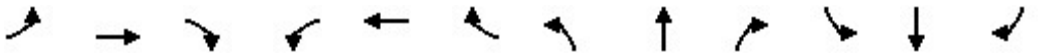
Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 13.5%		ICU Level of Service A	
Analysis Period (min) 15			



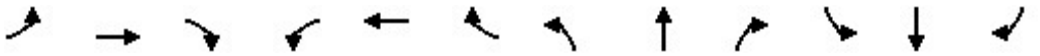
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	10	4	4	0	0	0	4	0	0	0	2	2
Future Volume (Veh/h)	10	4	4	0	0	0	4	0	0	0	2	2
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	11	4	4	0	0	0	4	0	0	0	2	2
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	11	11	3	17	12	0	4			0		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	11	11	3	17	12	0	4			0		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	99	100	100	100	100	100	100			100		
cM capacity (veh/h)	1005	882	1081	989	880	1085	1618			1623		

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	19	0	4	4
Volume Left	11	0	4	0
Volume Right	4	0	0	2
cSH	990	1700	1618	1700
Volume to Capacity	0.02	0.00	0.00	0.00
Queue Length 95th (ft)	1	0	0	0
Control Delay (s)	8.7	0.0	7.2	0.0
Lane LOS	A	A	A	
Approach Delay (s)	8.7	0.0	7.2	0.0
Approach LOS	A	A		

Intersection Summary				
Average Delay	7.2			
Intersection Capacity Utilization	13.5%	ICU Level of Service	A	
Analysis Period (min)	15			



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	1	823	32	96	599	1	48	0	121	0	0	0
Future Volume (vph)	1	823	32	96	599	1	48	0	121	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	12	12	12	16	12
Storage Length (ft)	165		165	165		165	0		0	0		0
Storage Lanes	1		1	1		1	0		1	0		0
Taper Length (ft)	210			200			25			25		
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.850			0.850			0.850			
Flt Protected	0.950			0.950				0.950				
Satd. Flow (prot)	1710	3320	1530	1644	3320	1530	0	1710	1500	0	2040	0
Flt Permitted	0.415			0.278				0.757				
Satd. Flow (perm)	747	3320	1530	481	3320	1530	0	1363	1500	0	2040	0
Right Turn on Red			No			No			No			No
Satd. Flow (RTOR)												
Link Speed (mph)		35			35			30			30	
Link Distance (ft)		5343			1170			134			331	
Travel Time (s)		104.1			22.8			3.0			7.5	
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Heavy Vehicles (%)	0%	3%	0%	4%	3%	0%	0%	0%	2%	0%	0%	0%
Adj. Flow (vph)	1	857	33	100	624	1	50	0	126	0	0	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	1	857	33	100	624	1	0	50	126	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)		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	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07	0.91	1.07
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	1	1	1	1	1	1	1	1	1	1	
Detector Template												
Leading Detector (ft)	50	50	50	50	50	50	50	50	50	50	50	
Trailing Detector (ft)	0	0	0	0	0	0	0	0	0	0	0	
Detector 1 Position(ft)	0	0	0	0	0	0	0	0	0	0	0	
Detector 1 Size(ft)	50	50	50	50	50	50	50	50	50	50	50	
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Turn Type	Perm	NA	Perm	pm+pt	NA	Perm	Perm	NA	Perm			
Protected Phases		4		3	8			2			6	
Permitted Phases	4		4	8		8	2		2	6		
Detector Phase	4	4	4	3	8	8	2	2	2	6	6	
Switch Phase												
Minimum Initial (s)	43.0	43.0	43.0	7.0	43.0	43.0	6.0	6.0	6.0	6.0	6.0	



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Minimum Split (s)	47.0	47.0	47.0	10.0	47.0	47.0	10.0	10.0	10.0	10.0	10.0	
Total Split (s)	47.0	47.0	47.0	10.0	57.0	57.0	28.0	28.0	28.0	28.0	28.0	
Total Split (%)	55.3%	55.3%	55.3%	11.8%	67.1%	67.1%	32.9%	32.9%	32.9%	32.9%	32.9%	
Maximum Green (s)	43.0	43.0	43.0	7.0	53.0	53.0	24.0	24.0	24.0	24.0	24.0	
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	
All-Red Time (s)	1.0	1.0	1.0	0.0	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		0.0	
Total Lost Time (s)	4.0	4.0	4.0	3.0	4.0	4.0		4.0	4.0		4.0	
Lead/Lag	Lag	Lag	Lag	Lead								
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	6.0	6.0	6.0	6.0	6.0	
Recall Mode	C-Max	C-Max	C-Max	None	C-Max	C-Max	None	None	None	None	None	
Act Effct Green (s)	57.0	57.0	57.0	65.7	65.5	65.5		15.2	15.2			
Actuated g/C Ratio	0.67	0.67	0.67	0.77	0.77	0.77		0.18	0.18			
v/c Ratio	0.00	0.39	0.03	0.21	0.24	0.00		0.21	0.47			
Control Delay	9.0	9.5	8.5	4.8	4.3	4.0		30.4	36.5			
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0			
Total Delay	9.0	9.5	8.5	4.8	4.3	4.0		30.4	36.5			
LOS	A	A	A	A	A	A		C	D			
Approach Delay		9.5			4.3			34.8				
Approach LOS		A			A			C				
90th %ile Green (s)	44.9	44.9	44.9	8.9	56.8	56.8	20.2	20.2	20.2	20.2	20.2	
90th %ile Term Code	Coord	Coord	Coord	Gap	Coord	Coord	Gap	Gap	Gap	Hold	Hold	
70th %ile Green (s)	49.2	49.2	49.2	7.6	59.8	59.8	17.2	17.2	17.2	17.2	17.2	
70th %ile Term Code	Coord	Coord	Coord	Gap	Coord	Coord	Gap	Gap	Gap	Hold	Hold	
50th %ile Green (s)	51.8	51.8	51.8	7.0	61.8	61.8	15.2	15.2	15.2	15.2	15.2	
50th %ile Term Code	Coord	Coord	Coord	Min	Coord	Coord	Gap	Gap	Gap	Hold	Hold	
30th %ile Green (s)	53.9	53.9	53.9	7.0	63.9	63.9	13.1	13.1	13.1	13.1	13.1	
30th %ile Term Code	Coord	Coord	Coord	Min	Coord	Coord	Gap	Gap	Gap	Hold	Hold	
10th %ile Green (s)	81.0	81.0	81.0	0.0	81.0	81.0	0.0	0.0	0.0	0.0	0.0	
10th %ile Term Code	Coord	Coord	Coord	Skip	Coord	Coord	Skip	Skip	Skip	Skip	Skip	
Stops (vph)	1	379	14	26	170	1		39	105			
Fuel Used(gal)	0	36	1	1	8	0		1	2			
CO Emissions (g/hr)	3	2530	97	88	550	1		39	112			
NOx Emissions (g/hr)	1	492	19	17	107	0		8	22			
VOC Emissions (g/hr)	1	586	23	20	128	0		9	26			
Dilemma Vehicles (#)	0	41	0	0	31	0		0	0			
Queue Length 50th (ft)	0	114	6	12	48	0		23	61			
Queue Length 95th (ft)	3	192	21	31	85	2		51	106			
Internal Link Dist (ft)		5263			1090			54			251	
Turn Bay Length (ft)	165		165	165		165						
Base Capacity (vph)	500	2224	1025	474	2556	1178		384	423			
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	0.00	0.39	0.03	0.21	0.24	0.00		0.13	0.30			

Intersection Summary	
Area Type:	Other

Cycle Length: 85	
Actuated Cycle Length: 85	
Offset: 0 (0%), Referenced to phase 4:EBTL and 8:WBTL, Start of Green	
Natural Cycle: 70	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.47	
Intersection Signal Delay: 9.9	Intersection LOS: A
Intersection Capacity Utilization 86.7%	ICU Level of Service E
Analysis Period (min) 15	

Splits and Phases: 1: Ellis Avenue & 130th Street

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	0	27	144	2	0	126
Future Volume (vph)	0	27	144	2	0	126
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Lane Util. Factor	1.00	1.00	0.95	0.95	1.00	0.95
Frt		0.865	0.998			
Flt Protected						
Satd. Flow (prot)	0	1557	3413	0	0	3420
Flt Permitted						
Satd. Flow (perm)	0	1557	3413	0	0	3420
Link Speed (mph)	30		30			30
Link Distance (ft)	602		184			134
Travel Time (s)	13.7		4.2			3.0
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%
Adj. Flow (vph)	0	30	160	2	0	140
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	30	162	0	0	140
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(ft)	0		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
Turning Speed (mph)	15	9		9	15	
Sign Control	Stop		Free			Free

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 14.3%		ICU Level of Service A	
Analysis Period (min) 15			

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	0	27	144	2	0	126
Future Volume (Veh/h)	0	27	144	2	0	126
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	0	30	160	2	0	140
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type			None			None
Median storage veh)						
Upstream signal (ft)						134
pX, platoon unblocked						
vC, conflicting volume	231	81			162	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	231	81			162	
tC, single (s)	6.8	6.9			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	100	97			100	
cM capacity (veh/h)	742	969			1429	

Direction, Lane #	WB 1	NB 1	NB 2	SB 1	SB 2
Volume Total	30	107	55	70	70
Volume Left	0	0	0	0	0
Volume Right	30	0	2	0	0
cSH	969	1700	1700	1700	1700
Volume to Capacity	0.03	0.06	0.03	0.04	0.04
Queue Length 95th (ft)	2	0	0	0	0
Control Delay (s)	8.8	0.0	0.0	0.0	0.0
Lane LOS	A				
Approach Delay (s)	8.8	0.0		0.0	
Approach LOS	A				

Intersection Summary			
Average Delay	0.8		
Intersection Capacity Utilization	14.3%	ICU Level of Service	A
Analysis Period (min)	15		

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL
Lane Configurations												
Traffic Volume (vph)	9	1	4	2	1	17	1	2	154	2	6	23
Future Volume (vph)	9	1	4	2	1	17	1	2	154	2	6	23
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
Ped Bike Factor												
Frt		0.964			0.883				0.998			
Flt Protected		0.968			0.995				0.999			
Satd. Flow (prot)	0	1680	0	0	1581	0	0	0	1744	0	0	0
Flt Permitted		0.968			0.995				0.999			
Satd. Flow (perm)	0	1680	0	0	1581	0	0	0	1744	0	0	0
Link Speed (mph)		30			30				30			
Link Distance (ft)		472			392				265			
Travel Time (s)		10.7			8.9				6.0			
Confl. Peds. (#/hr)						43				43		43
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	0%	0%	3%	0%	0%	4%
Adj. Flow (vph)	10	1	4	2	1	19	1	2	171	2	7	26
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	15	0	0	22	0	0	0	176	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	R NA	Left	Left	Right	R NA	Left
Median Width(ft)		0			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)	15		9	15		9	9	15		9	9	15
Sign Control		Stop			Stop				Free			

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 40.1%		ICU Level of Service A	
Analysis Period (min) 15			

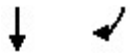
Lane Group	SBT	SBR
Lane Configurations		
Traffic Volume (vph)	90	8
Future Volume (vph)	90	8
Ideal Flow (vphpl)	1800	1800
Lane Util. Factor	1.00	1.00
Ped Bike Factor		
Frt		0.850
Flt Protected	0.988	
Satd. Flow (prot)	1752	1530
Flt Permitted	0.988	
Satd. Flow (perm)	1752	1530
Link Speed (mph)	30	
Link Distance (ft)	184	
Travel Time (s)	4.2	
Confl. Peds. (#/hr)		
Peak Hour Factor	0.90	0.90
Heavy Vehicles (%)	1%	0%
Adj. Flow (vph)	100	9
Shared Lane Traffic (%)		
Lane Group Flow (vph)	133	9
Enter Blocked Intersection	No	No
Lane Alignment	Left	Right
Median Width(ft)	0	
Link Offset(ft)	0	
Crosswalk Width(ft)	16	
Two way Left Turn Lane		
Headway Factor	1.07	1.07
Turning Speed (mph)		9
Sign Control	Free	

Intersection Summary

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL
Lane Configurations												
Traffic Volume (veh/h)	9	1	4	2	1	17	1	2	154	2	6	23
Future Volume (Veh/h)	9	1	4	2	1	17	1	2	154	2	6	23
Sign Control		Stop			Stop				Free			
Grade		0%			0%				0%			
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	10	1	4	2	1	19	0	2	171	2	0	26
Pedestrians					43							
Lane Width (ft)					12.0							
Walking Speed (ft/s)					4.0							
Percent Blockage					4							
Right turn flare (veh)												
Median type									None			
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked							0.00				0.00	
vC, conflicting volume	390	372	100	376	380	258	0	109			0	216
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	390	372	100	376	380	258	0	109			0	216
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	0.0	4.1			0.0	4.1
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	0.0	2.2			0.0	2.2
p0 queue free %	98	100	100	100	100	97	0	100			0	98
cM capacity (veh/h)	513	530	961	537	524	730	0	1494			0	1294

Direction, Lane #	EB 1	WB 1	NB 1	SB 1	SB 2
Volume Total	15	22	175	126	9
Volume Left	10	2	2	26	0
Volume Right	4	19	2	0	9
cSH	588	695	1494	1294	1700
Volume to Capacity	0.03	0.03	0.00	0.02	0.01
Queue Length 95th (ft)	2	2	0	2	0
Control Delay (s)	11.3	10.3	0.1	1.8	0.0
Lane LOS	B	B	A	A	
Approach Delay (s)	11.3	10.3	0.1	1.6	
Approach LOS	B	B			

Intersection Summary				
Average Delay	1.8			
Intersection Capacity Utilization	40.1%	ICU Level of Service		A
Analysis Period (min)	15			



Movement	SBT	SBR
Lane Configurations		
Traffic Volume (veh/h)	90	8
Future Volume (Veh/h)	90	8
Sign Control	Free	
Grade	0%	
Peak Hour Factor	0.90	0.90
Hourly flow rate (vph)	100	9
Pedestrians	43	
Lane Width (ft)	12.0	
Walking Speed (ft/s)	4.0	
Percent Blockage	4	
Right turn flare (veh)		
Median type	None	
Median storage veh)		
Upstream signal (ft)	318	
pX, platoon unblocked		
vC, conflicting volume		
vC1, stage 1 conf vol		
vC2, stage 2 conf vol		
vCu, unblocked vol		
tC, single (s)		
tC, 2 stage (s)		
tF (s)		
p0 queue free %		
cM capacity (veh/h)		
Direction, Lane #		

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	0	0	18	0	1	29
Future Volume (vph)	0	0	18	0	1	29
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt						
Flt Protected						0.998
Satd. Flow (prot)	1765	0	1765	0	0	1761
Flt Permitted						0.998
Satd. Flow (perm)	1765	0	1765	0	0	1761
Link Speed (mph)	30		30			30
Link Distance (ft)	280		286			308
Travel Time (s)	6.4		6.5			7.0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	20	0	1	32
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	0	20	0	0	33
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
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
Turning Speed (mph)	15	9		9	15	
Sign Control	Stop		Free			Free

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 6.7%		ICU Level of Service A	
Analysis Period (min) 15			

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	0	0	18	0	1	29
Future Volume (Veh/h)	0	0	18	0	1	29
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	0	20	0	1	32
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type			None			None
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	54	20			20	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	54	20			20	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	100	100			100	
cM capacity (veh/h)	953	1058			1596	

Direction, Lane #	WB 1	NB 1	SB 1
Volume Total	0	20	33
Volume Left	0	0	1
Volume Right	0	0	0
cSH	1700	1700	1596
Volume to Capacity	0.00	0.01	0.00
Queue Length 95th (ft)	0	0	0
Control Delay (s)	0.0	0.0	0.2
Lane LOS	A		A
Approach Delay (s)	0.0	0.0	0.2
Approach LOS	A		

Intersection Summary			
Average Delay	0.1		
Intersection Capacity Utilization	6.7%	ICU Level of Service	A
Analysis Period (min)	15		

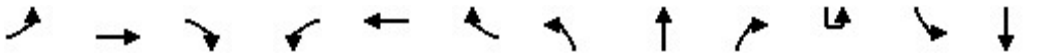
Lane Group	WBL	WBR	NBT	NBR	SBU	SBL	SBT
Lane Configurations							
Traffic Volume (vph)	0	0	12	0	1	0	20
Future Volume (vph)	0	0	12	0	1	0	20
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt							
Flt Protected							0.998
Satd. Flow (prot)	1800	0	1800	0	0	0	1730
Flt Permitted							0.998
Satd. Flow (perm)	1800	0	1800	0	0	0	1730
Link Speed (mph)	30		30				30
Link Distance (ft)	396		262				692
Travel Time (s)	9.0		6.0				15.7
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	4%
Adj. Flow (vph)	0	0	13	0	1	0	21
Shared Lane Traffic (%)							
Lane Group Flow (vph)	0	0	13	0	0	0	22
Enter Blocked Intersection	No	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	R NA	Left	Left
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
Turning Speed (mph)	15	9		9	9	15	
Sign Control	Stop		Free				Free

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 6.7%		ICU Level of Service A	
Analysis Period (min) 15			

Movement	WBL	WBR	NBT	NBR	SBU	SBL	SBT
Lane Configurations							
Traffic Volume (veh/h)	0	0	12	0	1	0	20
Future Volume (Veh/h)	0	0	12	0	1	0	20
Sign Control	Stop		Free				Free
Grade	0%		0%				0%
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Hourly flow rate (vph)	0	0	13	0	0	0	21
Pedestrians							
Lane Width (ft)							
Walking Speed (ft/s)							
Percent Blockage							
Right turn flare (veh)							
Median type			None				None
Median storage veh)							
Upstream signal (ft)							
pX, platoon unblocked					0.00		
vC, conflicting volume	34	13			0	13	
vC1, stage 1 conf vol							
vC2, stage 2 conf vol							
vCu, unblocked vol	34	13			0	13	
tC, single (s)	6.4	6.2			0.0	4.1	
tC, 2 stage (s)							
tF (s)	3.5	3.3			0.0	2.2	
p0 queue free %	100	100			0	100	
cM capacity (veh/h)	984	1073			0	1619	

Direction, Lane #	WB 1	NB 1	SB 1
Volume Total	0	13	21
Volume Left	0	0	0
Volume Right	0	0	0
cSH	1700	1700	1619
Volume to Capacity	0.00	0.01	0.00
Queue Length 95th (ft)	0	0	0
Control Delay (s)	0.0	0.0	0.0
Lane LOS	A		
Approach Delay (s)	0.0	0.0	0.0
Approach LOS	A		

Intersection Summary			
Average Delay	0.0		
Intersection Capacity Utilization	6.7%	ICU Level of Service	A
Analysis Period (min)	15		

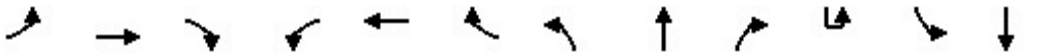


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBU	SBL	SBT
Lane Configurations												
Traffic Volume (vph)	2	0	5	0	0	0	1	7	0	1	0	14
Future Volume (vph)	2	0	5	0	0	0	1	7	0	1	0	14
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.899										0.992
Flt Protected		0.988						0.994				0.997
Satd. Flow (prot)	0	1599	0	0	1800	0	0	1789	0	0	0	1780
Flt Permitted		0.988						0.994				0.997
Satd. Flow (perm)	0	1599	0	0	1800	0	0	1789	0	0	0	1780
Link Speed (mph)		30			30			30				30
Link Distance (ft)		274			1039			274				262
Travel Time (s)		6.2			23.6			6.2				6.0
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Adj. Flow (vph)	2	0	6	0	0	0	1	8	0	1	0	16
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	8	0	0	0	0	0	9	0	0	0	18
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	R NA	Left	Left
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	1.07	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	9	15	
Sign Control		Stop			Stop			Free				Free

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 13.3%		ICU Level of Service A	
Analysis Period (min) 15			

Lane Group	SBR
Lane Configurations	
Traffic Volume (vph)	1
Future Volume (vph)	1
Ideal Flow (vphpl)	1800
Lane Util. Factor	1.00
Frt	
Flt Protected	
Satd. Flow (prot)	0
Flt Permitted	
Satd. Flow (perm)	0
Link Speed (mph)	
Link Distance (ft)	
Travel Time (s)	
Peak Hour Factor	0.90
Heavy Vehicles (%)	0%
Adj. Flow (vph)	1
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
Sign Control	

Intersection Summary



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBU	SBL	SBT
Lane Configurations												
Traffic Volume (veh/h)	2	0	5	0	0	0	1	7	0	1	0	14
Future Volume (Veh/h)	2	0	5	0	0	0	1	7	0	1	0	14
Sign Control		Stop			Stop			Free				Free
Grade		0%			0%			0%				0%
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	2	0	6	0	0	0	1	8	0	0	0	16
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None				None
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked										0.00		
vC, conflicting volume	26	26	16	32	27	8	17			0	8	
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	26	26	16	32	27	8	17			0	8	
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			0.0	4.1	
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			0.0	2.2	
p0 queue free %	100	100	99	100	100	100	100			0	100	
cM capacity (veh/h)	988	870	1068	974	870	1080	1613			0	1625	

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	8	0	9	17
Volume Left	2	0	1	0
Volume Right	6	0	0	1
cSH	1047	1700	1613	1625
Volume to Capacity	0.01	0.00	0.00	0.00
Queue Length 95th (ft)	1	0	0	0
Control Delay (s)	8.5	0.0	0.8	0.0
Lane LOS	A	A	A	
Approach Delay (s)	8.5	0.0	0.8	0.0
Approach LOS	A	A		

Intersection Summary				
Average Delay	2.2			
Intersection Capacity Utilization	13.3%	ICU Level of Service	A	
Analysis Period (min)	15			

Movement	SBR
Lane Configurations	
Traffic Volume (veh/h)	1
Future Volume (Veh/h)	1
Sign Control	
Grade	
Peak Hour Factor	0.90
Hourly flow rate (vph)	1
Pedestrians	
Lane Width (ft)	
Walking Speed (ft/s)	
Percent Blockage	
Right turn flare (veh)	
Median type	
Median storage veh)	
Upstream signal (ft)	
pX, platoon unblocked	
vC, conflicting volume	
vC1, stage 1 conf vol	
vC2, stage 2 conf vol	
vCu, unblocked vol	
tC, single (s)	
tC, 2 stage (s)	
tF (s)	
p0 queue free %	
cM capacity (veh/h)	
Direction, Lane #	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	SEU	SEL	SET	SER	NWL	NWT
Lane Configurations												
Traffic Volume (vph)	2	0	5	0	0	0	1	0	14	1	0	0
Future Volume (vph)	2	0	5	0	0	0	1	0	14	1	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
Frt		0.899							0.992			
Flt Protected		0.988							0.997			
Satd. Flow (prot)	0	1599	0	0	1800	0	0	0	1780	0	0	1800
Flt Permitted		0.988							0.997			
Satd. Flow (perm)	0	1599	0	0	1800	0	0	0	1780	0	0	1800
Link Speed (mph)		30			30				15			15
Link Distance (ft)		1039			253				374			412
Travel Time (s)		23.6			5.8				17.0			18.7
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Adj. Flow (vph)	2	0	6	0	0	0	1	0	16	1	0	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	8	0	0	0	0	0	0	18	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	R NA	Left	Left	Right	Left	Left
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	1.07	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	9	15		9	15	
Sign Control		Free			Free				Stop			Stop

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 13.3%		ICU Level of Service A	
Analysis Period (min) 15			

Lane Group	NWR
Lane Configurations	
Traffic Volume (vph)	0
Future Volume (vph)	0
Ideal Flow (vphpl)	1800
Lane Util. Factor	1.00
Frt	
Flt Protected	
Satd. Flow (prot)	0
Flt Permitted	
Satd. Flow (perm)	0
Link Speed (mph)	
Link Distance (ft)	
Travel Time (s)	
Peak Hour Factor	0.90
Heavy Vehicles (%)	0%
Adj. Flow (vph)	0
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
Sign Control	

Intersection Summary

Movement	EBL	EBT	EBR	WBL	WBT	WBR	SEU	SEL	SET	SER	NWL	NWT
Lane Configurations												
Traffic Volume (veh/h)	2	0	5	0	0	0	1	0	14	1	0	0
Future Volume (Veh/h)	2	0	5	0	0	0	1	0	14	1	0	0
Sign Control		Free			Free				Stop			Stop
Grade		0%			0%				0%			0%
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	2	0	6	0	0	0	0	0	16	1	0	0
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked							0.00					
vC, conflicting volume	0			6			0	7	10	0	16	7
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	0			6			0	7	10	0	16	7
tC, single (s)	4.1			4.1			0.0	7.1	6.5	6.2	7.1	6.5
tC, 2 stage (s)												
tF (s)	2.2			2.2			0.0	3.5	4.0	3.3	3.5	4.0
p0 queue free %	100			100			0	100	98	100	100	100
cM capacity (veh/h)	1636			1628			0	1017	888	1091	989	891

Direction, Lane #	EB 1	WB 1	SE 1	NW 1
Volume Total	8	0	17	0
Volume Left	2	0	0	0
Volume Right	6	0	1	0
cSH	1636	1700	898	1700
Volume to Capacity	0.00	0.00	0.02	0.00
Queue Length 95th (ft)	0	0	1	0
Control Delay (s)	1.8	0.0	9.1	0.0
Lane LOS	A		A	A
Approach Delay (s)	1.8	0.0	9.1	0.0
Approach LOS			A	A

Intersection Summary				
Average Delay	6.8			
Intersection Capacity Utilization	13.3%	ICU Level of Service	A	
Analysis Period (min)	15			

Movement	NWR
Lane Configurations	
Traffic Volume (veh/h)	0
Future Volume (Veh/h)	0
Sign Control	
Grade	
Peak Hour Factor	0.90
Hourly flow rate (vph)	0
Pedestrians	
Lane Width (ft)	
Walking Speed (ft/s)	
Percent Blockage	
Right turn flare (veh)	
Median type	
Median storage veh)	
Upstream signal (ft)	
pX, platoon unblocked	
vC, conflicting volume	3
vC1, stage 1 conf vol	
vC2, stage 2 conf vol	
vCu, unblocked vol	3
tC, single (s)	6.2
tC, 2 stage (s)	
tF (s)	3.3
p0 queue free %	100
cM capacity (veh/h)	1087
Direction, Lane #	

Lane Group	EBU	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations												
Traffic Volume (vph)	1	2	0	1	0	0	0	1	3	0	0	2
Future Volume (vph)	1	2	0	1	0	0	0	1	3	0	0	2
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
Frt			0.966									
Flt Protected			0.964						0.988			
Satd. Flow (prot)	0	0	1643	0	0	1765	0	0	1744	0	0	1765
Flt Permitted			0.964						0.988			
Satd. Flow (perm)	0	0	1643	0	0	1765	0	0	1744	0	0	1765
Link Speed (mph)			30			30			30			30
Link Distance (ft)			288			303			294			228
Travel Time (s)			6.5			6.9			6.7			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
Adj. Flow (vph)	1	2	0	1	0	0	0	1	3	0	0	2
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	0	4	0	0	0	0	0	4	0	0	2
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	R NA	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left
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	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07
Turning Speed (mph)	9	15		9	15		9	15		9	15	
Sign Control			Stop			Stop			Free			Free

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 13.3%		ICU Level of Service A	
Analysis Period (min) 15			

Lane Group	SBR
Lane Configurations	
Traffic Volume (vph)	0
Future Volume (vph)	0
Ideal Flow (vphpl)	1800
Lane Util. Factor	1.00
Frt	
Flt Protected	
Satd. Flow (prot)	0
Flt Permitted	
Satd. Flow (perm)	0
Link Speed (mph)	
Link Distance (ft)	
Travel Time (s)	
Peak Hour Factor	0.92
Adj. Flow (vph)	0
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
Sign Control	

Intersection Summary

Movement	EBU	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations												
Traffic Volume (veh/h)	1	2	0	1	0	0	0	1	3	0	0	2
Future Volume (Veh/h)	1	2	0	1	0	0	0	1	3	0	0	2
Sign Control			Stop			Stop			Free			Free
Grade			0%			0%			0%			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
Hourly flow rate (vph)	0	2	0	1	0	0	0	1	3	0	0	2
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type									None			None
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked	0.00											
vC, conflicting volume	0	7	7	2	8	7	3	2			3	
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	0	7	7	2	8	7	3	2			3	
tC, single (s)	0.0	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1	
tC, 2 stage (s)												
tF (s)	0.0	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2	
p0 queue free %	0	100	100	100	100	100	100	100			100	
cM capacity (veh/h)	0	1012	888	1082	1010	888	1081	1620			1619	

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	3	0	4	2
Volume Left	2	0	1	0
Volume Right	1	0	0	0
cSH	1035	1700	1620	1700
Volume to Capacity	0.00	0.00	0.00	0.00
Queue Length 95th (ft)	0	0	0	0
Control Delay (s)	8.5	0.0	1.8	0.0
Lane LOS	A	A	A	
Approach Delay (s)	8.5	0.0	1.8	0.0
Approach LOS	A	A		

Intersection Summary				
Average Delay	3.6			
Intersection Capacity Utilization	13.3%	ICU Level of Service	A	
Analysis Period (min)	15			

Movement	SBR
Lane Configurations	
Traffic Volume (veh/h)	0
Future Volume (Veh/h)	0
Sign Control	
Grade	
Peak Hour Factor	0.92
Hourly flow rate (vph)	0
Pedestrians	
Lane Width (ft)	
Walking Speed (ft/s)	
Percent Blockage	
Right turn flare (veh)	
Median type	
Median storage veh)	
Upstream signal (ft)	
pX, platoon unblocked	
vC, conflicting volume	
vC1, stage 1 conf vol	
vC2, stage 2 conf vol	
vCu, unblocked vol	
tC, single (s)	
tC, 2 stage (s)	
tF (s)	
p0 queue free %	
cM capacity (veh/h)	
Direction, Lane #	

HCS7 Freeway Diverge Report

Project Information			
Analyst	TranSmart	Date	9/24/2020
Agency	CTA	Analysis Year	Existing
Jurisdiction	Cook County	Time Period Analyzed	AM Peak
Project Description	Red Line Extension - EB 130th Street Entrance Ramp to EB I-94	Unit	United States Customary

Geometric Data		
	Freeway	Ramp
Number of Lanes (N), ln	2	1
Free-Flow Speed (FFS), mi/h	45.0	40.0
Segment Length (L) / Deceleration Length (LA),ft	1610	310
Terrain Type	Level	Level
Percent Grade, %	-	-
Segment Type / Ramp Type	Freeway	Right-Sided One-Lane

Adjustment Factors		
Driver Population	All Familiar	All Familiar
Weather Type	Non-Severe Weather	Non-Severe Weather
Incident Type	No Incident	-
Final Speed Adjustment Factor (SAF)	1.000	1.000
Final Capacity Adjustment Factor (CAF)	1.000	1.000
Demand Adjustment Factor (DAF)	1.000	1.000

Demand and Capacity		
Demand Volume (Vi)	599	248
Peak Hour Factor (PHF)	0.90	0.90
Total Trucks, %	5.50	7.60
Single-Unit Trucks (SUT), %	-	-
Tractor-Trailers (TT), %	-	-
Heavy Vehicle Adjustment Factor (fHV)	0.948	0.929
Flow Rate (vi),pc/h	702	297
Capacity (c), pc/h	4500	2000
Volume-to-Capacity Ratio (v/c)	0.16	0.15

Speed and Density			
Upstream Equilibrium Distance (LEQ), ft	-	Number of Outer Lanes on Freeway (NO)	0
Distance to Upstream Ramp (LUP), ft	-	Speed Index (DS)	0.390
Downstream Equilibrium Distance (LEQ), ft	-	Flow Outer Lanes (vOA), pc/h/ln	-
Distance to Downstream Ramp (LDOWN), ft	-	Off-Ramp Influence Area Speed (SR), mi/h	43.8
Prop. Freeway Vehicles in Lane 1 and 2 (PFD)	1.000	Outer Lanes Freeway Speed (SO), mi/h	49.4
Flow in Lanes 1 and 2 (v12), pc/h	702	Ramp Junction Speed (S), mi/h	43.8
Flow Entering Ramp-Infl. Area (vR12), pc/h	-	Average Density (D), pc/mi/ln	8.0
Level of Service (LOS)	A	Density in Ramp Influence Area (DR), pc/mi/ln	7.5

HCS7 Freeway Weaving Report

Project Information

Analyst	TranSmart	Date	9/28/2020
Agency	CTA	Analysis Year	Existing
Jurisdiction	Cook County	Time Period Analyzed	AM Peak
Project Description	Red Line Extension - EB Weaving Segment	Unit	United States Customary

Geometric Data

Number of Lanes (N), ln	2	Segment Type	Freeway
Segment Length (L_S), ft	750	Number of Maneuver Lanes (N_{WL}), ln	2
Weaving Configuration	One-Sided	Ramp-to-Freeway Lane Changes (LC_{RF}), lc	1
Terrain Type	Level	Freeway-to-Ramp Lane Changes (LC_{FR}), lc	1
Percent Grade, %	-	Ramp-to-Ramp Lane Changes (LC_{RR}), lc	0
Interchange Density (ID), int/mi	0.67	Cross Weaving Managed Lane	No

Adjustment Factors

Driver Population	All Familiar	Final Speed Adjustment Factor (SAF)	1.000
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	1.000
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

	FF	RF	RR	FR
Demand Volume (V_i), veh/h	119	288	0	232
Peak Hour Factor (PHF)	0.90	0.90	0.90	0.90
Total Trucks, %	5.50	15.40	0.00	7.10
Heavy Vehicle Adjustment Factor (f_{HV})	0.948	0.867	1.000	0.934
Flow Rate (v_i), pc/h	139	369	0	276
Weaving Flow Rate (v_w), pc/h	645	Freeway Max Capacity (c_{IFL}), pc/h/ln		2200
Non-Weaving Flow Rate (v_{NW}), pc/h	139	Density-Based Capacity (c_{IWL}), pc/h/ln		1352
Total Flow Rate (v), pc/h	784	Demand Flow-Based Capacity (c_{IW}), pc/h		2916
Volume Ratio (VR)	0.823	Weaving Segment Capacity (c_W), veh/h		2447
Minimum Lane Change Rate (LC_{MIN}), lc/h	645	Adjusted Weaving Area Capacity, pc/h		2704
Maximum Weaving Length (L_{MAX}), ft	11839	Volume-to-Capacity Ratio (v/c)		0.29

Speed and Density

Non-Weaving Vehicle Index (I_{NW})	7	Average Weaving Speed (S_W), mi/h	39.5
Non-Weaving Lane Change Rate (LC_{NW}), lc/h	50	Average Non-Weaving Speed (S_{NW}), mi/h	38.5
Weaving Lane Change Rate (LC_W), lc/h	695	Average Speed (S), mi/h	39.3
Weaving Lane Change Rate (LC_{All}), lc/h	745	Density (D), pc/mi/ln	10.0
Weaving Intensity Factor (W)	0.225	Level of Service (LOS)	A

HCS7 Freeway Merge Report

Project Information			
Analyst	TranSmart	Date	9/24/2020
Agency	CTA	Analysis Year	Existing
Jurisdiction	Cook County	Time Period Analyzed	AM Peak
Project Description	Red Line Extension - WB I-94 Exit Ramp to EB 130th Street	Unit	United States Customary

Geometric Data		
	Freeway	Ramp
Number of Lanes (N), ln	2	1
Free-Flow Speed (FFS), mi/h	45.0	40.0
Segment Length (L) / Acceleration Length (LA),ft	940	325
Terrain Type	Level	Level
Percent Grade, %	-	-
Segment Type / Ramp Type	Freeway	Right-Sided One-Lane

Adjustment Factors		
Driver Population	All Familiar	All Familiar
Weather Type	Non-Severe Weather	Non-Severe Weather
Incident Type	No Incident	-
Final Speed Adjustment Factor (SAF)	1.000	1.000
Final Capacity Adjustment Factor (CAF)	1.000	1.000
Demand Adjustment Factor (DAF)	1.000	1.000

Demand and Capacity		
Demand Volume (Vi)	407	425
Peak Hour Factor (PHF)	0.90	0.90
Total Trucks, %	14.00	40.30
Single-Unit Trucks (SUT), %	-	-
Tractor-Trailers (TT), %	-	-
Heavy Vehicle Adjustment Factor (fHV)	0.877	0.713
Flow Rate (vi),pc/h	516	662
Capacity (c), pc/h	4500	2000
Volume-to-Capacity Ratio (v/c)	0.26	0.33

Speed and Density			
Upstream Equilibrium Distance (LEQ), ft	-	Number of Outer Lanes on Freeway (NO)	0
Distance to Upstream Ramp (LUP), ft	-	Speed Index (MS)	0.308
Downstream Equilibrium Distance (LEQ), ft	-	Flow Outer Lanes (vOA), pc/h/ln	-
Distance to Downstream Ramp (LDOWN), ft	-	On-Ramp Influence Area Speed (SR), mi/h	44.1
Prop. Freeway Vehicles in Lane 1 and 2 (PFM)	1.000	Outer Lanes Freeway Speed (SO), mi/h	45.0
Flow in Lanes 1 and 2 (v12), pc/h	516	Ramp Junction Speed (S), mi/h	44.1
Flow Entering Ramp-Infl. Area (vR12), pc/h	1178	Average Density (D), pc/mi/ln	13.4
Level of Service (LOS)	B	Density in Ramp Influence Area (DR), pc/mi/ln	12.4

HCS7 Freeway Diverge Report

Project Information			
Analyst	TranSmart	Date	9/24/2020
Agency	CTA	Analysis Year	Existing
Jurisdiction	Cook County	Time Period Analyzed	AM Peak
Project Description	Red Line Extension - WB 130th Street Entrance Ramp to WB I-94	Unit	United States Customary

Geometric Data		
	Freeway	Ramp
Number of Lanes (N), ln	2	1
Free-Flow Speed (FFS), mi/h	45.0	45.0
Segment Length (L) / Deceleration Length (LA),ft	1885	525
Terrain Type	Level	Level
Percent Grade, %	-	-
Segment Type / Ramp Type	Freeway	Right-Sided One-Lane

Adjustment Factors		
Driver Population	All Familiar	All Familiar
Weather Type	Non-Severe Weather	Non-Severe Weather
Incident Type	No Incident	-
Final Speed Adjustment Factor (SAF)	1.000	1.000
Final Capacity Adjustment Factor (CAF)	1.000	1.000
Demand Adjustment Factor (DAF)	1.000	1.000

Demand and Capacity		
Demand Volume (Vi)	809	302
Peak Hour Factor (PHF)	0.95	0.90
Total Trucks, %	30.20	11.00
Single-Unit Trucks (SUT), %	-	-
Tractor-Trailers (TT), %	-	-
Heavy Vehicle Adjustment Factor (fHV)	0.768	0.901
Flow Rate (vi),pc/h	1109	372
Capacity (c), pc/h	4500	2100
Volume-to-Capacity Ratio (v/c)	0.25	0.18

Speed and Density			
Upstream Equilibrium Distance (LEQ), ft	-	Number of Outer Lanes on Freeway (NO)	0
Distance to Upstream Ramp (LUP), ft	-	Speed Index (DS)	0.331
Downstream Equilibrium Distance (LEQ), ft	-	Flow Outer Lanes (vOA), pc/h/ln	-
Distance to Downstream Ramp (LDOWN), ft	-	Off-Ramp Influence Area Speed (SR), mi/h	44.0
Prop. Freeway Vehicles in Lane 1 and 2 (PFD)	1.000	Outer Lanes Freeway Speed (SO), mi/h	49.4
Flow in Lanes 1 and 2 (v12), pc/h	1109	Ramp Junction Speed (S), mi/h	44.0
Flow Entering Ramp-Infl. Area (vR12), pc/h	-	Average Density (D), pc/mi/ln	12.6
Level of Service (LOS)	A	Density in Ramp Influence Area (DR), pc/mi/ln	9.1

HCS7 Freeway Weaving Report

Project Information

Analyst	TranSmart	Date	9/28/2020
Agency	CTA	Analysis Year	Existing
Jurisdiction	Cook County	Time Period Analyzed	AM Peak
Project Description	Red Line Extension - WB Weaving Segment	Unit	United States Customary

Geometric Data

Number of Lanes (N), ln	2	Segment Type	Freeway
Segment Length (L_S), ft	570	Number of Maneuver Lanes (N_{WL}), ln	2
Weaving Configuration	One-Sided	Ramp-to-Freeway Lane Changes (LC_{RF}), lc	1
Terrain Type	Level	Freeway-to-Ramp Lane Changes (LC_{FR}), lc	1
Percent Grade, %	-	Ramp-to-Ramp Lane Changes (LC_{RR}), lc	0
Interchange Density (ID), int/mi	0.67	Cross Weaving Managed Lane	No

Adjustment Factors

Driver Population	All Familiar	Final Speed Adjustment Factor (SAF)	1.000
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	1.000
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

	FF	RF	RR	FR
Demand Volume (V_i), veh/h	188	335	0	319
Peak Hour Factor (PHF)	0.95	0.90	0.90	0.90
Total Trucks, %	30.20	11.70	0.00	43.60
Heavy Vehicle Adjustment Factor (f_{HV})	0.768	0.895	1.000	0.696
Flow Rate (v_i), pc/h	258	416	0	509
Weaving Flow Rate (v_w), pc/h	925	Freeway Max Capacity (c_{IFL}), pc/h/ln		2200
Non-Weaving Flow Rate (v_{NW}), pc/h	258	Density-Based Capacity (c_{IWL}), pc/h/ln		1379
Total Flow Rate (v), pc/h	1183	Demand Flow-Based Capacity (c_{IW}), pc/h		3069
Volume Ratio (VR)	0.782	Weaving Segment Capacity (c_W), veh/h		2155
Minimum Lane Change Rate (LC_{MIN}), lc/h	925	Adjusted Weaving Area Capacity, pc/h		2758
Maximum Weaving Length (L_{MAX}), ft	11304	Volume-to-Capacity Ratio (v/c)		0.43

Speed and Density

Non-Weaving Vehicle Index (I_{NW})	10	Average Weaving Speed (S_W), mi/h	37.4
Non-Weaving Lane Change Rate (LC_{NW}), lc/h	0	Average Non-Weaving Speed (S_{NW}), mi/h	35.5
Weaving Lane Change Rate (LC_W), lc/h	964	Average Speed (S), mi/h	37.0
Weaving Lane Change Rate (LC_{All}), lc/h	964	Density (D), pc/mi/ln	16.0
Weaving Intensity Factor (W)	0.342	Level of Service (LOS)	B

HCS7 Freeway Merge Report

Project Information			
Analyst	TranSmart	Date	9/24/2020
Agency	CTA	Analysis Year	Existing
Jurisdiction	Cook County	Time Period Analyzed	AM Peak
Project Description	Red Line Extension - EB I-94 Exit Ramp to WB 130th Street	Unit	United States Customary

Geometric Data		
	Freeway	Ramp
Number of Lanes (N), ln	2	1
Free-Flow Speed (FFS), mi/h	45.0	40.0
Segment Length (L) / Acceleration Length (LA),ft	850	340
Terrain Type	Level	Level
Percent Grade, %	-	-
Segment Type / Ramp Type	Freeway	Right-Sided One-Lane

Adjustment Factors		
Driver Population	All Familiar	All Familiar
Weather Type	Non-Severe Weather	Non-Severe Weather
Incident Type	No Incident	-
Final Speed Adjustment Factor (SAF)	1.000	1.000
Final Capacity Adjustment Factor (CAF)	1.000	1.000
Demand Adjustment Factor (DAF)	1.000	1.000

Demand and Capacity		
Demand Volume (Vi)	523	264
Peak Hour Factor (PHF)	0.95	0.90
Total Trucks, %	7.90	4.70
Single-Unit Trucks (SUT), %	-	-
Tractor-Trailers (TT), %	-	-
Heavy Vehicle Adjustment Factor (fHV)	0.927	0.955
Flow Rate (vi),pc/h	594	307
Capacity (c), pc/h	4500	2000
Volume-to-Capacity Ratio (v/c)	0.20	0.15

Speed and Density			
Upstream Equilibrium Distance (LEQ), ft	-	Number of Outer Lanes on Freeway (NO)	0
Distance to Upstream Ramp (LUP), ft	-	Speed Index (MS)	0.303
Downstream Equilibrium Distance (LEQ), ft	-	Flow Outer Lanes (vOA), pc/h/ln	-
Distance to Downstream Ramp (LDOWN), ft	-	On-Ramp Influence Area Speed (SR), mi/h	44.1
Prop. Freeway Vehicles in Lane 1 and 2 (PFM)	1.000	Outer Lanes Freeway Speed (SO), mi/h	45.0
Flow in Lanes 1 and 2 (v12), pc/h	594	Ramp Junction Speed (S), mi/h	44.1
Flow Entering Ramp-Infl. Area (vR12), pc/h	901	Average Density (D), pc/mi/ln	10.2
Level of Service (LOS)	B	Density in Ramp Influence Area (DR), pc/mi/ln	10.3

HCS7 Freeway Diverge Report

Project Information			
Analyst	TranSmart	Date	9/24/2020
Agency	CTA	Analysis Year	Existing
Jurisdiction	Cook County	Time Period Analyzed	PM Peak
Project Description	Red Line Extension - EB 130th Street Entrance Ramp to EB I-94	Unit	United States Customary

Geometric Data		
	Freeway	Ramp
Number of Lanes (N), ln	2	1
Free-Flow Speed (FFS), mi/h	45.0	40.0
Segment Length (L) / Deceleration Length (LA),ft	1610	310
Terrain Type	Level	Level
Percent Grade, %	-	-
Segment Type / Ramp Type	Freeway	Right-Sided One-Lane

Adjustment Factors		
Driver Population	All Familiar	All Familiar
Weather Type	Non-Severe Weather	Non-Severe Weather
Incident Type	No Incident	-
Final Speed Adjustment Factor (SAF)	1.000	1.000
Final Capacity Adjustment Factor (CAF)	1.000	1.000
Demand Adjustment Factor (DAF)	1.000	1.000

Demand and Capacity		
Demand Volume (V_i)	944	452
Peak Hour Factor (PHF)	0.90	0.90
Total Trucks, %	1.60	3.00
Single-Unit Trucks (SUT), %	-	-
Tractor-Trailers (TT), %	-	-
Heavy Vehicle Adjustment Factor (f_{HV})	0.984	0.971
Flow Rate (v_i),pc/h	1066	517
Capacity (c), pc/h	4500	2000
Volume-to-Capacity Ratio (v/c)	0.24	0.26

Speed and Density			
Upstream Equilibrium Distance (L_{EQ}), ft	-	Number of Outer Lanes on Freeway (N_O)	0
Distance to Upstream Ramp (L_{UP}), ft	-	Speed Index (D_S)	0.410
Downstream Equilibrium Distance (L_{EQ}), ft	-	Flow Outer Lanes (v_{OA}), pc/h/ln	-
Distance to Downstream Ramp (L_{DOWN}), ft	-	Off-Ramp Influence Area Speed (S_R), mi/h	43.8
Prop. Freeway Vehicles in Lane 1 and 2 (P_{FD})	1.000	Outer Lanes Freeway Speed (S_O), mi/h	49.4
Flow in Lanes 1 and 2 (v_{12}), pc/h	1066	Ramp Junction Speed (S), mi/h	43.8
Flow Entering Ramp-Infl. Area (v_{R12}), pc/h	-	Average Density (D), pc/mi/ln	12.2
Level of Service (LOS)	B	Density in Ramp Influence Area (D_R), pc/mi/ln	10.6

HCS7 Freeway Weaving Report

Project Information

Analyst	TranSmart	Date	9/28/2020
Agency	CTA	Analysis Year	Existing
Jurisdiction	Cook County	Time Period Analyzed	PM Peak
Project Description	Red Line Extension - EB Weaving Segment	Unit	United States Customary

Geometric Data

Number of Lanes (N), ln	2	Segment Type	Freeway
Segment Length (L_S), ft	750	Number of Maneuver Lanes (N_{WL}), ln	2
Weaving Configuration	One-Sided	Ramp-to-Freeway Lane Changes (LC_{RF}), lc	1
Terrain Type	Level	Freeway-to-Ramp Lane Changes (LC_{FR}), lc	1
Percent Grade, %	-	Ramp-to-Ramp Lane Changes (LC_{RR}), lc	0
Interchange Density (ID), int/mi	0.67	Cross Weaving Managed Lane	No

Adjustment Factors

Driver Population	All Familiar	Final Speed Adjustment Factor (SAF)	1.000
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	1.000
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

	FF	RF	RR	FR
Demand Volume (V_i), veh/h	222	377	0	270
Peak Hour Factor (PHF)	0.90	0.95	0.90	0.90
Total Trucks, %	1.60	2.70	0.00	3.20
Heavy Vehicle Adjustment Factor (f_{HV})	0.984	0.974	1.000	0.969
Flow Rate (v_i), pc/h	251	407	0	310
Weaving Flow Rate (v_w), pc/h	717	Freeway Max Capacity (c_{IFL}), pc/h/ln		2200
Non-Weaving Flow Rate (v_{NW}), pc/h	251	Density-Based Capacity (c_{IWL}), pc/h/ln		1433
Total Flow Rate (v), pc/h	968	Demand Flow-Based Capacity (c_{IW}), pc/h		3239
Volume Ratio (VR)	0.741	Weaving Segment Capacity (c_W), veh/h		2794
Minimum Lane Change Rate (LC_{MIN}), lc/h	717	Adjusted Weaving Area Capacity, pc/h		2866
Maximum Weaving Length (L_{MAX}), ft	10777	Volume-to-Capacity Ratio (v/c)		0.34

Speed and Density

Non-Weaving Vehicle Index (I_{NW})	13	Average Weaving Speed (S_W), mi/h	39.1
Non-Weaving Lane Change Rate (LC_{NW}), lc/h	73	Average Non-Weaving Speed (S_{NW}), mi/h	37.5
Weaving Lane Change Rate (LC_W), lc/h	767	Average Speed (S), mi/h	38.7
Weaving Lane Change Rate (LC_{All}), lc/h	840	Density (D), pc/mi/ln	12.5
Weaving Intensity Factor (W)	0.247	Level of Service (LOS)	B

HCS7 Freeway Merge Report

Project Information			
Analyst	TranSmart	Date	9/24/2020
Agency	CTA	Analysis Year	Existing
Jurisdiction	Cook County	Time Period Analyzed	PM Peak
Project Description	Red Line Extension - WB I-94 Exit Ramp to EB 130th Street	Unit	United States Customary

Geometric Data		
	Freeway	Ramp
Number of Lanes (N), ln	2	1
Free-Flow Speed (FFS), mi/h	45.0	40.0
Segment Length (L) / Acceleration Length (LA),ft	940	325
Terrain Type	Level	Level
Percent Grade, %	-	-
Segment Type / Ramp Type	Freeway	Right-Sided One-Lane

Adjustment Factors		
Driver Population	All Familiar	All Familiar
Weather Type	Non-Severe Weather	Non-Severe Weather
Incident Type	No Incident	-
Final Speed Adjustment Factor (SAF)	1.000	1.000
Final Capacity Adjustment Factor (CAF)	1.000	1.000
Demand Adjustment Factor (DAF)	1.000	1.000

Demand and Capacity		
Demand Volume (Vi)	599	601
Peak Hour Factor (PHF)	0.90	0.90
Total Trucks, %	1.30	6.20
Single-Unit Trucks (SUT), %	-	-
Tractor-Trailers (TT), %	-	-
Heavy Vehicle Adjustment Factor (fHV)	0.987	0.942
Flow Rate (vi),pc/h	674	709
Capacity (c), pc/h	4500	2000
Volume-to-Capacity Ratio (v/c)	0.31	0.35

Speed and Density			
Upstream Equilibrium Distance (LEQ), ft	-	Number of Outer Lanes on Freeway (NO)	0
Distance to Upstream Ramp (LUP), ft	-	Speed Index (MS)	0.311
Downstream Equilibrium Distance (LEQ), ft	-	Flow Outer Lanes (vOA), pc/h/ln	-
Distance to Downstream Ramp (LDOWN), ft	-	On-Ramp Influence Area Speed (SR), mi/h	44.1
Prop. Freeway Vehicles in Lane 1 and 2 (PFM)	1.000	Outer Lanes Freeway Speed (SO), mi/h	45.0
Flow in Lanes 1 and 2 (v12), pc/h	674	Ramp Junction Speed (S), mi/h	44.1
Flow Entering Ramp-Infl. Area (vR12), pc/h	1383	Average Density (D), pc/mi/ln	15.7
Level of Service (LOS)	B	Density in Ramp Influence Area (DR), pc/mi/ln	14.0

HCS7 Freeway Diverge Report

Project Information			
Analyst	TranSmart	Date	9/24/2020
Agency	CTA	Analysis Year	Existing
Jurisdiction	Cook County	Time Period Analyzed	PM Peak
Project Description	Red Line Extension - WB 130th Street Entrance Ramp to WB I-94	Unit	United States Customary

Geometric Data		
	Freeway	Ramp
Number of Lanes (N), ln	2	1
Free-Flow Speed (FFS), mi/h	45.0	45.0
Segment Length (L) / Deceleration Length (LA),ft	1885	525
Terrain Type	Level	Level
Percent Grade, %	-	-
Segment Type / Ramp Type	Freeway	Right-Sided One-Lane

Adjustment Factors		
Driver Population	All Familiar	All Familiar
Weather Type	Non-Severe Weather	Non-Severe Weather
Incident Type	No Incident	-
Final Speed Adjustment Factor (SAF)	1.000	1.000
Final Capacity Adjustment Factor (CAF)	1.000	1.000
Demand Adjustment Factor (DAF)	1.000	1.000

Demand and Capacity		
Demand Volume (V_i)	1146	395
Peak Hour Factor (PHF)	0.90	0.90
Total Trucks, %	9.60	2.50
Single-Unit Trucks (SUT), %	-	-
Tractor-Trailers (TT), %	-	-
Heavy Vehicle Adjustment Factor (f_{HV})	0.912	0.976
Flow Rate (v_i),pc/h	1396	450
Capacity (c), pc/h	4500	2100
Volume-to-Capacity Ratio (v/c)	0.31	0.21

Speed and Density			
Upstream Equilibrium Distance (L_{EQ}), ft	-	Number of Outer Lanes on Freeway (N_O)	0
Distance to Upstream Ramp (L_{UP}), ft	-	Speed Index (D_S)	0.338
Downstream Equilibrium Distance (L_{EQ}), ft	-	Flow Outer Lanes (v_{OA}), pc/h/ln	-
Distance to Downstream Ramp (L_{DOWN}), ft	-	Off-Ramp Influence Area Speed (S_R), mi/h	44.0
Prop. Freeway Vehicles in Lane 1 and 2 (P_{FD})	1.000	Outer Lanes Freeway Speed (S_O), mi/h	49.4
Flow in Lanes 1 and 2 (v_{12}), pc/h	1396	Ramp Junction Speed (S), mi/h	44.0
Flow Entering Ramp-Infl. Area (v_{R12}), pc/h	-	Average Density (D), pc/mi/ln	15.9
Level of Service (LOS)	B	Density in Ramp Influence Area (D_R), pc/mi/ln	11.5

HCS7 Freeway Weaving Report

Project Information

Analyst	TranSmart	Date	9/28/2020
Agency	CTA	Analysis Year	Existing
Jurisdiction	Cook County	Time Period Analyzed	PM Peak
Project Description	Red Line Extension - WB Weaving Segment	Unit	United States Customary

Geometric Data

Number of Lanes (N), ln	2	Segment Type	Freeway
Segment Length (L_S), ft	570	Number of Maneuver Lanes (N_{WL}), ln	2
Weaving Configuration	One-Sided	Ramp-to-Freeway Lane Changes (LC_{RF}), lc	1
Terrain Type	Level	Freeway-to-Ramp Lane Changes (LC_{FR}), lc	1
Percent Grade, %	-	Ramp-to-Ramp Lane Changes (LC_{RR}), lc	0
Interchange Density (ID), int/mi	0.67	Cross Weaving Managed Lane	No

Adjustment Factors

Driver Population	All Familiar	Final Speed Adjustment Factor (SAF)	1.000
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	1.000
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

	FF	RF	RR	FR
Demand Volume (V_i), veh/h	128	297	0	623
Peak Hour Factor (PHF)	0.90	0.90	0.90	0.90
Total Trucks, %	9.60	5.00	0.00	6.70
Heavy Vehicle Adjustment Factor (f_{HV})	0.912	0.952	1.000	0.937
Flow Rate (v_i), pc/h	156	347	0	739
Weaving Flow Rate (v_w), pc/h	1086	Freeway Max Capacity (c_{IFL}), pc/h/ln		2200
Non-Weaving Flow Rate (v_{NW}), pc/h	156	Density-Based Capacity (c_{IWL}), pc/h/ln		1286
Total Flow Rate (v), pc/h	1242	Demand Flow-Based Capacity (c_{IW}), pc/h		2746
Volume Ratio (VR)	0.874	Weaving Segment Capacity (c_W), veh/h		2413
Minimum Lane Change Rate (LC_{MIN}), lc/h	1086	Adjusted Weaving Area Capacity, pc/h		2572
Maximum Weaving Length (L_{MAX}), ft	12515	Volume-to-Capacity Ratio (v/c)		0.48

Speed and Density

Non-Weaving Vehicle Index (I_{NW})	6	Average Weaving Speed (S_W), mi/h	36.6
Non-Weaving Lane Change Rate (LC_{NW}), lc/h	0	Average Non-Weaving Speed (S_{NW}), mi/h	34.2
Weaving Lane Change Rate (LC_W), lc/h	1125	Average Speed (S), mi/h	36.3
Weaving Lane Change Rate (LC_{All}), lc/h	1125	Density (D), pc/mi/ln	17.1
Weaving Intensity Factor (W)	0.386	Level of Service (LOS)	B

HCS7 Freeway Merge Report

Project Information			
Analyst	TranSmart	Date	9/24/2020
Agency	CTA	Analysis Year	Existing
Jurisdiction	Cook County	Time Period Analyzed	PM Peak
Project Description	Red Line Extension - EB I-94 Exit Ramp to WB 130th Street	Unit	United States Customary

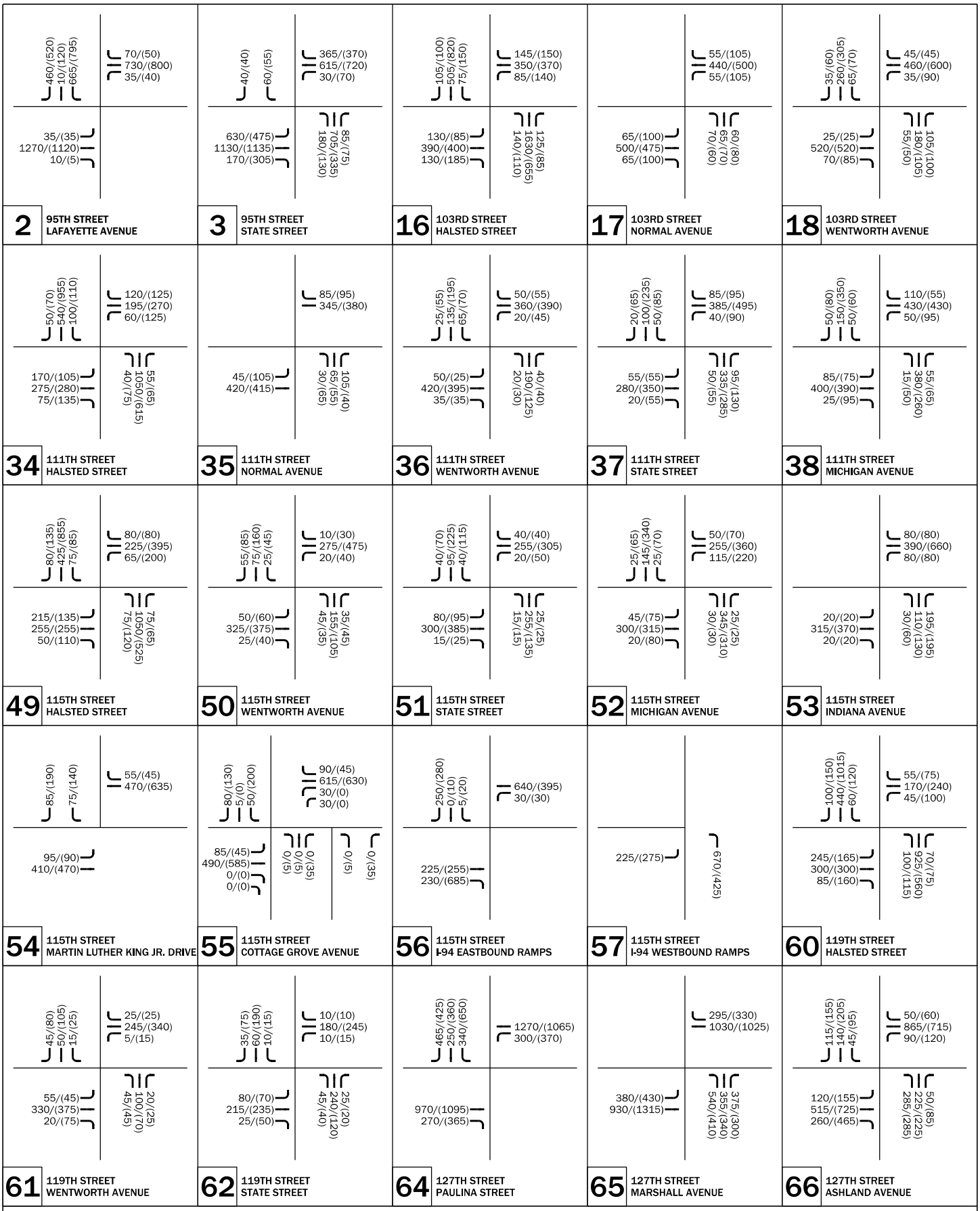
Geometric Data		
	Freeway	Ramp
Number of Lanes (N), ln	2	1
Free-Flow Speed (FFS), mi/h	45.0	40.0
Segment Length (L) / Acceleration Length (LA),ft	850	340
Terrain Type	Level	Level
Percent Grade, %	-	-
Segment Type / Ramp Type	Freeway	Right-Sided One-Lane

Adjustment Factors		
Driver Population	All Familiar	All Familiar
Weather Type	Non-Severe Weather	Non-Severe Weather
Incident Type	No Incident	-
Final Speed Adjustment Factor (SAF)	1.000	1.000
Final Capacity Adjustment Factor (CAF)	1.000	1.000
Demand Adjustment Factor (DAF)	1.000	1.000

Demand and Capacity		
Demand Volume (Vi)	425	257
Peak Hour Factor (PHF)	0.90	0.95
Total Trucks, %	1.80	2.70
Single-Unit Trucks (SUT), %	-	-
Tractor-Trailers (TT), %	-	-
Heavy Vehicle Adjustment Factor (fHV)	0.982	0.974
Flow Rate (vi),pc/h	481	278
Capacity (c), pc/h	4500	2000
Volume-to-Capacity Ratio (v/c)	0.17	0.14

Speed and Density			
Upstream Equilibrium Distance (LEQ), ft	-	Number of Outer Lanes on Freeway (NO)	0
Distance to Upstream Ramp (LUP), ft	-	Speed Index (MS)	0.302
Downstream Equilibrium Distance (LEQ), ft	-	Flow Outer Lanes (vOA), pc/h/ln	-
Distance to Downstream Ramp (LDOWN), ft	-	On-Ramp Influence Area Speed (SR), mi/h	44.1
Prop. Freeway Vehicles in Lane 1 and 2 (PFM)	1.000	Outer Lanes Freeway Speed (SO), mi/h	45.0
Flow in Lanes 1 and 2 (v12), pc/h	481	Ramp Junction Speed (S), mi/h	44.1
Flow Entering Ramp-Infl. Area (vR12), pc/h	759	Average Density (D), pc/mi/ln	8.6
Level of Service (LOS)	A	Density in Ramp Influence Area (DR), pc/mi/ln	9.2

Traffic Analysis – No Build Condition (2050)



NO-BUILD (2050) INTERSECTION TRAFFIC VOLUMES

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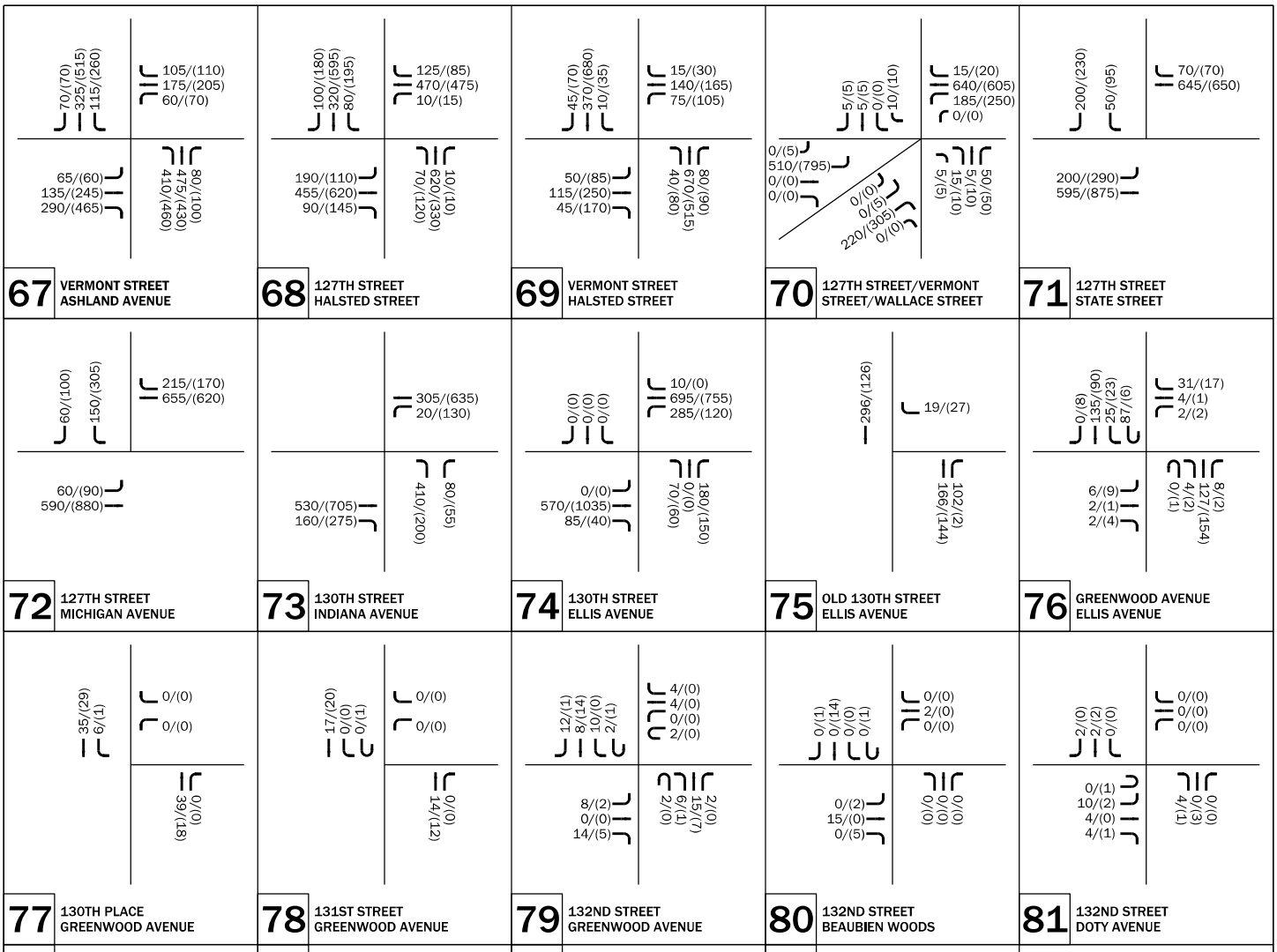
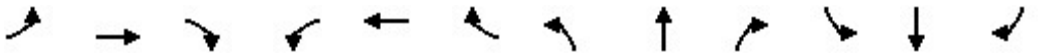


NO-BUILD (2050) INTERSECTION TRAFFIC VOLUMES

PAGE 2 OF 2

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	570	85	285	695	10	70	0	180	0	0	0
Future Volume (vph)	0	570	85	285	695	10	70	0	180	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	12	12	12	16	12
Storage Length (ft)	165		165	165		165	0		0	0		0
Storage Lanes	1		1	1		1	0		1	0		0
Taper Length (ft)	210			200			25			25		
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.850			0.850			0.850			
Flt Protected				0.950				0.950				
Satd. Flow (prot)	1800	3109	1471	1644	3138	1366	0	1449	1443	0	2040	0
Flt Permitted				0.366				0.757				
Satd. Flow (perm)	1800	3109	1471	633	3138	1366	0	1155	1443	0	2040	0
Right Turn on Red			No			No			No			No
Satd. Flow (RTOR)												
Link Speed (mph)		35			35			30			30	
Link Distance (ft)		5340			1172			141			331	
Travel Time (s)		104.0			22.8			3.2			7.5	
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Heavy Vehicles (%)	0%	10%	4%	4%	9%	12%	18%	0%	6%	100%	0%	0%
Adj. Flow (vph)	0	594	89	297	724	10	73	0	188	0	0	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	594	89	297	724	10	0	73	188	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)		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	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07	0.91	1.07
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	1	1	1	1	1	1	1	1	1	1	
Detector Template												
Leading Detector (ft)	50	50	50	50	50	50	50	50	50	50	50	
Trailing Detector (ft)	0	0	0	0	0	0	0	0	0	0	0	
Detector 1 Position(ft)	0	0	0	0	0	0	0	0	0	0	0	
Detector 1 Size(ft)	50	50	50	50	50	50	50	50	50	50	50	
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Turn Type	Perm	NA	Perm	pm+pt	NA	Perm	Perm	NA	Perm			
Protected Phases		4		3	8			2			6	
Permitted Phases	4		4	8		8	2		2	6		
Detector Phase	4	4	4	3	8	8	2	2	2	6	6	
Switch Phase												
Minimum Initial (s)	43.0	43.0	43.0	7.0	43.0	43.0	6.0	6.0	6.0	6.0	6.0	



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Minimum Split (s)	47.0	47.0	47.0	10.0	47.0	47.0	10.0	10.0	10.0	10.0	10.0	
Total Split (s)	47.0	47.0	47.0	10.0	57.0	57.0	28.0	28.0	28.0	28.0	28.0	
Total Split (%)	55.3%	55.3%	55.3%	11.8%	67.1%	67.1%	32.9%	32.9%	32.9%	32.9%	32.9%	
Maximum Green (s)	43.0	43.0	43.0	7.0	53.0	53.0	24.0	24.0	24.0	24.0	24.0	
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	
All-Red Time (s)	1.0	1.0	1.0	0.0	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		0.0	
Total Lost Time (s)	4.0	4.0	4.0	3.0	4.0	4.0		4.0	4.0		4.0	
Lead/Lag	Lag	Lag	Lag	Lead								
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	6.0	6.0	6.0	6.0	6.0	
Recall Mode	C-Max	C-Max	C-Max	None	C-Max	C-Max	None	None	None	None	None	
Act Effct Green (s)		46.4	46.4	59.4	58.4	58.4		18.6	18.6			
Actuated g/C Ratio		0.55	0.55	0.70	0.69	0.69		0.22	0.22			
v/c Ratio		0.35	0.11	0.54	0.34	0.01		0.29	0.59			
Control Delay		12.3	11.1	9.9	6.5	5.6		29.6	37.5			
Queue Delay		0.0	0.0	0.0	0.0	0.0		0.0	0.0			
Total Delay		12.3	11.1	9.9	6.5	5.6		29.6	37.5			
LOS		B	B	A	A	A		C	D			
Approach Delay		12.1			7.5			35.3				
Approach LOS		B			A			D				
90th %ile Green (s)	43.0	43.0	43.0	7.0	53.0	53.0	24.0	24.0	24.0	24.0	24.0	
90th %ile Term Code	Coord	Coord	Coord	Max	Coord	Coord	Max	Max	Max	Hold	Hold	
70th %ile Green (s)	43.0	43.0	43.0	9.6	55.6	55.6	21.4	21.4	21.4	21.4	21.4	
70th %ile Term Code	Coord	Coord	Coord	Max	Coord	Coord	Gap	Gap	Gap	Hold	Hold	
50th %ile Green (s)	43.9	43.9	43.9	11.2	58.1	58.1	18.9	18.9	18.9	18.9	18.9	
50th %ile Term Code	Coord	Coord	Coord	Gap	Coord	Coord	Gap	Gap	Gap	Hold	Hold	
30th %ile Green (s)	48.3	48.3	48.3	9.4	60.7	60.7	16.3	16.3	16.3	16.3	16.3	
30th %ile Term Code	Coord	Coord	Coord	Gap	Coord	Coord	Gap	Gap	Gap	Hold	Hold	
10th %ile Green (s)	54.0	54.0	54.0	7.5	64.5	64.5	12.5	12.5	12.5	12.5	12.5	
10th %ile Term Code	Coord	Coord	Coord	Gap	Coord	Coord	Gap	Gap	Gap	Hold	Hold	
Stops (vph)		310	42	104	269	5		58	161			
Fuel Used(gal)		26	4	4	10	0		1	2			
CO Emissions (g/hr)		1798	265	297	699	11		57	172			
NOx Emissions (g/hr)		350	51	58	136	2		11	33			
VOC Emissions (g/hr)		417	61	69	162	2		13	40			
Dilemma Vehicles (#)		34	0	0	41	0		0	0			
Queue Length 50th (ft)		94	23	50	72	2		33	93			
Queue Length 95th (ft)		134	48	102	122	7		m67	153			
Internal Link Dist (ft)		5260			1092			61			251	
Turn Bay Length (ft)			165	165		165						
Base Capacity (vph)		1698	803	548	2155	938		326	407			
Starvation Cap Reductn		0	0	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		0.35	0.11	0.54	0.34	0.01		0.22	0.46			

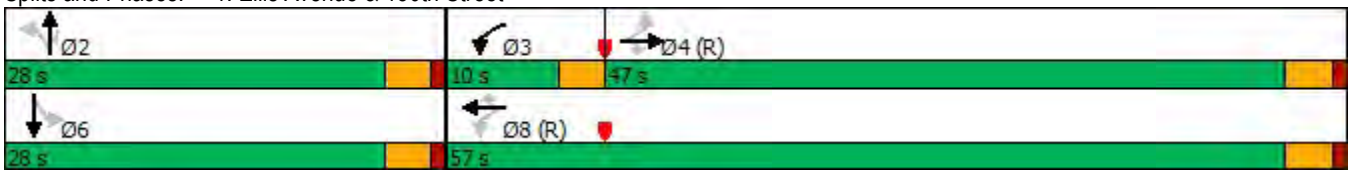
Intersection Summary

Area Type: Other

Cycle Length: 85	
Actuated Cycle Length: 85	
Offset: 0 (0%), Referenced to phase 4:EBTL and 8:WBTL, Start of Green	
Natural Cycle: 70	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.59	
Intersection Signal Delay: 12.7	Intersection LOS: B
Intersection Capacity Utilization 86.7%	ICU Level of Service E
Analysis Period (min) 15	

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

Splits and Phases: 1: Ellis Avenue & 130th Street



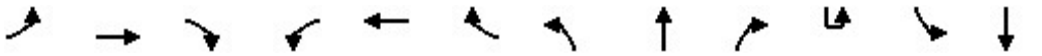
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	0	19	166	102	0	296
Future Volume (vph)	0	19	166	102	0	296
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Lane Util. Factor	1.00	1.00	0.95	0.95	1.00	0.95
Frt		0.865	0.943			
Flt Protected						
Satd. Flow (prot)	0	1557	3225	0	0	3420
Flt Permitted						
Satd. Flow (perm)	0	1557	3225	0	0	3420
Link Speed (mph)	30		30			30
Link Distance (ft)	642		174			141
Travel Time (s)	14.6		4.0			3.2
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%
Adj. Flow (vph)	0	21	184	113	0	329
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	21	297	0	0	329
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(ft)	0		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
Turning Speed (mph)	15	9		9	15	
Sign Control	Stop		Free			Free

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 18.3%		ICU Level of Service A	
Analysis Period (min) 15			

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	0	19	166	102	0	296
Future Volume (Veh/h)	0	19	166	102	0	296
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	0	21	184	113	0	329
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type			None			None
Median storage veh)						
Upstream signal (ft)						141
pX, platoon unblocked						
vC, conflicting volume	405	148			297	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	405	148			297	
tC, single (s)	6.8	6.9			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	100	98			100	
cM capacity (veh/h)	579	878			1276	

Direction, Lane #	WB 1	NB 1	NB 2	SB 1	SB 2
Volume Total	21	123	174	164	164
Volume Left	0	0	0	0	0
Volume Right	21	0	113	0	0
cSH	878	1700	1700	1700	1700
Volume to Capacity	0.02	0.07	0.10	0.10	0.10
Queue Length 95th (ft)	2	0	0	0	0
Control Delay (s)	9.2	0.0	0.0	0.0	0.0
Lane LOS	A				
Approach Delay (s)	9.2	0.0		0.0	
Approach LOS	A				

Intersection Summary				
Average Delay	0.3			
Intersection Capacity Utilization	18.3%	ICU Level of Service		A
Analysis Period (min)	15			

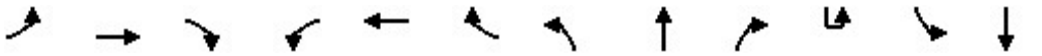


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBU	SBL	SBT
Lane Configurations												
Traffic Volume (vph)	6	2	2	2	4	31	4	127	8	87	25	135
Future Volume (vph)	6	2	2	2	4	31	4	127	8	87	25	135
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt		0.975			0.885			0.992				
Flt Protected		0.969			0.998			0.999				0.978
Satd. Flow (prot)	0	1701	0	0	1590	0	0	1727	0	0	0	1737
Flt Permitted		0.969			0.998			0.999				0.978
Satd. Flow (perm)	0	1701	0	0	1590	0	0	1727	0	0	0	1737
Link Speed (mph)		30			30			30				30
Link Distance (ft)		472			392			265				174
Travel Time (s)		10.7			8.9			6.0				4.0
Confl. Peds. (#/hr)			4	4		1			1	4	1	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	0%	2%	25%	0%	8%	1%
Adj. Flow (vph)	7	2	2	2	4	34	4	141	9	97	28	150
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	11	0	0	40	0	0	154	0	0	0	275
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	R NA	Left	Left
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	1.07	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	9	15	
Sign Control		Stop			Stop			Free				Free

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 36.6%		ICU Level of Service A	
Analysis Period (min) 15			

Lane Group	SBR
Lane Configurations	
Traffic Volume (vph)	0
Future Volume (vph)	0
Ideal Flow (vphpl)	1800
Lane Util. Factor	1.00
Ped Bike Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	1800
Flt Permitted	
Satd. Flow (perm)	1800
Link Speed (mph)	
Link Distance (ft)	
Travel Time (s)	
Confl. Peds. (#/hr)	4
Peak Hour Factor	0.90
Heavy Vehicles (%)	0%
Adj. Flow (vph)	0
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
Sign Control	

Intersection Summary



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBU	SBL	SBT
Lane Configurations												
Traffic Volume (veh/h)	6	2	2	2	4	31	4	127	8	87	25	135
Future Volume (Veh/h)	6	2	2	2	4	31	4	127	8	87	25	135
Sign Control		Stop			Stop			Free				Free
Grade		0%			0%			0%				0%
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	7	2	2	2	4	34	4	141	9	0	28	150
Pedestrians		4			1			4				1
Lane Width (ft)		12.0			12.0			12.0				12.0
Walking Speed (ft/s)		4.0			4.0			4.0				4.0
Percent Blockage		0			0			0				0
Right turn flare (veh)												
Median type								None				None
Median storage veh)												
Upstream signal (ft)												315
pX, platoon unblocked	0.99	0.99	0.99	0.99	0.99		0.99			0.00		
vC, conflicting volume	400	369	158	368	364	148	154			0	151	
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	385	353	139	351	348	148	135			0	151	
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			0.0	4.2	
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			0.0	2.3	
p0 queue free %	99	100	100	100	99	96	100			0	98	
cM capacity (veh/h)	531	552	896	581	555	903	1437			0	1393	

Direction, Lane #	EB 1	WB 1	NB 1	SB 1	SB 2
Volume Total	11	40	154	178	0
Volume Left	7	2	4	28	0
Volume Right	2	34	9	0	0
cSH	578	828	1437	1393	1700
Volume to Capacity	0.02	0.05	0.00	0.02	0.00
Queue Length 95th (ft)	1	4	0	2	0
Control Delay (s)	11.3	9.6	0.2	1.3	0.0
Lane LOS	B	A	A	A	
Approach Delay (s)	11.3	9.6	0.2	1.3	
Approach LOS	B	A			

Intersection Summary				
Average Delay	2.0			
Intersection Capacity Utilization	36.6%	ICU Level of Service		A
Analysis Period (min)	15			

Movement	SBR
Lane Configurations	
Traffic Volume (veh/h)	0
Future Volume (Veh/h)	0
Sign Control	
Grade	
Peak Hour Factor	0.90
Hourly flow rate (vph)	0
Pedestrians	
Lane Width (ft)	
Walking Speed (ft/s)	
Percent Blockage	
Right turn flare (veh)	
Median type	
Median storage veh)	
Upstream signal (ft)	
pX, platoon unblocked	
vC, conflicting volume	
vC1, stage 1 conf vol	
vC2, stage 2 conf vol	
vCu, unblocked vol	
tC, single (s)	
tC, 2 stage (s)	
tF (s)	
p0 queue free %	
cM capacity (veh/h)	
Direction, Lane #	

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	0	0	39	0	6	35
Future Volume (vph)	0	0	39	0	6	35
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt						
Flt Protected						0.992
Satd. Flow (prot)	1765	0	1765	0	0	1751
Flt Permitted						0.992
Satd. Flow (perm)	1765	0	1765	0	0	1751
Link Speed (mph)	30		30			30
Link Distance (ft)	331		199			206
Travel Time (s)	7.5		4.5			4.7
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	42	0	7	38
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	0	42	0	0	45
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
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
Turning Speed (mph)	15	9		9	15	
Sign Control	Stop		Free			Free

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 10.7%		ICU Level of Service A	
Analysis Period (min) 15			

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	0	0	39	0	6	35
Future Volume (Veh/h)	0	0	39	0	6	35
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	0	42	0	7	38
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type			None			None
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	94	42			42	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	94	42			42	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	100	100			100	
cM capacity (veh/h)	902	1029			1567	

Direction, Lane #	WB 1	NB 1	SB 1
Volume Total	0	42	45
Volume Left	0	0	7
Volume Right	0	0	0
cSH	1700	1700	1567
Volume to Capacity	0.00	0.02	0.00
Queue Length 95th (ft)	0	0	0
Control Delay (s)	0.0	0.0	1.2
Lane LOS	A		A
Approach Delay (s)	0.0	0.0	1.2
Approach LOS	A		

Intersection Summary			
Average Delay	0.6		
Intersection Capacity Utilization	10.7%	ICU Level of Service	A
Analysis Period (min)	15		

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	0	0	14	0	0	17
Future Volume (vph)	0	0	14	0	0	17
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt						
Flt Protected						
Satd. Flow (prot)	1800	0	1800	0	0	1622
Flt Permitted						
Satd. Flow (perm)	1800	0	1800	0	0	1622
Link Speed (mph)	30		30			30
Link Distance (ft)	383		252			706
Travel Time (s)	8.7		5.7			16.0
Confl. Peds. (#/hr)	3			3		
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles (%)	0%	0%	0%	0%	0%	11%
Adj. Flow (vph)	0	0	16	0	0	19
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	0	16	0	0	19
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
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
Turning Speed (mph)	15	9		9	15	
Sign Control	Stop		Free			Free

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization	7.6%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	0	0	14	0	0	17
Future Volume (Veh/h)	0	0	14	0	0	17
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	0	0	16	0	0	19
Pedestrians	3		3			
Lane Width (ft)	12.0		12.0			
Walking Speed (ft/s)	4.0		4.0			
Percent Blockage	0		0			
Right turn flare (veh)						
Median type			None			None
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	41	19			19	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	41	19			19	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	100	100			100	
cM capacity (veh/h)	971	1062			1607	

Direction, Lane #	WB 1	NB 1	SB 1
Volume Total	0	16	19
Volume Left	0	0	0
Volume Right	0	0	0
cSH	1700	1700	1607
Volume to Capacity	0.00	0.01	0.00
Queue Length 95th (ft)	0	0	0
Control Delay (s)	0.0	0.0	0.0
Lane LOS	A		
Approach Delay (s)	0.0	0.0	0.0
Approach LOS	A		

Intersection Summary			
Average Delay	0.0		
Intersection Capacity Utilization	7.6%	ICU Level of Service	A
Analysis Period (min)	15		

Lane Group	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU
Lane Configurations												
Traffic Volume (vph)	8	0	14	2	0	4	4	2	6	15	2	2
Future Volume (vph)	8	0	14	2	0	4	4	2	6	15	2	2
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
Frt		0.914				0.946				0.990		
Flt Protected		0.982				0.990				0.984		
Satd. Flow (prot)	0	1616	0	0	0	1686	0	0	0	1637	0	0
Flt Permitted		0.982				0.990				0.984		
Satd. Flow (perm)	0	1616	0	0	0	1686	0	0	0	1637	0	0
Link Speed (mph)		30				30				30		
Link Distance (ft)		303				1025				274		
Travel Time (s)		6.9				23.3				6.2		
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	100%	0%
Adj. Flow (vph)	9	0	16	2	0	4	4	2	7	17	2	2
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	25	0	0	0	10	0	0	0	28	0	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	R NA	Left	Left	Right	R NA	Left	Left	Right	R NA
Median Width(ft)		0				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)	15		9	9	15		9	9	15		9	9
Sign Control		Stop				Stop				Free		

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 13.3%		ICU Level of Service A	
Analysis Period (min) 15			

Lane Group	SBL	SBT	SBR
Lane Configurations			
Traffic Volume (vph)	10	8	12
Future Volume (vph)	10	8	12
Ideal Flow (vphpl)	1800	1800	1800
Lane Util. Factor	1.00	1.00	1.00
Frt		0.950	
Flt Protected		0.982	
Satd. Flow (prot)	0	1578	0
Flt Permitted		0.982	
Satd. Flow (perm)	0	1578	0
Link Speed (mph)		30	
Link Distance (ft)		252	
Travel Time (s)		5.7	
Peak Hour Factor	0.90	0.90	0.90
Heavy Vehicles (%)	0%	25%	0%
Adj. Flow (vph)	11	9	13
Shared Lane Traffic (%)			
Lane Group Flow (vph)	0	35	0
Enter Blocked Intersection	No	No	No
Lane Alignment	Left	Left	Right
Median Width(ft)		0	
Link Offset(ft)		0	
Crosswalk Width(ft)		16	
Two way Left Turn Lane			
Headway Factor	1.07	1.07	1.07
Turning Speed (mph)	15		9
Sign Control		Free	

Intersection Summary

Movement	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU
Lane Configurations												
Traffic Volume (veh/h)	8	0	14	2	0	4	4	2	6	15	2	2
Future Volume (Veh/h)	8	0	14	2	0	4	4	2	6	15	2	2
Sign Control		Stop				Stop				Free		
Grade		0%				0%				0%		
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	9	0	16	0	0	4	4	0	7	17	2	0
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type										None		
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked				0.00				0.00				0.00
vC, conflicting volume	76	70	16	0	86	76	18	0	22			0
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	76	70	16	0	86	76	18	0	22			0
tC, single (s)	7.1	6.5	6.2	0.0	7.1	6.5	6.2	0.0	4.1			0.0
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	0.0	3.5	4.0	3.3	0.0	2.2			0.0
p0 queue free %	99	100	99	0	100	100	100	0	100			0
cM capacity (veh/h)	905	815	1070	0	884	809	1066	0	1607			0

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	25	8	26	33
Volume Left	9	0	7	11
Volume Right	16	4	2	13
cSH	1004	920	1607	1611
Volume to Capacity	0.02	0.01	0.00	0.01
Queue Length 95th (ft)	2	1	0	1
Control Delay (s)	8.7	8.9	2.0	2.5
Lane LOS	A	A	A	A
Approach Delay (s)	8.7	8.9	2.0	2.5
Approach LOS	A	A		

Intersection Summary				
Average Delay	4.6			
Intersection Capacity Utilization	13.3%	ICU Level of Service	A	
Analysis Period (min)	15			

Movement	SBL	SBT	SBR
Lane Configurations			
Traffic Volume (veh/h)	10	8	12
Future Volume (Veh/h)	10	8	12
Sign Control		Free	
Grade		0%	
Peak Hour Factor	0.90	0.90	0.90
Hourly flow rate (vph)	11	9	13
Pedestrians			
Lane Width (ft)			
Walking Speed (ft/s)			
Percent Blockage			
Right turn flare (veh)			
Median type		None	
Median storage veh)			
Upstream signal (ft)			
pX, platoon unblocked			
vC, conflicting volume	19		
vC1, stage 1 conf vol			
vC2, stage 2 conf vol			
vCu, unblocked vol	19		
tC, single (s)	4.1		
tC, 2 stage (s)			
tF (s)	2.2		
p0 queue free %	99		
cM capacity (veh/h)	1611		
Direction, Lane #			

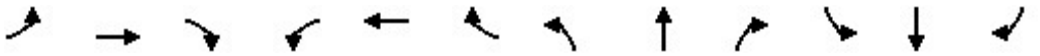
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	SEL	SET	SER	NWL	NWT	NWR
Lane Configurations												
Traffic Volume (vph)	0	15	0	0	2	0	0	0	0	0	0	0
Future Volume (vph)	0	15	0	0	2	0	0	0	0	0	0	0
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt												
Flt Protected												
Satd. Flow (prot)	0	1104	0	0	1800	0	0	1800	0	0	1800	0
Flt Permitted												
Satd. Flow (perm)	0	1104	0	0	1800	0	0	1800	0	0	1800	0
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		1025			255			543			489	
Travel Time (s)		23.3			5.8			12.3			11.1	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles (%)	0%	63%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Adj. Flow (vph)	0	17	0	0	2	0	0	0	0	0	0	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	17	0	0	2	0	0	0	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	1.07	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
Sign Control		Free			Free			Stop			Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 6.7%		ICU Level of Service A	
Analysis Period (min) 15			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	SEL	SET	SER	NWL	NWT	NWR
Lane Configurations												
Traffic Volume (veh/h)	0	15	0	0	2	0	0	0	0	0	0	0
Future Volume (Veh/h)	0	15	0	0	2	0	0	0	0	0	0	0
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	0	17	0	0	2	0	0	0	0	0	0	0
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	2			17			19	19	2	19	19	17
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	2			17			19	19	2	19	19	17
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	100			100			100	100	100	100	100	100
cM capacity (veh/h)	1634			1613			1000	879	1088	1000	879	1068

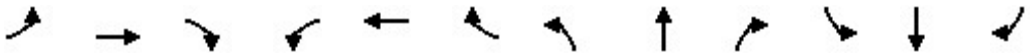
Direction, Lane #	EB 1	WB 1	SE 1	NW 1
Volume Total	17	2	0	0
Volume Left	0	0	0	0
Volume Right	0	0	0	0
cSH	1634	1613	1700	1700
Volume to Capacity	0.00	0.00	0.00	0.00
Queue Length 95th (ft)	0	0	0	0
Control Delay (s)	0.0	0.0	0.0	0.0
Lane LOS			A	A
Approach Delay (s)	0.0	0.0	0.0	0.0
Approach LOS			A	A

Intersection Summary				
Average Delay	0.0			
Intersection Capacity Utilization	6.7%	ICU Level of Service		A
Analysis Period (min)	15			



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	10	4	4	0	0	0	4	0	0	0	2	2
Future Volume (vph)	10	4	4	0	0	0	4	0	0	0	2	2
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
Frt		0.972									0.932	
Flt Protected		0.972						0.950				
Satd. Flow (prot)	0	1667	0	0	1765	0	0	1676	0	0	1645	0
Flt Permitted		0.972						0.950				
Satd. Flow (perm)	0	1667	0	0	1765	0	0	1676	0	0	1645	0
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		275			334			409			294	
Travel Time (s)		6.3			7.6			9.3			6.7	
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
Adj. Flow (vph)	11	4	4	0	0	0	4	0	0	0	2	2
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	19	0	0	0	0	0	4	0	0	4	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	1.07	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
Sign Control		Stop			Stop			Stop			Stop	

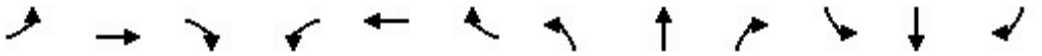
Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 13.5%		ICU Level of Service A	
Analysis Period (min) 15			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Traffic Volume (vph)	10	4	4	0	0	0	4	0	0	0	2	2
Future Volume (vph)	10	4	4	0	0	0	4	0	0	0	2	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
Hourly flow rate (vph)	11	4	4	0	0	0	4	0	0	0	2	2

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total (vph)	19	0	4	4
Volume Left (vph)	11	0	4	0
Volume Right (vph)	4	0	0	2
Hadj (s)	0.02	0.00	0.23	-0.27
Departure Headway (s)	3.9	3.9	4.2	3.7
Degree Utilization, x	0.02	0.00	0.00	0.00
Capacity (veh/h)	905	900	845	968
Control Delay (s)	7.0	6.9	7.2	6.7
Approach Delay (s)	7.0	0.0	7.2	6.7
Approach LOS	A	A	A	A

Intersection Summary				
Delay	7.0			
Level of Service	A			
Intersection Capacity Utilization	13.5%	ICU Level of Service	A	
Analysis Period (min)	15			



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	1035	40	120	755	0	60	0	150	0	0	0
Future Volume (vph)	0	1035	40	120	755	0	60	0	150	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	12	12	12	16	12
Storage Length (ft)	165		165	165		165	0		0	0		0
Storage Lanes	1		1	1		1	0		1	0		0
Taper Length (ft)	210			200			25			25		
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.850						0.850			
Flt Protected				0.950				0.950				
Satd. Flow (prot)	1800	3320	1530	1644	3320	1800	0	1710	1500	0	2040	0
Flt Permitted				0.188				0.757				
Satd. Flow (perm)	1800	3320	1530	325	3320	1800	0	1363	1500	0	2040	0
Right Turn on Red			No			No			No			No
Satd. Flow (RTOR)												
Link Speed (mph)		35			35			30			30	
Link Distance (ft)		5343			1170			134			331	
Travel Time (s)		104.1			22.8			3.0			7.5	
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Heavy Vehicles (%)	0%	3%	0%	4%	3%	0%	0%	0%	2%	0%	0%	0%
Adj. Flow (vph)	0	1078	42	125	786	0	63	0	156	0	0	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	1078	42	125	786	0	0	63	156	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)		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	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07	0.91	1.07
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	1	1	1	1	1	1	1	1	1	1	
Detector Template												
Leading Detector (ft)	50	50	50	50	50	50	50	50	50	50	50	
Trailing Detector (ft)	0	0	0	0	0	0	0	0	0	0	0	
Detector 1 Position(ft)	0	0	0	0	0	0	0	0	0	0	0	
Detector 1 Size(ft)	50	50	50	50	50	50	50	50	50	50	50	
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Turn Type	Perm	NA	Perm	pm+pt	NA	Perm	Perm	NA	Perm			
Protected Phases		4		3	8			2			6	
Permitted Phases	4		4	8		8	2		2	6		
Detector Phase	4	4	4	3	8	8	2	2	2	6	6	
Switch Phase												
Minimum Initial (s)	43.0	43.0	43.0	7.0	43.0	43.0	6.0	6.0	6.0	6.0	6.0	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Minimum Split (s)	47.0	47.0	47.0	10.0	47.0	47.0	10.0	10.0	10.0	10.0	10.0	
Total Split (s)	47.0	47.0	47.0	10.0	57.0	57.0	28.0	28.0	28.0	28.0	28.0	
Total Split (%)	55.3%	55.3%	55.3%	11.8%	67.1%	67.1%	32.9%	32.9%	32.9%	32.9%	32.9%	
Maximum Green (s)	43.0	43.0	43.0	7.0	53.0	53.0	24.0	24.0	24.0	24.0	24.0	
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	
All-Red Time (s)	1.0	1.0	1.0	0.0	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		0.0	
Total Lost Time (s)	4.0	4.0	4.0	3.0	4.0	4.0		4.0	4.0		4.0	
Lead/Lag	Lag	Lag	Lag	Lead								
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	6.0	6.0	6.0	6.0	6.0	
Recall Mode	C-Max	C-Max	C-Max	None	C-Max	C-Max	None	None	None	None	None	
Act Effct Green (s)		49.5	49.5	61.1	60.1			16.9	16.9			
Actuated g/C Ratio		0.58	0.58	0.72	0.71			0.20	0.20			
v/c Ratio		0.56	0.05	0.36	0.34			0.23	0.52			
Control Delay		13.2	9.5	7.3	5.8			29.1	36.1			
Queue Delay		0.0	0.0	0.0	0.0			0.0	0.0			
Total Delay		13.2	9.5	7.3	5.8			29.1	36.1			
LOS		B	A	A	A			C	D			
Approach Delay		13.1			6.0			34.1				
Approach LOS		B			A			C				
90th %ile Green (s)	43.0	43.0	43.0	8.0	54.0	54.0	23.0	23.0	23.0	23.0	23.0	
90th %ile Term Code	Coord	Coord	Coord	Max	Coord	Coord	Gap	Gap	Gap	Hold	Hold	
70th %ile Green (s)	46.6	46.6	46.6	8.3	57.9	57.9	19.1	19.1	19.1	19.1	19.1	
70th %ile Term Code	Coord	Coord	Coord	Gap	Coord	Coord	Gap	Gap	Gap	Hold	Hold	
50th %ile Green (s)	49.8	49.8	49.8	7.4	60.2	60.2	16.8	16.8	16.8	16.8	16.8	
50th %ile Term Code	Coord	Coord	Coord	Gap	Coord	Coord	Gap	Gap	Gap	Hold	Hold	
30th %ile Green (s)	52.5	52.5	52.5	7.0	62.5	62.5	14.5	14.5	14.5	14.5	14.5	
30th %ile Term Code	Coord	Coord	Coord	Min	Coord	Coord	Gap	Gap	Gap	Hold	Hold	
10th %ile Green (s)	55.8	55.8	55.8	7.0	65.8	65.8	11.2	11.2	11.2	11.2	11.2	
10th %ile Term Code	Coord	Coord	Coord	Min	Coord	Coord	Gap	Gap	Gap	Hold	Hold	
Stops (vph)		622	18	36	272			48	129			
Fuel Used(gal)		47	2	2	11			1	2			
CO Emissions (g/hr)		3313	123	116	740			48	138			
NOx Emissions (g/hr)		645	24	23	144			9	27			
VOC Emissions (g/hr)		768	28	27	172			11	32			
Dilemma Vehicles (#)		61	0	0	44			0	0			
Queue Length 50th (ft)		171	9	17	71			29	75			
Queue Length 95th (ft)		276	27	43	126			58	123			
Internal Link Dist (ft)		5263			1090			54			251	
Turn Bay Length (ft)			165	165								
Base Capacity (vph)		1935	891	350	2346			384	423			
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		0.56	0.05	0.36	0.34			0.16	0.37			

Intersection Summary

Area Type: Other

Cycle Length: 85	
Actuated Cycle Length: 85	
Offset: 0 (0%), Referenced to phase 4:EBTL and 8:WBTL, Start of Green	
Natural Cycle: 70	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.56	
Intersection Signal Delay: 12.3	Intersection LOS: B
Intersection Capacity Utilization 86.7%	ICU Level of Service E
Analysis Period (min) 15	

Splits and Phases: 1: Ellis Avenue & 130th Street

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	0	27	144	2	0	126
Future Volume (vph)	0	27	144	2	0	126
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Lane Util. Factor	1.00	1.00	0.95	0.95	1.00	0.95
Frt		0.865	0.998			
Flt Protected						
Satd. Flow (prot)	0	1557	3413	0	0	3420
Flt Permitted						
Satd. Flow (perm)	0	1557	3413	0	0	3420
Link Speed (mph)	30		30			30
Link Distance (ft)	602		184			134
Travel Time (s)	13.7		4.2			3.0
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%
Adj. Flow (vph)	0	30	160	2	0	140
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	30	162	0	0	140
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(ft)	0		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
Turning Speed (mph)	15	9		9	15	
Sign Control	Stop		Free			Free

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 14.3%		ICU Level of Service A	
Analysis Period (min) 15			

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	0	27	144	2	0	126
Future Volume (Veh/h)	0	27	144	2	0	126
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	0	30	160	2	0	140
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type			None			None
Median storage veh)						
Upstream signal (ft)						134
pX, platoon unblocked						
vC, conflicting volume	231	81			162	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	231	81			162	
tC, single (s)	6.8	6.9			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	100	97			100	
cM capacity (veh/h)	742	969			1429	

Direction, Lane #	WB 1	NB 1	NB 2	SB 1	SB 2
Volume Total	30	107	55	70	70
Volume Left	0	0	0	0	0
Volume Right	30	0	2	0	0
cSH	969	1700	1700	1700	1700
Volume to Capacity	0.03	0.06	0.03	0.04	0.04
Queue Length 95th (ft)	2	0	0	0	0
Control Delay (s)	8.8	0.0	0.0	0.0	0.0
Lane LOS	A				
Approach Delay (s)	8.8	0.0		0.0	
Approach LOS	A				

Intersection Summary				
Average Delay	0.8			
Intersection Capacity Utilization	14.3%	ICU Level of Service		A
Analysis Period (min)	15			

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL
Lane Configurations												
Traffic Volume (vph)	9	1	4	2	1	17	1	2	154	2	6	23
Future Volume (vph)	9	1	4	2	1	17	1	2	154	2	6	23
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
Ped Bike Factor												
Frt		0.964			0.883				0.998			
Flt Protected		0.968			0.995				0.999			
Satd. Flow (prot)	0	1680	0	0	1581	0	0	0	1744	0	0	0
Flt Permitted		0.968			0.995				0.999			
Satd. Flow (perm)	0	1680	0	0	1581	0	0	0	1744	0	0	0
Link Speed (mph)		30			30				30			
Link Distance (ft)		472			392				265			
Travel Time (s)		10.7			8.9				6.0			
Confl. Peds. (#/hr)						43				43		43
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	0%	0%	3%	0%	0%	4%
Adj. Flow (vph)	10	1	4	2	1	19	1	2	171	2	7	26
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	15	0	0	22	0	0	0	176	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	R NA	Left	Left	Right	R NA	Left
Median Width(ft)		0			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)	15		9	15		9	9	15		9	9	15
Sign Control		Stop			Stop				Free			

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization	40.1%	ICU Level of Service	A
Analysis Period (min)	15		

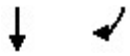
Lane Group	SBT	SBR
Lane Configurations		
Traffic Volume (vph)	90	8
Future Volume (vph)	90	8
Ideal Flow (vphpl)	1800	1800
Lane Util. Factor	1.00	1.00
Ped Bike Factor		
Frt		0.850
Flt Protected	0.988	
Satd. Flow (prot)	1752	1530
Flt Permitted	0.988	
Satd. Flow (perm)	1752	1530
Link Speed (mph)	30	
Link Distance (ft)	184	
Travel Time (s)	4.2	
Confl. Peds. (#/hr)		
Peak Hour Factor	0.90	0.90
Heavy Vehicles (%)	1%	0%
Adj. Flow (vph)	100	9
Shared Lane Traffic (%)		
Lane Group Flow (vph)	133	9
Enter Blocked Intersection	No	No
Lane Alignment	Left	Right
Median Width(ft)	0	
Link Offset(ft)	0	
Crosswalk Width(ft)	16	
Two way Left Turn Lane		
Headway Factor	1.07	1.07
Turning Speed (mph)		9
Sign Control	Free	

Intersection Summary

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL
Lane Configurations												
Traffic Volume (veh/h)	9	1	4	2	1	17	1	2	154	2	6	23
Future Volume (Veh/h)	9	1	4	2	1	17	1	2	154	2	6	23
Sign Control		Stop			Stop				Free			
Grade		0%			0%				0%			
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	10	1	4	2	1	19	0	2	171	2	0	26
Pedestrians					43							
Lane Width (ft)					12.0							
Walking Speed (ft/s)					4.0							
Percent Blockage					4							
Right turn flare (veh)												
Median type									None			
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked							0.00				0.00	
vC, conflicting volume	390	372	100	376	380	258	0	109			0	216
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	390	372	100	376	380	258	0	109			0	216
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	0.0	4.1			0.0	4.1
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	0.0	2.2			0.0	2.2
p0 queue free %	98	100	100	100	100	97	0	100			0	98
cM capacity (veh/h)	513	530	961	537	524	730	0	1494			0	1294

Direction, Lane #	EB 1	WB 1	NB 1	SB 1	SB 2
Volume Total	15	22	175	126	9
Volume Left	10	2	2	26	0
Volume Right	4	19	2	0	9
cSH	588	695	1494	1294	1700
Volume to Capacity	0.03	0.03	0.00	0.02	0.01
Queue Length 95th (ft)	2	2	0	2	0
Control Delay (s)	11.3	10.3	0.1	1.8	0.0
Lane LOS	B	B	A	A	
Approach Delay (s)	11.3	10.3	0.1	1.6	
Approach LOS	B	B			

Intersection Summary				
Average Delay	1.8			
Intersection Capacity Utilization	40.1%	ICU Level of Service		A
Analysis Period (min)	15			



Movement	SBT	SBR
Lane Configurations		
Traffic Volume (veh/h)	90	8
Future Volume (Veh/h)	90	8
Sign Control	Free	
Grade	0%	
Peak Hour Factor	0.90	0.90
Hourly flow rate (vph)	100	9
Pedestrians	43	
Lane Width (ft)	12.0	
Walking Speed (ft/s)	4.0	
Percent Blockage	4	
Right turn flare (veh)		
Median type	None	
Median storage veh)		
Upstream signal (ft)	318	
pX, platoon unblocked		
vC, conflicting volume		
vC1, stage 1 conf vol		
vC2, stage 2 conf vol		
vCu, unblocked vol		
tC, single (s)		
tC, 2 stage (s)		
tF (s)		
p0 queue free %		
cM capacity (veh/h)		
Direction, Lane #		

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	0	0	18	0	1	29
Future Volume (vph)	0	0	18	0	1	29
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt						
Flt Protected						0.998
Satd. Flow (prot)	1765	0	1765	0	0	1761
Flt Permitted						0.998
Satd. Flow (perm)	1765	0	1765	0	0	1761
Link Speed (mph)	30		30			30
Link Distance (ft)	278		312			264
Travel Time (s)	6.3		7.1			6.0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	20	0	1	32
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	0	20	0	0	33
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
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
Turning Speed (mph)	15	9		9	15	
Sign Control	Stop		Free			Free

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 6.7%		ICU Level of Service A	
Analysis Period (min) 15			

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	0	0	18	0	1	29
Future Volume (Veh/h)	0	0	18	0	1	29
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	0	20	0	1	32
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type			None			None
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	54	20			20	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	54	20			20	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	100	100			100	
cM capacity (veh/h)	953	1058			1596	

Direction, Lane #	WB 1	NB 1	SB 1
Volume Total	0	20	33
Volume Left	0	0	1
Volume Right	0	0	0
cSH	1700	1700	1596
Volume to Capacity	0.00	0.01	0.00
Queue Length 95th (ft)	0	0	0
Control Delay (s)	0.0	0.0	0.2
Lane LOS	A		A
Approach Delay (s)	0.0	0.0	0.2
Approach LOS	A		

Intersection Summary			
Average Delay	0.1		
Intersection Capacity Utilization	6.7%	ICU Level of Service	A
Analysis Period (min)	15		

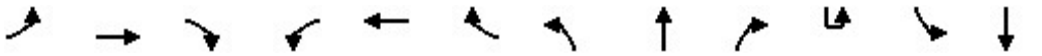
Lane Group	WBL	WBR	NBT	NBR	SBU	SBL	SBT
Lane Configurations							
Traffic Volume (vph)	0	0	12	0	1	0	20
Future Volume (vph)	0	0	12	0	1	0	20
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt							
Flt Protected							0.998
Satd. Flow (prot)	1800	0	1800	0	0	0	1730
Flt Permitted							0.998
Satd. Flow (perm)	1800	0	1800	0	0	0	1730
Link Speed (mph)	30		30				30
Link Distance (ft)	396		262				692
Travel Time (s)	9.0		6.0				15.7
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	4%
Adj. Flow (vph)	0	0	13	0	1	0	21
Shared Lane Traffic (%)							
Lane Group Flow (vph)	0	0	13	0	0	0	22
Enter Blocked Intersection	No	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	R NA	Left	Left
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
Turning Speed (mph)	15	9		9	9	15	
Sign Control	Stop		Free				Free

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 6.7%		ICU Level of Service A	
Analysis Period (min) 15			

Movement	WBL	WBR	NBT	NBR	SBU	SBL	SBT
Lane Configurations							
Traffic Volume (veh/h)	0	0	12	0	1	0	20
Future Volume (Veh/h)	0	0	12	0	1	0	20
Sign Control	Stop		Free				Free
Grade	0%		0%				0%
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Hourly flow rate (vph)	0	0	13	0	0	0	21
Pedestrians							
Lane Width (ft)							
Walking Speed (ft/s)							
Percent Blockage							
Right turn flare (veh)							
Median type			None				None
Median storage veh)							
Upstream signal (ft)							
pX, platoon unblocked					0.00		
vC, conflicting volume	34	13			0	13	
vC1, stage 1 conf vol							
vC2, stage 2 conf vol							
vCu, unblocked vol	34	13			0	13	
tC, single (s)	6.4	6.2			0.0	4.1	
tC, 2 stage (s)							
tF (s)	3.5	3.3			0.0	2.2	
p0 queue free %	100	100			0	100	
cM capacity (veh/h)	984	1073			0	1619	

Direction, Lane #	WB 1	NB 1	SB 1
Volume Total	0	13	21
Volume Left	0	0	0
Volume Right	0	0	0
cSH	1700	1700	1619
Volume to Capacity	0.00	0.01	0.00
Queue Length 95th (ft)	0	0	0
Control Delay (s)	0.0	0.0	0.0
Lane LOS	A		
Approach Delay (s)	0.0	0.0	0.0
Approach LOS	A		

Intersection Summary			
Average Delay	0.0		
Intersection Capacity Utilization	6.7%	ICU Level of Service	A
Analysis Period (min)	15		

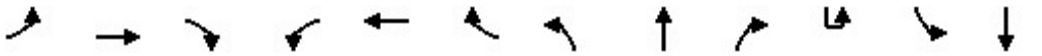


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBU	SBL	SBT
Lane Configurations												
Traffic Volume (vph)	2	0	5	0	0	0	1	7	0	1	0	14
Future Volume (vph)	2	0	5	0	0	0	1	7	0	1	0	14
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.899										0.992
Flt Protected		0.988						0.994				0.997
Satd. Flow (prot)	0	1599	0	0	1800	0	0	1789	0	0	0	1780
Flt Permitted		0.988						0.994				0.997
Satd. Flow (perm)	0	1599	0	0	1800	0	0	1789	0	0	0	1780
Link Speed (mph)		30			30			30				30
Link Distance (ft)		330			1039			274				262
Travel Time (s)		7.5			23.6			6.2				6.0
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Adj. Flow (vph)	2	0	6	0	0	0	1	8	0	1	0	16
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	8	0	0	0	0	0	9	0	0	0	18
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	R NA	Left	Left
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	1.07	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	9	15	
Sign Control		Stop			Stop			Free				Free

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 13.3%		ICU Level of Service A	
Analysis Period (min) 15			

Lane Group	SBR
Lane Configurations	
Traffic Volume (vph)	1
Future Volume (vph)	1
Ideal Flow (vphpl)	1800
Lane Util. Factor	1.00
Frt	
Flt Protected	
Satd. Flow (prot)	0
Flt Permitted	
Satd. Flow (perm)	0
Link Speed (mph)	
Link Distance (ft)	
Travel Time (s)	
Peak Hour Factor	0.90
Heavy Vehicles (%)	0%
Adj. Flow (vph)	1
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
Sign Control	

Intersection Summary



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBU	SBL	SBT
Lane Configurations												
Traffic Volume (veh/h)	2	0	5	0	0	0	1	7	0	1	0	14
Future Volume (Veh/h)	2	0	5	0	0	0	1	7	0	1	0	14
Sign Control		Stop			Stop			Free				Free
Grade		0%			0%			0%				0%
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	2	0	6	0	0	0	1	8	0	0	0	16
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None				None
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked										0.00		
vC, conflicting volume	26	26	16	32	27	8	17			0	8	
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	26	26	16	32	27	8	17			0	8	
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			0.0	4.1	
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			0.0	2.2	
p0 queue free %	100	100	99	100	100	100	100			0	100	
cM capacity (veh/h)	988	870	1068	974	870	1080	1613			0	1625	

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	8	0	9	17
Volume Left	2	0	1	0
Volume Right	6	0	0	1
cSH	1047	1700	1613	1625
Volume to Capacity	0.01	0.00	0.00	0.00
Queue Length 95th (ft)	1	0	0	0
Control Delay (s)	8.5	0.0	0.8	0.0
Lane LOS	A	A	A	
Approach Delay (s)	8.5	0.0	0.8	0.0
Approach LOS	A	A		

Intersection Summary				
Average Delay	2.2			
Intersection Capacity Utilization	13.3%	ICU Level of Service	A	
Analysis Period (min)	15			

Movement	SBR
Lane Configurations	
Traffic Volume (veh/h)	1
Future Volume (Veh/h)	1
Sign Control	
Grade	
Peak Hour Factor	0.90
Hourly flow rate (vph)	1
Pedestrians	
Lane Width (ft)	
Walking Speed (ft/s)	
Percent Blockage	
Right turn flare (veh)	
Median type	
Median storage veh)	
Upstream signal (ft)	
pX, platoon unblocked	
vC, conflicting volume	
vC1, stage 1 conf vol	
vC2, stage 2 conf vol	
vCu, unblocked vol	
tC, single (s)	
tC, 2 stage (s)	
tF (s)	
p0 queue free %	
cM capacity (veh/h)	
Direction, Lane #	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	SEU	SEL	SET	SER	NWL	NWT
Lane Configurations												
Traffic Volume (vph)	2	0	5	0	0	0	1	0	14	1	0	0
Future Volume (vph)	2	0	5	0	0	0	1	0	14	1	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
Frt		0.899							0.992			
Flt Protected		0.988							0.997			
Satd. Flow (prot)	0	1599	0	0	1800	0	0	0	1780	0	0	1800
Flt Permitted		0.988							0.997			
Satd. Flow (perm)	0	1599	0	0	1800	0	0	0	1780	0	0	1800
Link Speed (mph)		30			30				15			15
Link Distance (ft)		1039			253				374			412
Travel Time (s)		23.6			5.8				17.0			18.7
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Adj. Flow (vph)	2	0	6	0	0	0	1	0	16	1	0	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	8	0	0	0	0	0	0	18	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	R NA	Left	Left	Right	Left	Left
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	1.07	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	9	15		9	15	
Sign Control		Free			Free				Stop			Stop

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 13.3%		ICU Level of Service A	
Analysis Period (min) 15			

Lane Group	NWR
Lane Configurations	
Traffic Volume (vph)	0
Future Volume (vph)	0
Ideal Flow (vphpl)	1800
Lane Util. Factor	1.00
Frt	
Flt Protected	
Satd. Flow (prot)	0
Flt Permitted	
Satd. Flow (perm)	0
Link Speed (mph)	
Link Distance (ft)	
Travel Time (s)	
Peak Hour Factor	0.90
Heavy Vehicles (%)	0%
Adj. Flow (vph)	0
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
Sign Control	

Intersection Summary

Movement	EBL	EBT	EBR	WBL	WBT	WBR	SEU	SEL	SET	SER	NWL	NWT
Lane Configurations												
Traffic Volume (veh/h)	2	0	5	0	0	0	1	0	14	1	0	0
Future Volume (Veh/h)	2	0	5	0	0	0	1	0	14	1	0	0
Sign Control		Free			Free				Stop			Stop
Grade		0%			0%				0%			0%
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	2	0	6	0	0	0	0	0	16	1	0	0
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked							0.00					
vC, conflicting volume	0			6			0	7	10	0	16	7
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	0			6			0	7	10	0	16	7
tC, single (s)	4.1			4.1			0.0	7.1	6.5	6.2	7.1	6.5
tC, 2 stage (s)												
tF (s)	2.2			2.2			0.0	3.5	4.0	3.3	3.5	4.0
p0 queue free %	100			100			0	100	98	100	100	100
cM capacity (veh/h)	1636			1628			0	1017	888	1091	989	891

Direction, Lane #	EB 1	WB 1	SE 1	NW 1
Volume Total	8	0	17	0
Volume Left	2	0	0	0
Volume Right	6	0	1	0
cSH	1636	1700	898	1700
Volume to Capacity	0.00	0.00	0.02	0.00
Queue Length 95th (ft)	0	0	1	0
Control Delay (s)	1.8	0.0	9.1	0.0
Lane LOS	A		A	A
Approach Delay (s)	1.8	0.0	9.1	0.0
Approach LOS			A	A

Intersection Summary				
Average Delay	6.8			
Intersection Capacity Utilization	13.3%	ICU Level of Service	A	
Analysis Period (min)	15			

Movement	NWR
Lane Configurations	
Traffic Volume (veh/h)	0
Future Volume (Veh/h)	0
Sign Control	
Grade	
Peak Hour Factor	0.90
Hourly flow rate (vph)	0
Pedestrians	
Lane Width (ft)	
Walking Speed (ft/s)	
Percent Blockage	
Right turn flare (veh)	
Median type	
Median storage veh)	
Upstream signal (ft)	
pX, platoon unblocked	
vC, conflicting volume	3
vC1, stage 1 conf vol	
vC2, stage 2 conf vol	
vCu, unblocked vol	3
tC, single (s)	6.2
tC, 2 stage (s)	
tF (s)	3.3
p0 queue free %	100
cM capacity (veh/h)	1087
Direction, Lane #	

Lane Group	EBU	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations												
Traffic Volume (vph)	1	2	0	1	0	0	0	1	3	0	0	2
Future Volume (vph)	1	2	0	1	0	0	0	1	3	0	0	2
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
Frt			0.966									
Flt Protected			0.964						0.988			
Satd. Flow (prot)	0	0	1643	0	0	1765	0	0	1744	0	0	1765
Flt Permitted			0.964						0.988			
Satd. Flow (perm)	0	0	1643	0	0	1765	0	0	1744	0	0	1765
Link Speed (mph)			30			30			30			30
Link Distance (ft)			315			317			259			232
Travel Time (s)			7.2			7.2			5.9			5.3
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
Adj. Flow (vph)	1	2	0	1	0	0	0	1	3	0	0	2
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	0	4	0	0	0	0	0	4	0	0	2
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	R NA	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left
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	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07
Turning Speed (mph)	9	15		9	15		9	15		9	15	
Sign Control			Stop			Stop			Free			Free

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 13.3%		ICU Level of Service A	
Analysis Period (min) 15			

Lane Group	SBR
Lane Configurations	
Traffic Volume (vph)	0
Future Volume (vph)	0
Ideal Flow (vphpl)	1800
Lane Util. Factor	1.00
Frt	
Flt Protected	
Satd. Flow (prot)	0
Flt Permitted	
Satd. Flow (perm)	0
Link Speed (mph)	
Link Distance (ft)	
Travel Time (s)	
Peak Hour Factor	0.92
Adj. Flow (vph)	0
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
Sign Control	

Intersection Summary

Movement	EBU	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations												
Traffic Volume (veh/h)	1	2	0	1	0	0	0	1	3	0	0	2
Future Volume (Veh/h)	1	2	0	1	0	0	0	1	3	0	0	2
Sign Control			Stop			Stop			Free			Free
Grade			0%			0%			0%			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
Hourly flow rate (vph)	0	2	0	1	0	0	0	1	3	0	0	2
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type									None			None
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked	0.00											
vC, conflicting volume	0	7	7	2	8	7	3	2			3	
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	0	7	7	2	8	7	3	2			3	
tC, single (s)	0.0	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1	
tC, 2 stage (s)												
tF (s)	0.0	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2	
p0 queue free %	0	100	100	100	100	100	100	100			100	
cM capacity (veh/h)	0	1012	888	1082	1010	888	1081	1620			1619	

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	3	0	4	2
Volume Left	2	0	1	0
Volume Right	1	0	0	0
cSH	1035	1700	1620	1700
Volume to Capacity	0.00	0.00	0.00	0.00
Queue Length 95th (ft)	0	0	0	0
Control Delay (s)	8.5	0.0	1.8	0.0
Lane LOS	A	A	A	
Approach Delay (s)	8.5	0.0	1.8	0.0
Approach LOS	A	A		

Intersection Summary				
Average Delay	3.6			
Intersection Capacity Utilization	13.3%	ICU Level of Service	A	
Analysis Period (min)	15			

Movement	SBR
Lane Configurations	
Traffic Volume (veh/h)	0
Future Volume (Veh/h)	0
Sign Control	
Grade	
Peak Hour Factor	0.92
Hourly flow rate (vph)	0
Pedestrians	
Lane Width (ft)	
Walking Speed (ft/s)	
Percent Blockage	
Right turn flare (veh)	
Median type	
Median storage veh)	
Upstream signal (ft)	
pX, platoon unblocked	
vC, conflicting volume	
vC1, stage 1 conf vol	
vC2, stage 2 conf vol	
vCu, unblocked vol	
tC, single (s)	
tC, 2 stage (s)	
tF (s)	
p0 queue free %	
cM capacity (veh/h)	
Direction, Lane #	

HCS7 Freeway Diverge Report

Project Information			
Analyst	TranSmart	Date	9/24/2020
Agency	CTA	Analysis Year	No-Build
Jurisdiction	Cook County	Time Period Analyzed	AM Peak
Project Description	Red Line Extension - EB 130th Street Entrance Ramp to EB I-94	Unit	United States Customary

Geometric Data		
	Freeway	Ramp
Number of Lanes (N), ln	2	1
Free-Flow Speed (FFS), mi/h	45.0	40.0
Segment Length (L) / Deceleration Length (LA),ft	1610	310
Terrain Type	Level	Level
Percent Grade, %	-	-
Segment Type / Ramp Type	Freeway	Right-Sided One-Lane

Adjustment Factors		
Driver Population	All Familiar	All Familiar
Weather Type	Non-Severe Weather	Non-Severe Weather
Incident Type	No Incident	-
Final Speed Adjustment Factor (SAF)	1.000	1.000
Final Capacity Adjustment Factor (CAF)	1.000	1.000
Demand Adjustment Factor (DAF)	1.000	1.000

Demand and Capacity		
Demand Volume (Vi)	750	310
Peak Hour Factor (PHF)	0.90	0.90
Total Trucks, %	5.50	7.60
Single-Unit Trucks (SUT), %	-	-
Tractor-Trailers (TT), %	-	-
Heavy Vehicle Adjustment Factor (fHV)	0.948	0.929
Flow Rate (vi),pc/h	879	371
Capacity (c), pc/h	4500	2000
Volume-to-Capacity Ratio (v/c)	0.20	0.19

Speed and Density			
Upstream Equilibrium Distance (LEQ), ft	-	Number of Outer Lanes on Freeway (NO)	0
Distance to Upstream Ramp (LUP), ft	-	Speed Index (DS)	0.396
Downstream Equilibrium Distance (LEQ), ft	-	Flow Outer Lanes (vOA), pc/h/ln	-
Distance to Downstream Ramp (LDOWN), ft	-	Off-Ramp Influence Area Speed (SR), mi/h	43.8
Prop. Freeway Vehicles in Lane 1 and 2 (PFD)	1.000	Outer Lanes Freeway Speed (SO), mi/h	49.4
Flow in Lanes 1 and 2 (v12), pc/h	879	Ramp Junction Speed (S), mi/h	43.8
Flow Entering Ramp-Infl. Area (vR12), pc/h	-	Average Density (D), pc/mi/ln	10.0
Level of Service (LOS)	A	Density in Ramp Influence Area (DR), pc/mi/ln	9.0

HCS7 Freeway Weaving Report

Project Information

Analyst	TranSmart	Date	9/28/2020
Agency	CTA	Analysis Year	No-Build
Jurisdiction	Cook County	Time Period Analyzed	AM Peak
Project Description	Red Line Extension - EB Weaving Segment	Unit	United States Customary

Geometric Data

Number of Lanes (N), ln	2	Segment Type	Freeway
Segment Length (L_S), ft	750	Number of Maneuver Lanes (N_{WL}), ln	2
Weaving Configuration	One-Sided	Ramp-to-Freeway Lane Changes (LC_{RF}), lc	1
Terrain Type	Level	Freeway-to-Ramp Lane Changes (LC_{FR}), lc	1
Percent Grade, %	-	Ramp-to-Ramp Lane Changes (LC_{RR}), lc	0
Interchange Density (ID), int/mi	0.67	Cross Weaving Managed Lane	No

Adjustment Factors

Driver Population	All Familiar	Final Speed Adjustment Factor (SAF)	1.000
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	1.000
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

	FF	RF	RR	FR
Demand Volume (V_i), veh/h	150	365	0	290
Peak Hour Factor (PHF)	0.90	0.90	0.90	0.90
Total Trucks, %	5.50	15.40	0.00	7.10
Heavy Vehicle Adjustment Factor (f_{HV})	0.948	0.867	1.000	0.934
Flow Rate (v_i), pc/h	176	468	0	345
Weaving Flow Rate (v_w), pc/h	813	Freeway Max Capacity (c_{IFL}), pc/h/ln		2200
Non-Weaving Flow Rate (v_{NW}), pc/h	176	Density-Based Capacity (c_{IWL}), pc/h/ln		1353
Total Flow Rate (v), pc/h	989	Demand Flow-Based Capacity (c_{IW}), pc/h		2920
Volume Ratio (VR)	0.822	Weaving Segment Capacity (c_W), veh/h		2448
Minimum Lane Change Rate (LC_{MIN}), lc/h	813	Adjusted Weaving Area Capacity, pc/h		2706
Maximum Weaving Length (L_{MAX}), ft	11826	Volume-to-Capacity Ratio (v/c)		0.37

Speed and Density

Non-Weaving Vehicle Index (I_{NW})	9	Average Weaving Speed (S_W), mi/h	38.7
Non-Weaving Lane Change Rate (LC_{NW}), lc/h	58	Average Non-Weaving Speed (S_{NW}), mi/h	36.8
Weaving Lane Change Rate (LC_W), lc/h	863	Average Speed (S), mi/h	38.3
Weaving Lane Change Rate (LC_{All}), lc/h	921	Density (D), pc/mi/ln	12.9
Weaving Intensity Factor (W)	0.266	Level of Service (LOS)	B

HCS7 Freeway Merge Report

Project Information			
Analyst	TranSmart	Date	9/24/2020
Agency	CTA	Analysis Year	No-Build
Jurisdiction	Cook County	Time Period Analyzed	AM Peak
Project Description	Red Line Extension - WB I-94 Exit Ramp to EB 130th Street	Unit	United States Customary

Geometric Data		
	Freeway	Ramp
Number of Lanes (N), ln	2	1
Free-Flow Speed (FFS), mi/h	45.0	40.0
Segment Length (L) / Acceleration Length (LA),ft	940	325
Terrain Type	Level	Level
Percent Grade, %	-	-
Segment Type / Ramp Type	Freeway	Right-Sided One-Lane

Adjustment Factors		
Driver Population	All Familiar	All Familiar
Weather Type	Non-Severe Weather	Non-Severe Weather
Incident Type	No Incident	-
Final Speed Adjustment Factor (SAF)	1.000	1.000
Final Capacity Adjustment Factor (CAF)	1.000	1.000
Demand Adjustment Factor (DAF)	1.000	1.000

Demand and Capacity		
Demand Volume (Vi)	510	535
Peak Hour Factor (PHF)	0.90	0.90
Total Trucks, %	14.00	40.30
Single-Unit Trucks (SUT), %	-	-
Tractor-Trailers (TT), %	-	-
Heavy Vehicle Adjustment Factor (fHV)	0.877	0.713
Flow Rate (vi),pc/h	646	834
Capacity (c), pc/h	4500	2000
Volume-to-Capacity Ratio (v/c)	0.33	0.42

Speed and Density			
Upstream Equilibrium Distance (LEQ), ft	-	Number of Outer Lanes on Freeway (NO)	0
Distance to Upstream Ramp (LUP), ft	-	Speed Index (MS)	0.312
Downstream Equilibrium Distance (LEQ), ft	-	Flow Outer Lanes (vOA), pc/h/ln	-
Distance to Downstream Ramp (LDOWN), ft	-	On-Ramp Influence Area Speed (SR), mi/h	44.1
Prop. Freeway Vehicles in Lane 1 and 2 (PFM)	1.000	Outer Lanes Freeway Speed (SO), mi/h	45.0
Flow in Lanes 1 and 2 (v12), pc/h	646	Ramp Junction Speed (S), mi/h	44.1
Flow Entering Ramp-Infl. Area (vR12), pc/h	1480	Average Density (D), pc/mi/ln	16.8
Level of Service (LOS)	B	Density in Ramp Influence Area (DR), pc/mi/ln	14.7

HCS7 Freeway Diverge Report

Project Information			
Analyst	TranSmart	Date	9/24/2020
Agency	CTA	Analysis Year	No-Build
Jurisdiction	Cook County	Time Period Analyzed	AM Peak
Project Description	Red Line Extension - WB 130th Street Entrance Ramp to WB I-94	Unit	United States Customary

Geometric Data		
	Freeway	Ramp
Number of Lanes (N), ln	2	1
Free-Flow Speed (FFS), mi/h	45.0	45.0
Segment Length (L) / Deceleration Length (LA),ft	1885	525
Terrain Type	Level	Level
Percent Grade, %	-	-
Segment Type / Ramp Type	Freeway	Right-Sided One-Lane

Adjustment Factors		
Driver Population	All Familiar	All Familiar
Weather Type	Non-Severe Weather	Non-Severe Weather
Incident Type	No Incident	-
Final Speed Adjustment Factor (SAF)	1.000	1.000
Final Capacity Adjustment Factor (CAF)	1.000	1.000
Demand Adjustment Factor (DAF)	1.000	1.000

Demand and Capacity		
Demand Volume (Vi)	1020	380
Peak Hour Factor (PHF)	0.95	0.90
Total Trucks, %	30.20	11.00
Single-Unit Trucks (SUT), %	-	-
Tractor-Trailers (TT), %	-	-
Heavy Vehicle Adjustment Factor (fHV)	0.768	0.901
Flow Rate (vi),pc/h	1398	469
Capacity (c), pc/h	4500	2100
Volume-to-Capacity Ratio (v/c)	0.31	0.22

Speed and Density			
Upstream Equilibrium Distance (LEQ), ft	-	Number of Outer Lanes on Freeway (NO)	0
Distance to Upstream Ramp (LUP), ft	-	Speed Index (DS)	0.340
Downstream Equilibrium Distance (LEQ), ft	-	Flow Outer Lanes (vOA), pc/h/ln	-
Distance to Downstream Ramp (LDOWN), ft	-	Off-Ramp Influence Area Speed (SR), mi/h	44.0
Prop. Freeway Vehicles in Lane 1 and 2 (PFD)	1.000	Outer Lanes Freeway Speed (SO), mi/h	49.4
Flow in Lanes 1 and 2 (v12), pc/h	1398	Ramp Junction Speed (S), mi/h	44.0
Flow Entering Ramp-Infl. Area (vR12), pc/h	-	Average Density (D), pc/mi/ln	15.9
Level of Service (LOS)	B	Density in Ramp Influence Area (DR), pc/mi/ln	11.5

HCS7 Freeway Weaving Report

Project Information

Analyst	TranSmart	Date	9/28/2020
Agency	CTA	Analysis Year	No-Build
Jurisdiction	Cook County	Time Period Analyzed	AM Peak
Project Description	Red Line Extension - WB Weaving Segment	Unit	United States Customary

Geometric Data

Number of Lanes (N), ln	2	Segment Type	Freeway
Segment Length (L_S), ft	570	Number of Maneuver Lanes (N_{WL}), ln	2
Weaving Configuration	One-Sided	Ramp-to-Freeway Lane Changes (LC_{RF}), lc	1
Terrain Type	Level	Freeway-to-Ramp Lane Changes (LC_{FR}), lc	1
Percent Grade, %	-	Ramp-to-Ramp Lane Changes (LC_{RR}), lc	0
Interchange Density (ID), int/mi	0.67	Cross Weaving Managed Lane	No

Adjustment Factors

Driver Population	All Familiar	Final Speed Adjustment Factor (SAF)	1.000
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	1.000
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

	FF	RF	RR	FR
Demand Volume (V_i), veh/h	240	420	0	400
Peak Hour Factor (PHF)	0.95	0.90	0.90	0.90
Total Trucks, %	30.20	11.70	0.00	43.60
Heavy Vehicle Adjustment Factor (f_{HV})	0.768	0.895	1.000	0.696
Flow Rate (v_i), pc/h	329	521	0	639
Weaving Flow Rate (v_w), pc/h	1160	Freeway Max Capacity (c_{IFL}), pc/h/ln		2200
Non-Weaving Flow Rate (v_{NW}), pc/h	329	Density-Based Capacity (c_{IWL}), pc/h/ln		1382
Total Flow Rate (v), pc/h	1489	Demand Flow-Based Capacity (c_{IW}), pc/h		3081
Volume Ratio (VR)	0.779	Weaving Segment Capacity (c_W), veh/h		2160
Minimum Lane Change Rate (LC_{MIN}), lc/h	1160	Adjusted Weaving Area Capacity, pc/h		2764
Maximum Weaving Length (L_{MAX}), ft	11265	Volume-to-Capacity Ratio (v/c)		0.54

Speed and Density

Non-Weaving Vehicle Index (I_{NW})	13	Average Weaving Speed (S_W), mi/h	36.3
Non-Weaving Lane Change Rate (LC_{NW}), lc/h	0	Average Non-Weaving Speed (S_{NW}), mi/h	33.1
Weaving Lane Change Rate (LC_W), lc/h	1199	Average Speed (S), mi/h	35.5
Weaving Lane Change Rate (LC_{All}), lc/h	1199	Density (D), pc/mi/ln	21.0
Weaving Intensity Factor (W)	0.406	Level of Service (LOS)	C

HCS7 Freeway Merge Report

Project Information			
Analyst	TranSmart	Date	9/24/2020
Agency	CTA	Analysis Year	No-Build
Jurisdiction	Cook County	Time Period Analyzed	AM Peak
Project Description	Red Line Extension - EB I-94 Exit Ramp to WB 130th Street	Unit	United States Customary

Geometric Data		
	Freeway	Ramp
Number of Lanes (N), ln	2	1
Free-Flow Speed (FFS), mi/h	45.0	40.0
Segment Length (L) / Acceleration Length (LA),ft	850	340
Terrain Type	Level	Level
Percent Grade, %	-	-
Segment Type / Ramp Type	Freeway	Right-Sided One-Lane

Adjustment Factors		
Driver Population	All Familiar	All Familiar
Weather Type	Non-Severe Weather	Non-Severe Weather
Incident Type	No Incident	-
Final Speed Adjustment Factor (SAF)	1.000	1.000
Final Capacity Adjustment Factor (CAF)	1.000	1.000
Demand Adjustment Factor (DAF)	1.000	1.000

Demand and Capacity		
Demand Volume (Vi)	660	330
Peak Hour Factor (PHF)	0.95	0.90
Total Trucks, %	7.90	4.70
Single-Unit Trucks (SUT), %	-	-
Tractor-Trailers (TT), %	-	-
Heavy Vehicle Adjustment Factor (fHV)	0.927	0.955
Flow Rate (vi),pc/h	749	384
Capacity (c), pc/h	4500	2000
Volume-to-Capacity Ratio (v/c)	0.25	0.19

Speed and Density			
Upstream Equilibrium Distance (LEQ), ft	-	Number of Outer Lanes on Freeway (NO)	0
Distance to Upstream Ramp (LUP), ft	-	Speed Index (MS)	0.306
Downstream Equilibrium Distance (LEQ), ft	-	Flow Outer Lanes (vOA), pc/h/ln	-
Distance to Downstream Ramp (LDOWN), ft	-	On-Ramp Influence Area Speed (SR), mi/h	44.1
Prop. Freeway Vehicles in Lane 1 and 2 (PFM)	1.000	Outer Lanes Freeway Speed (SO), mi/h	45.0
Flow in Lanes 1 and 2 (v12), pc/h	749	Ramp Junction Speed (S), mi/h	44.1
Flow Entering Ramp-Infl. Area (vR12), pc/h	1133	Average Density (D), pc/mi/ln	12.8
Level of Service (LOS)	B	Density in Ramp Influence Area (DR), pc/mi/ln	12.1

HCS7 Freeway Diverge Report

Project Information			
Analyst	TranSmart	Date	9/24/2020
Agency	CTA	Analysis Year	No-Build
Jurisdiction	Cook County	Time Period Analyzed	PM Peak
Project Description	Red Line Extension - EB 130th Street Entrance Ramp to EB I-94	Unit	United States Customary

Geometric Data		
	Freeway	Ramp
Number of Lanes (N), ln	2	1
Free-Flow Speed (FFS), mi/h	45.0	40.0
Segment Length (L) / Deceleration Length (LA),ft	1610	310
Terrain Type	Level	Level
Percent Grade, %	-	-
Segment Type / Ramp Type	Freeway	Right-Sided One-Lane

Adjustment Factors		
Driver Population	All Familiar	All Familiar
Weather Type	Non-Severe Weather	Non-Severe Weather
Incident Type	No Incident	-
Final Speed Adjustment Factor (SAF)	1.000	1.000
Final Capacity Adjustment Factor (CAF)	1.000	1.000
Demand Adjustment Factor (DAF)	1.000	1.000

Demand and Capacity		
Demand Volume (Vi)	1190	570
Peak Hour Factor (PHF)	0.90	0.90
Total Trucks, %	1.60	3.00
Single-Unit Trucks (SUT), %	-	-
Tractor-Trailers (TT), %	-	-
Heavy Vehicle Adjustment Factor (fHV)	0.984	0.971
Flow Rate (vi),pc/h	1344	652
Capacity (c), pc/h	4500	2000
Volume-to-Capacity Ratio (v/c)	0.30	0.33

Speed and Density			
Upstream Equilibrium Distance (LEQ), ft	-	Number of Outer Lanes on Freeway (NO)	0
Distance to Upstream Ramp (LUP), ft	-	Speed Index (DS)	0.422
Downstream Equilibrium Distance (LEQ), ft	-	Flow Outer Lanes (vOA), pc/h/ln	-
Distance to Downstream Ramp (LDOWN), ft	-	Off-Ramp Influence Area Speed (SR), mi/h	43.7
Prop. Freeway Vehicles in Lane 1 and 2 (PFD)	1.000	Outer Lanes Freeway Speed (SO), mi/h	49.4
Flow in Lanes 1 and 2 (v12), pc/h	1344	Ramp Junction Speed (S), mi/h	43.7
Flow Entering Ramp-Infl. Area (vR12), pc/h	-	Average Density (D), pc/mi/ln	15.4
Level of Service (LOS)	B	Density in Ramp Influence Area (DR), pc/mi/ln	13.0

HCS7 Freeway Weaving Report

Project Information

Analyst	TranSmart	Date	9/28/2020
Agency	CTA	Analysis Year	No-Build
Jurisdiction	Cook County	Time Period Analyzed	PM Peak
Project Description	Red Line Extension - EB Weaving Segment	Unit	United States Customary

Geometric Data

Number of Lanes (N), ln	2	Segment Type	Freeway
Segment Length (L_S), ft	750	Number of Maneuver Lanes (N_{WL}), ln	2
Weaving Configuration	One-Sided	Ramp-to-Freeway Lane Changes (LC_{RF}), lc	1
Terrain Type	Level	Freeway-to-Ramp Lane Changes (LC_{FR}), lc	1
Percent Grade, %	-	Ramp-to-Ramp Lane Changes (LC_{RR}), lc	0
Interchange Density (ID), int/mi	0.67	Cross Weaving Managed Lane	No

Adjustment Factors

Driver Population	All Familiar	Final Speed Adjustment Factor (SAF)	1.000
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	1.000
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

	FF	RF	RR	FR
Demand Volume (V_i), veh/h	280	475	0	340
Peak Hour Factor (PHF)	0.90	0.95	0.90	0.90
Total Trucks, %	1.60	2.70	0.00	3.20
Heavy Vehicle Adjustment Factor (f_{HV})	0.984	0.974	1.000	0.969
Flow Rate (v_i), pc/h	316	513	0	390
Weaving Flow Rate (v_w), pc/h	903	Freeway Max Capacity (c_{IFL}), pc/h/ln		2200
Non-Weaving Flow Rate (v_{NW}), pc/h	316	Density-Based Capacity (c_{IWL}), pc/h/ln		1433
Total Flow Rate (v), pc/h	1219	Demand Flow-Based Capacity (c_{IW}), pc/h		3239
Volume Ratio (VR)	0.741	Weaving Segment Capacity (c_W), veh/h		2794
Minimum Lane Change Rate (LC_{MIN}), lc/h	903	Adjusted Weaving Area Capacity, pc/h		2866
Maximum Weaving Length (L_{MAX}), ft	10777	Volume-to-Capacity Ratio (v/c)		0.43

Speed and Density

Non-Weaving Vehicle Index (I_{NW})	16	Average Weaving Speed (S_W), mi/h	38.2
Non-Weaving Lane Change Rate (LC_{NW}), lc/h	86	Average Non-Weaving Speed (S_{NW}), mi/h	35.6
Weaving Lane Change Rate (LC_W), lc/h	953	Average Speed (S), mi/h	37.5
Weaving Lane Change Rate (LC_{All}), lc/h	1039	Density (D), pc/mi/ln	16.3
Weaving Intensity Factor (W)	0.292	Level of Service (LOS)	B

HCS7 Freeway Merge Report

Project Information			
Analyst	TranSmart	Date	9/24/2020
Agency	CTA	Analysis Year	No-Build
Jurisdiction	Cook County	Time Period Analyzed	PM Peak
Project Description	Red Line Extension - WB I-94 Exit Ramp to EB 130th Street	Unit	United States Customary

Geometric Data		
	Freeway	Ramp
Number of Lanes (N), ln	2	1
Free-Flow Speed (FFS), mi/h	45.0	40.0
Segment Length (L) / Acceleration Length (LA),ft	940	325
Terrain Type	Level	Level
Percent Grade, %	-	-
Segment Type / Ramp Type	Freeway	Right-Sided One-Lane

Adjustment Factors		
Driver Population	All Familiar	All Familiar
Weather Type	Non-Severe Weather	Non-Severe Weather
Incident Type	No Incident	-
Final Speed Adjustment Factor (SAF)	1.000	1.000
Final Capacity Adjustment Factor (CAF)	1.000	1.000
Demand Adjustment Factor (DAF)	1.000	1.000

Demand and Capacity		
Demand Volume (Vi)	755	755
Peak Hour Factor (PHF)	0.90	0.90
Total Trucks, %	1.30	6.20
Single-Unit Trucks (SUT), %	-	-
Tractor-Trailers (TT), %	-	-
Heavy Vehicle Adjustment Factor (fHV)	0.987	0.942
Flow Rate (vi),pc/h	850	891
Capacity (c), pc/h	4500	2000
Volume-to-Capacity Ratio (v/c)	0.39	0.45

Speed and Density			
Upstream Equilibrium Distance (LEQ), ft	-	Number of Outer Lanes on Freeway (NO)	0
Distance to Upstream Ramp (LUP), ft	-	Speed Index (MS)	0.317
Downstream Equilibrium Distance (LEQ), ft	-	Flow Outer Lanes (vOA), pc/h/ln	-
Distance to Downstream Ramp (LDOWN), ft	-	On-Ramp Influence Area Speed (SR), mi/h	44.0
Prop. Freeway Vehicles in Lane 1 and 2 (PFM)	1.000	Outer Lanes Freeway Speed (SO), mi/h	45.0
Flow in Lanes 1 and 2 (v12), pc/h	850	Ramp Junction Speed (S), mi/h	44.0
Flow Entering Ramp-Infl. Area (vR12), pc/h	1741	Average Density (D), pc/mi/ln	19.8
Level of Service (LOS)	B	Density in Ramp Influence Area (DR), pc/mi/ln	16.7

HCS7 Freeway Diverge Report

Project Information			
Analyst	TranSmart	Date	9/24/2020
Agency	CTA	Analysis Year	No-Build
Jurisdiction	Cook County	Time Period Analyzed	PM Peak
Project Description	Red Line Extension - WB 130th Street Entrance Ramp to WB I-94	Unit	United States Customary

Geometric Data		
	Freeway	Ramp
Number of Lanes (N), ln	2	1
Free-Flow Speed (FFS), mi/h	45.0	45.0
Segment Length (L) / Deceleration Length (LA),ft	1885	525
Terrain Type	Level	Level
Percent Grade, %	-	-
Segment Type / Ramp Type	Freeway	Right-Sided One-Lane

Adjustment Factors		
Driver Population	All Familiar	All Familiar
Weather Type	Non-Severe Weather	Non-Severe Weather
Incident Type	No Incident	-
Final Speed Adjustment Factor (SAF)	1.000	1.000
Final Capacity Adjustment Factor (CAF)	1.000	1.000
Demand Adjustment Factor (DAF)	1.000	1.000

Demand and Capacity		
Demand Volume (Vi)	1440	495
Peak Hour Factor (PHF)	0.90	0.90
Total Trucks, %	9.60	2.50
Single-Unit Trucks (SUT), %	-	-
Tractor-Trailers (TT), %	-	-
Heavy Vehicle Adjustment Factor (fHV)	0.912	0.976
Flow Rate (vi),pc/h	1754	564
Capacity (c), pc/h	4500	2100
Volume-to-Capacity Ratio (v/c)	0.39	0.27

Speed and Density			
Upstream Equilibrium Distance (LEQ), ft	-	Number of Outer Lanes on Freeway (NO)	0
Distance to Upstream Ramp (LUP), ft	-	Speed Index (DS)	0.349
Downstream Equilibrium Distance (LEQ), ft	-	Flow Outer Lanes (vOA), pc/h/ln	-
Distance to Downstream Ramp (LDOWN), ft	-	Off-Ramp Influence Area Speed (SR), mi/h	44.0
Prop. Freeway Vehicles in Lane 1 and 2 (PFD)	1.000	Outer Lanes Freeway Speed (SO), mi/h	49.4
Flow in Lanes 1 and 2 (v12), pc/h	1754	Ramp Junction Speed (S), mi/h	44.0
Flow Entering Ramp-Infl. Area (vR12), pc/h	-	Average Density (D), pc/mi/ln	19.9
Level of Service (LOS)	B	Density in Ramp Influence Area (DR), pc/mi/ln	14.6

HCS7 Freeway Weaving Report

Project Information

Analyst	TranSmart	Date	9/28/2020
Agency	CTA	Analysis Year	No-Build
Jurisdiction	Cook County	Time Period Analyzed	PM Peak
Project Description	Red Line Extension - WB Weaving Segment	Unit	United States Customary

Geometric Data

Number of Lanes (N), ln	2	Segment Type	Freeway
Segment Length (L_S), ft	570	Number of Maneuver Lanes (N_{WL}), ln	2
Weaving Configuration	One-Sided	Ramp-to-Freeway Lane Changes (LC_{RF}), lc	1
Terrain Type	Level	Freeway-to-Ramp Lane Changes (LC_{FR}), lc	1
Percent Grade, %	-	Ramp-to-Ramp Lane Changes (LC_{RR}), lc	0
Interchange Density (ID), int/mi	0.67	Cross Weaving Managed Lane	No

Adjustment Factors

Driver Population	All Familiar	Final Speed Adjustment Factor (SAF)	1.000
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	1.000
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

	FF	RF	RR	FR
Demand Volume (V_i), veh/h	160	375	0	785
Peak Hour Factor (PHF)	0.90	0.90	0.90	0.90
Total Trucks, %	9.60	5.00	0.00	6.70
Heavy Vehicle Adjustment Factor (f_{HV})	0.912	0.952	1.000	0.937
Flow Rate (v_i), pc/h	195	438	0	931
Weaving Flow Rate (v_w), pc/h	1369	Freeway Max Capacity (c_{IFL}), pc/h/ln		2200
Non-Weaving Flow Rate (v_{NW}), pc/h	195	Density-Based Capacity (c_{IWL}), pc/h/ln		1285
Total Flow Rate (v), pc/h	1564	Demand Flow-Based Capacity (c_{IW}), pc/h		2743
Volume Ratio (VR)	0.875	Weaving Segment Capacity (c_W), veh/h		2411
Minimum Lane Change Rate (LC_{MIN}), lc/h	1369	Adjusted Weaving Area Capacity, pc/h		2570
Maximum Weaving Length (L_{MAX}), ft	12528	Volume-to-Capacity Ratio (v/c)		0.61

Speed and Density

Non-Weaving Vehicle Index (I_{NW})	7	Average Weaving Speed (S_W), mi/h	35.5
Non-Weaving Lane Change Rate (LC_{NW}), lc/h	0	Average Non-Weaving Speed (S_{NW}), mi/h	31.4
Weaving Lane Change Rate (LC_W), lc/h	1408	Average Speed (S), mi/h	34.9
Weaving Lane Change Rate (LC_{All}), lc/h	1408	Density (D), pc/mi/ln	22.4
Weaving Intensity Factor (W)	0.461	Level of Service (LOS)	C

HCS7 Freeway Merge Report

Project Information			
Analyst	TranSmart	Date	9/24/2020
Agency	CTA	Analysis Year	No-Build
Jurisdiction	Cook County	Time Period Analyzed	PM Peak
Project Description	Red Line Extension - EB I-94 Exit Ramp to WB 130th Street	Unit	United States Customary

Geometric Data		
	Freeway	Ramp
Number of Lanes (N), ln	2	1
Free-Flow Speed (FFS), mi/h	45.0	40.0
Segment Length (L) / Acceleration Length (LA),ft	850	340
Terrain Type	Level	Level
Percent Grade, %	-	-
Segment Type / Ramp Type	Freeway	Right-Sided One-Lane

Adjustment Factors		
Driver Population	All Familiar	All Familiar
Weather Type	Non-Severe Weather	Non-Severe Weather
Incident Type	No Incident	-
Final Speed Adjustment Factor (SAF)	1.000	1.000
Final Capacity Adjustment Factor (CAF)	1.000	1.000
Demand Adjustment Factor (DAF)	1.000	1.000

Demand and Capacity		
Demand Volume (Vi)	535	325
Peak Hour Factor (PHF)	0.90	0.95
Total Trucks, %	1.80	2.70
Single-Unit Trucks (SUT), %	-	-
Tractor-Trailers (TT), %	-	-
Heavy Vehicle Adjustment Factor (fHV)	0.982	0.974
Flow Rate (vi),pc/h	605	351
Capacity (c), pc/h	4500	2000
Volume-to-Capacity Ratio (v/c)	0.21	0.18

Speed and Density			
Upstream Equilibrium Distance (LEQ), ft	-	Number of Outer Lanes on Freeway (NO)	0
Distance to Upstream Ramp (LUP), ft	-	Speed Index (MS)	0.304
Downstream Equilibrium Distance (LEQ), ft	-	Flow Outer Lanes (vOA), pc/h/ln	-
Distance to Downstream Ramp (LDOWN), ft	-	On-Ramp Influence Area Speed (SR), mi/h	44.1
Prop. Freeway Vehicles in Lane 1 and 2 (PFM)	1.000	Outer Lanes Freeway Speed (SO), mi/h	45.0
Flow in Lanes 1 and 2 (v12), pc/h	605	Ramp Junction Speed (S), mi/h	44.1
Flow Entering Ramp-Infl. Area (vR12), pc/h	956	Average Density (D), pc/mi/ln	10.8
Level of Service (LOS)	B	Density in Ramp Influence Area (DR), pc/mi/ln	10.7

Traffic Analysis – Build Condition (2050)

CTA RLE

FOCUS MEETING - UPDATE:

TRIP GENERATION AND ASSUMPTION REVIEW

REVISED DATA

BASED ON SEPTEMBER 16, 2020 MEETING

TRANSYSTEMS AND TRANSMART

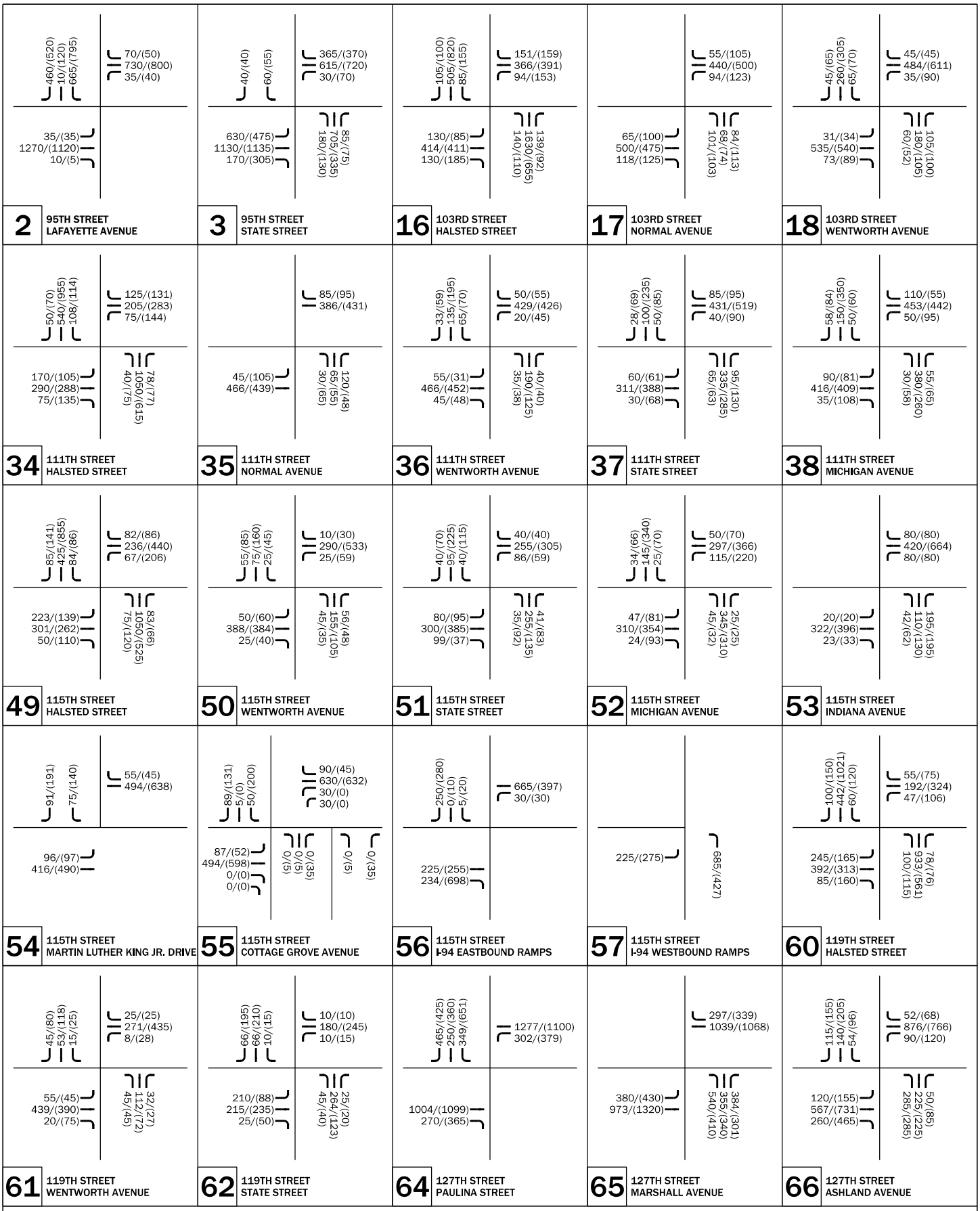
SUMMARY OF INFO FROM PMC

- 2017 – BOARDINGS AND MODE OF ACCESS

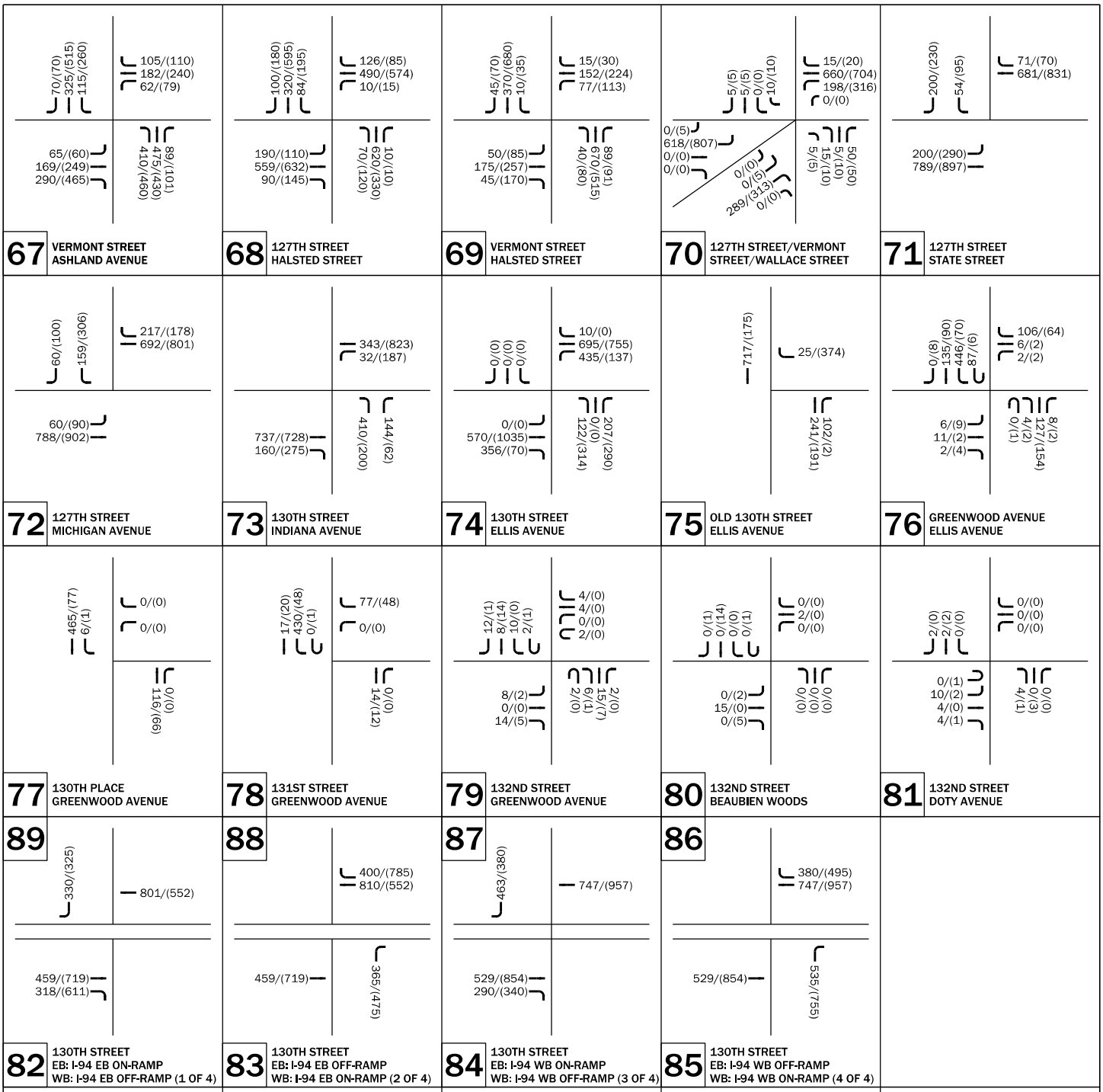
Station	Walk	KnR	PnR	Transfer	Total
103rd	2,531	403	232	2,149	5,315
111th	1,529	681	142	1,927	4,279
Michigan	1,464	376	1,043	2,765	5,648
130th	526	429	931	2,032	3,918

- 2037 – BOARDINGS AND MODE OF ACCESS – UPDATED 10/16/2020

Station	Walk	KnR	PnR	Transfer	Total
103rd	3,120	427	189	2,229	5,965
111th	1,992	748	171	1,469	4,380
Michigan	1,813	406	863	2,977	6,059
130th	694	435	1,084	3,705	5,918

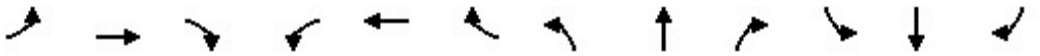


BUILD (2050) INTERSECTION TRAFFIC VOLUMES (UNMITIGATED)



BUILD (2050) INTERSECTION TRAFFIC VOLUMES (UNMITIGATED)

PAGE 2 OF 2



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	570	356	435	695	10	122	0	207	0	0	0
Future Volume (vph)	0	570	356	435	695	10	122	0	207	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	12	12	12	16	12
Storage Length (ft)	165		165	165		165	0		0	0		0
Storage Lanes	1		1	1		1	0		1	0		0
Taper Length (ft)	210			200			25			25		
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.850			0.850			0.850			
Flt Protected				0.950				0.950				
Satd. Flow (prot)	1800	3109	1471	1644	3138	1366	0	1449	1443	0	2040	0
Flt Permitted				0.356				0.757				
Satd. Flow (perm)	1800	3109	1471	616	3138	1366	0	1155	1443	0	2040	0
Right Turn on Red			No			No			No			No
Satd. Flow (RTOR)												
Link Speed (mph)		35			35			30			30	
Link Distance (ft)		5340			1172			141			331	
Travel Time (s)		104.0			22.8			3.2			7.5	
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Heavy Vehicles (%)	0%	10%	4%	4%	9%	12%	18%	0%	6%	100%	0%	0%
Adj. Flow (vph)	0	594	371	453	724	10	127	0	216	0	0	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	594	371	453	724	10	0	127	216	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)		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	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07	0.91	1.07
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	1	1	1	1	1	1	1	1	1	1	
Detector Template												
Leading Detector (ft)	50	50	50	50	50	50	50	50	50	50	50	
Trailing Detector (ft)	0	0	0	0	0	0	0	0	0	0	0	
Detector 1 Position(ft)	0	0	0	0	0	0	0	0	0	0	0	
Detector 1 Size(ft)	50	50	50	50	50	50	50	50	50	50	50	
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Turn Type	Perm	NA	Perm	pm+pt	NA	Perm	Perm	NA	Perm			
Protected Phases		4		3	8			2			6	
Permitted Phases	4		4	8		8	2		2	6		
Detector Phase	4	4	4	3	8	8	2	2	2	6	6	
Switch Phase												
Minimum Initial (s)	43.0	43.0	43.0	7.0	43.0	43.0	6.0	6.0	6.0	6.0	6.0	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Minimum Split (s)	47.0	47.0	47.0	10.0	47.0	47.0	10.0	10.0	10.0	10.0	10.0	
Total Split (s)	47.0	47.0	47.0	10.0	57.0	57.0	28.0	28.0	28.0	28.0	28.0	
Total Split (%)	55.3%	55.3%	55.3%	11.8%	67.1%	67.1%	32.9%	32.9%	32.9%	32.9%	32.9%	
Maximum Green (s)	43.0	43.0	43.0	7.0	53.0	53.0	24.0	24.0	24.0	24.0	24.0	
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	
All-Red Time (s)	1.0	1.0	1.0	0.0	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		0.0	
Total Lost Time (s)	4.0	4.0	4.0	3.0	4.0	4.0		4.0	4.0		4.0	
Lead/Lag	Lag	Lag	Lag	Lead								
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	6.0	6.0	6.0	6.0	6.0	
Recall Mode	C-Max	C-Max	C-Max	None	C-Max	C-Max	None	None	None	None	None	
Act Effct Green (s)		43.4	43.4	58.1	57.1	57.1		19.9	19.9			
Actuated g/C Ratio		0.51	0.51	0.68	0.67	0.67		0.23	0.23			
v/c Ratio		0.37	0.49	0.82	0.34	0.01		0.47	0.64			
Control Delay		13.5	16.6	25.6	7.0	5.9		32.9	37.6			
Queue Delay		0.0	0.0	0.0	0.0	0.0		0.0	0.0			
Total Delay		13.5	16.6	25.6	7.0	5.9		32.9	37.6			
LOS		B	B	C	A	A		C	D			
Approach Delay		14.7			14.1			35.9				
Approach LOS		B			B			D				
90th %ile Green (s)	43.0	43.0	43.0	7.0	53.0	53.0	24.0	24.0	24.0	24.0	24.0	
90th %ile Term Code	Coord	Coord	Coord	Max	Coord	Coord	Max	Max	Max	Hold	Hold	
70th %ile Green (s)	43.0	43.0	43.0	7.2	53.2	53.2	23.8	23.8	23.8	23.8	23.8	
70th %ile Term Code	Coord	Coord	Coord	Max	Coord	Coord	Gap	Gap	Gap	Hold	Hold	
50th %ile Green (s)	43.0	43.0	43.0	10.6	56.6	56.6	20.4	20.4	20.4	20.4	20.4	
50th %ile Term Code	Coord	Coord	Coord	Max	Coord	Coord	Gap	Gap	Gap	Hold	Hold	
30th %ile Green (s)	43.0	43.0	43.0	13.3	59.3	59.3	17.7	17.7	17.7	17.7	17.7	
30th %ile Term Code	Coord	Coord	Coord	Max	Coord	Coord	Gap	Gap	Gap	Hold	Hold	
10th %ile Green (s)	45.0	45.0	45.0	15.4	63.4	63.4	13.6	13.6	13.6	13.6	13.6	
10th %ile Term Code	Coord	Coord	Coord	Gap	Coord	Coord	Gap	Gap	Gap	Hold	Hold	
Stops (vph)		327	226	160	280	5		104	184			
Fuel Used(gal)		26	17	8	10	0		2	3			
CO Emissions (g/hr)		1818	1162	551	710	11		107	198			
NOx Emissions (g/hr)		354	226	107	138	2		21	38			
VOC Emissions (g/hr)		421	269	128	165	2		25	46			
Dilemma Vehicles (#)		34	0	0	41	0		0	0			
Queue Length 50th (ft)		96	124	93	77	2		60	107			
Queue Length 95th (ft)		134	200	#274	122	7		m106	m170			
Internal Link Dist (ft)		5260			1092			61			251	
Turn Bay Length (ft)			165	165		165						
Base Capacity (vph)		1587	751	550	2108	917		326	407			
Starvation Cap Reductn		0	0	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		0.37	0.49	0.82	0.34	0.01		0.39	0.53			

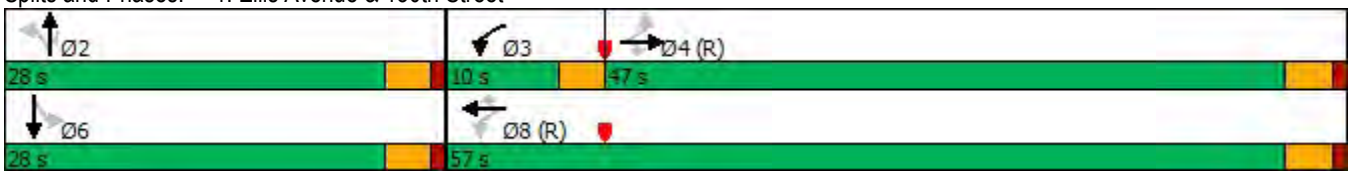
Intersection Summary

Area Type: Other

Cycle Length: 85	
Actuated Cycle Length: 85	
Offset: 0 (0%), Referenced to phase 4:EBTL and 8:WBTL, Start of Green	
Natural Cycle: 75	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.82	
Intersection Signal Delay: 17.3	Intersection LOS: B
Intersection Capacity Utilization 88.8%	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: 1: Ellis Avenue & 130th Street



Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	0	25	241	102	0	717
Future Volume (vph)	0	25	241	102	0	717
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Lane Util. Factor	1.00	1.00	0.95	0.95	1.00	0.95
Frt		0.865	0.956			
Flt Protected						
Satd. Flow (prot)	0	1557	3270	0	0	3420
Flt Permitted						
Satd. Flow (perm)	0	1557	3270	0	0	3420
Link Speed (mph)	30		30			30
Link Distance (ft)	642		174			141
Travel Time (s)	14.6		4.0			3.2
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%
Adj. Flow (vph)	0	28	268	113	0	797
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	28	381	0	0	797
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(ft)	0		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
Turning Speed (mph)	15	9		9	15	
Sign Control	Stop		Free			Free

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 24.3%		ICU Level of Service A	
Analysis Period (min) 15			

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	0	25	241	102	0	717
Future Volume (Veh/h)	0	25	241	102	0	717
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	0	28	268	113	0	797
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type			None			None
Median storage veh)						
Upstream signal (ft)						141
pX, platoon unblocked						
vC, conflicting volume	723	190			381	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	723	190			381	
tC, single (s)	6.8	6.9			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	100	97			100	
cM capacity (veh/h)	365	825			1189	

Direction, Lane #	WB 1	NB 1	NB 2	SB 1	SB 2
Volume Total	28	179	202	398	398
Volume Left	0	0	0	0	0
Volume Right	28	0	113	0	0
cSH	825	1700	1700	1700	1700
Volume to Capacity	0.03	0.11	0.12	0.23	0.23
Queue Length 95th (ft)	3	0	0	0	0
Control Delay (s)	9.5	0.0	0.0	0.0	0.0
Lane LOS	A				
Approach Delay (s)	9.5	0.0		0.0	
Approach LOS	A				

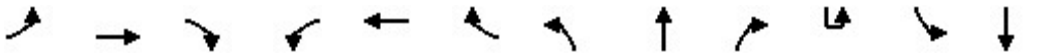
Intersection Summary				
Average Delay	0.2			
Intersection Capacity Utilization	24.3%	ICU Level of Service		A
Analysis Period (min)	15			

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBU	SBL	SBT
Lane Configurations												
Traffic Volume (vph)	6	11	2	2	6	106	4	127	8	87	446	135
Future Volume (vph)	6	11	2	2	6	106	4	127	8	87	446	135
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
Ped Bike Factor												
Frt		0.987			0.875			0.992				
Flt Protected		0.984			0.999			0.999				0.962
Satd. Flow (prot)	0	1748	0	0	1573	0	0	1727	0	0	0	1641
Flt Permitted		0.984			0.999			0.999				0.962
Satd. Flow (perm)	0	1748	0	0	1573	0	0	1727	0	0	0	1641
Link Speed (mph)		30			30			30				30
Link Distance (ft)		472			392			265				174
Travel Time (s)		10.7			8.9			6.0				4.0
Confl. Peds. (#/hr)			4	4		1			1	4	1	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	0%	2%	25%	0%	8%	1%
Adj. Flow (vph)	7	12	2	2	7	118	4	141	9	97	496	150
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	21	0	0	127	0	0	154	0	0	0	743
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	R NA	Left	Left
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	1.07	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	9	15	
Sign Control		Stop			Stop			Free				Free

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization	64.4%	ICU Level of Service	C
Analysis Period (min)	15		

Lane Group	SBR
Lane Configurations	
Traffic Volume (vph)	0
Future Volume (vph)	0
Ideal Flow (vphpl)	1800
Lane Util. Factor	1.00
Ped Bike Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	1800
Flt Permitted	
Satd. Flow (perm)	1800
Link Speed (mph)	
Link Distance (ft)	
Travel Time (s)	
Confl. Peds. (#/hr)	4
Peak Hour Factor	0.90
Heavy Vehicles (%)	0%
Adj. Flow (vph)	0
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
Sign Control	

Intersection Summary



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBU	SBL	SBT
Lane Configurations												
Traffic Volume (veh/h)	6	11	2	2	6	106	4	127	8	87	446	135
Future Volume (Veh/h)	6	11	2	2	6	106	4	127	8	87	446	135
Sign Control		Stop			Stop			Free				Free
Grade		0%			0%			0%				0%
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	7	12	2	2	7	118	4	141	9	0	496	150
Pedestrians		4			1			4				1
Lane Width (ft)		12.0			12.0			12.0				12.0
Walking Speed (ft/s)		4.0			4.0			4.0				4.0
Percent Blockage		0			0			0				0
Right turn flare (veh)												
Median type								None				None
Median storage veh)												
Upstream signal (ft)												315
pX, platoon unblocked	0.89	0.89	0.89	0.89	0.89		0.89			0.00		
vC, conflicting volume	1422	1305	158	1308	1300	148	154			0	151	
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1412	1281	0	1285	1276	148	0			0	151	
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			0.0	4.2	
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			0.0	2.3	
p0 queue free %	89	87	100	98	93	87	100			0	64	
cM capacity (veh/h)	61	95	966	83	96	903	1454			0	1393	

Direction, Lane #	EB 1	WB 1	NB 1	SB 1	SB 2
Volume Total	21	127	154	646	0
Volume Left	7	2	4	496	0
Volume Right	2	118	9	0	0
cSH	87	557	1454	1393	1700
Volume to Capacity	0.24	0.23	0.00	0.36	0.00
Queue Length 95th (ft)	22	22	0	41	0
Control Delay (s)	59.3	13.4	0.2	7.7	0.0
Lane LOS	F	B	A	A	
Approach Delay (s)	59.3	13.4	0.2	7.7	
Approach LOS	F	B			

Intersection Summary				
Average Delay	8.4			
Intersection Capacity Utilization	64.4%	ICU Level of Service	C	
Analysis Period (min)	15			

Movement	SBR
Lane Configurations	
Traffic Volume (veh/h)	0
Future Volume (Veh/h)	0
Sign Control	
Grade	
Peak Hour Factor	0.90
Hourly flow rate (vph)	0
Pedestrians	
Lane Width (ft)	
Walking Speed (ft/s)	
Percent Blockage	
Right turn flare (veh)	
Median type	
Median storage veh)	
Upstream signal (ft)	
pX, platoon unblocked	
vC, conflicting volume	
vC1, stage 1 conf vol	
vC2, stage 2 conf vol	
vCu, unblocked vol	
tC, single (s)	
tC, 2 stage (s)	
tF (s)	
p0 queue free %	
cM capacity (veh/h)	
Direction, Lane #	

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	0	0	116	0	6	465
Future Volume (vph)	0	0	116	0	6	465
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt						
Flt Protected						0.999
Satd. Flow (prot)	1765	0	1765	0	0	1763
Flt Permitted						0.999
Satd. Flow (perm)	1765	0	1765	0	0	1763
Link Speed (mph)	30		30			30
Link Distance (ft)	356		300			278
Travel Time (s)	8.1		6.8			6.3
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	126	0	7	505
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	0	126	0	0	512
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
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
Turning Speed (mph)	15	9		9	15	
Sign Control	Stop		Free			Free

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 34.2%		ICU Level of Service A	
Analysis Period (min) 15			

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	0	0	116	0	6	465
Future Volume (Veh/h)	0	0	116	0	6	465
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	0	126	0	7	505
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type			None			None
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	645	126			126	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	645	126			126	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	100	100			100	
cM capacity (veh/h)	435	924			1460	

Direction, Lane #	WB 1	NB 1	SB 1
Volume Total	0	126	512
Volume Left	0	0	7
Volume Right	0	0	0
cSH	1700	1700	1460
Volume to Capacity	0.00	0.07	0.00
Queue Length 95th (ft)	0	0	0
Control Delay (s)	0.0	0.0	0.2
Lane LOS	A		A
Approach Delay (s)	0.0	0.0	0.2
Approach LOS	A		

Intersection Summary			
Average Delay	0.1		
Intersection Capacity Utilization	34.2%	ICU Level of Service	A
Analysis Period (min)	15		

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	0	77	14	0	430	17
Future Volume (vph)	0	77	14	0	430	17
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt	0.865					
Flt Protected						0.954
Satd. Flow (prot)	1557	0	1800	0	0	1710
Flt Permitted						0.954
Satd. Flow (perm)	1557	0	1800	0	0	1710
Link Speed (mph)	30		30			30
Link Distance (ft)	383		252			706
Travel Time (s)	8.7		5.7			16.0
Confl. Peds. (#/hr)	3			3		
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles (%)	0%	0%	0%	0%	0%	11%
Adj. Flow (vph)	0	86	16	0	478	19
Shared Lane Traffic (%)						
Lane Group Flow (vph)	86	0	16	0	0	497
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
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
Turning Speed (mph)	15	9		9	15	
Sign Control	Stop		Free			Free

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization	44.5%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	0	77	14	0	430	17
Future Volume (Veh/h)	0	77	14	0	430	17
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	0	86	16	0	478	19
Pedestrians	3		3			
Lane Width (ft)	12.0		12.0			
Walking Speed (ft/s)	4.0		4.0			
Percent Blockage	0		0			
Right turn flare (veh)						
Median type			None			None
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	997	19			19	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	997	19			19	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	100	92			70	
cM capacity (veh/h)	191	1062			1607	

Direction, Lane #	WB 1	NB 1	SB 1
Volume Total	86	16	497
Volume Left	0	0	478
Volume Right	86	0	0
cSH	1062	1700	1607
Volume to Capacity	0.08	0.01	0.30
Queue Length 95th (ft)	7	0	31
Control Delay (s)	8.7	0.0	8.0
Lane LOS	A		A
Approach Delay (s)	8.7	0.0	8.0
Approach LOS	A		

Intersection Summary			
Average Delay	7.9		
Intersection Capacity Utilization	44.5%	ICU Level of Service	A
Analysis Period (min)	15		

Lane Group	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU
Lane Configurations												
Traffic Volume (vph)	8	0	14	2	0	4	4	2	6	15	2	2
Future Volume (vph)	8	0	14	2	0	4	4	2	6	15	2	2
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
Frt		0.914				0.946				0.990		
Flt Protected		0.982				0.990				0.984		
Satd. Flow (prot)	0	1616	0	0	0	1686	0	0	0	1637	0	0
Flt Permitted		0.982				0.990				0.984		
Satd. Flow (perm)	0	1616	0	0	0	1686	0	0	0	1637	0	0
Link Speed (mph)		30				30				30		
Link Distance (ft)		336				1025				274		
Travel Time (s)		7.6				23.3				6.2		
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	100%	0%
Adj. Flow (vph)	9	0	16	2	0	4	4	2	7	17	2	2
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	25	0	0	0	10	0	0	0	28	0	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	R NA	Left	Left	Right	R NA	Left	Left	Right	R NA
Median Width(ft)		0				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)	15		9	9	15		9	9	15		9	9
Sign Control		Stop				Stop				Free		

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 13.3%		ICU Level of Service A	
Analysis Period (min) 15			

Lane Group	SBL	SBT	SBR
Lane Configurations			
Traffic Volume (vph)	10	8	12
Future Volume (vph)	10	8	12
Ideal Flow (vphpl)	1800	1800	1800
Lane Util. Factor	1.00	1.00	1.00
Frt		0.950	
Flt Protected		0.982	
Satd. Flow (prot)	0	1578	0
Flt Permitted		0.982	
Satd. Flow (perm)	0	1578	0
Link Speed (mph)		30	
Link Distance (ft)		252	
Travel Time (s)		5.7	
Peak Hour Factor	0.90	0.90	0.90
Heavy Vehicles (%)	0%	25%	0%
Adj. Flow (vph)	11	9	13
Shared Lane Traffic (%)			
Lane Group Flow (vph)	0	35	0
Enter Blocked Intersection	No	No	No
Lane Alignment	Left	Left	Right
Median Width(ft)		0	
Link Offset(ft)		0	
Crosswalk Width(ft)		16	
Two way Left Turn Lane			
Headway Factor	1.07	1.07	1.07
Turning Speed (mph)	15		9
Sign Control		Free	

Intersection Summary

Movement	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU
Lane Configurations												
Traffic Volume (veh/h)	8	0	14	2	0	4	4	2	6	15	2	2
Future Volume (Veh/h)	8	0	14	2	0	4	4	2	6	15	2	2
Sign Control		Stop				Stop				Free		
Grade		0%				0%				0%		
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	9	0	16	0	0	4	4	0	7	17	2	0
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type										None		
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked				0.00				0.00				0.00
vC, conflicting volume	76	70	16	0	86	76	18	0	22			0
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	76	70	16	0	86	76	18	0	22			0
tC, single (s)	7.1	6.5	6.2	0.0	7.1	6.5	6.2	0.0	4.1			0.0
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	0.0	3.5	4.0	3.3	0.0	2.2			0.0
p0 queue free %	99	100	99	0	100	100	100	0	100			0
cM capacity (veh/h)	905	815	1070	0	884	809	1066	0	1607			0

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	25	8	26	33
Volume Left	9	0	7	11
Volume Right	16	4	2	13
cSH	1004	920	1607	1611
Volume to Capacity	0.02	0.01	0.00	0.01
Queue Length 95th (ft)	2	1	0	1
Control Delay (s)	8.7	8.9	2.0	2.5
Lane LOS	A	A	A	A
Approach Delay (s)	8.7	8.9	2.0	2.5
Approach LOS	A	A		

Intersection Summary				
Average Delay	4.6			
Intersection Capacity Utilization	13.3%	ICU Level of Service	A	
Analysis Period (min)	15			

Movement	SBL	SBT	SBR
Lane Configurations			
Traffic Volume (veh/h)	10	8	12
Future Volume (Veh/h)	10	8	12
Sign Control		Free	
Grade		0%	
Peak Hour Factor	0.90	0.90	0.90
Hourly flow rate (vph)	11	9	13
Pedestrians			
Lane Width (ft)			
Walking Speed (ft/s)			
Percent Blockage			
Right turn flare (veh)			
Median type		None	
Median storage veh)			
Upstream signal (ft)			
pX, platoon unblocked			
vC, conflicting volume	19		
vC1, stage 1 conf vol			
vC2, stage 2 conf vol			
vCu, unblocked vol	19		
tC, single (s)	4.1		
tC, 2 stage (s)			
tF (s)	2.2		
p0 queue free %	99		
cM capacity (veh/h)	1611		
Direction, Lane #			

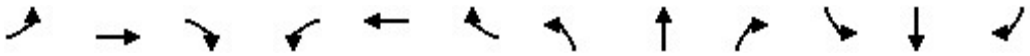
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	SEL	SET	SER	NWL	NWT	NWR
Lane Configurations												
Traffic Volume (vph)	0	15	0	0	2	0	0	0	0	0	0	0
Future Volume (vph)	0	15	0	0	2	0	0	0	0	0	0	0
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt												
Flt Protected												
Satd. Flow (prot)	0	1104	0	0	1800	0	0	1800	0	0	1800	0
Flt Permitted												
Satd. Flow (perm)	0	1104	0	0	1800	0	0	1800	0	0	1800	0
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		1025			255			543			489	
Travel Time (s)		23.3			5.8			12.3			11.1	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles (%)	0%	63%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Adj. Flow (vph)	0	17	0	0	2	0	0	0	0	0	0	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	17	0	0	2	0	0	0	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	1.07	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
Sign Control		Free			Free			Stop			Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 6.7%		ICU Level of Service A	
Analysis Period (min) 15			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	SEL	SET	SER	NWL	NWT	NWR
Lane Configurations												
Traffic Volume (veh/h)	0	15	0	0	2	0	0	0	0	0	0	0
Future Volume (Veh/h)	0	15	0	0	2	0	0	0	0	0	0	0
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	0	17	0	0	2	0	0	0	0	0	0	0
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	2			17			19	19	2	19	19	17
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	2			17			19	19	2	19	19	17
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	100			100			100	100	100	100	100	100
cM capacity (veh/h)	1634			1613			1000	879	1088	1000	879	1068

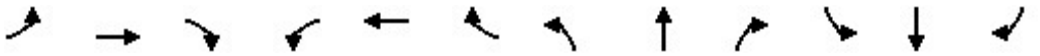
Direction, Lane #	EB 1	WB 1	SE 1	NW 1
Volume Total	17	2	0	0
Volume Left	0	0	0	0
Volume Right	0	0	0	0
cSH	1634	1613	1700	1700
Volume to Capacity	0.00	0.00	0.00	0.00
Queue Length 95th (ft)	0	0	0	0
Control Delay (s)	0.0	0.0	0.0	0.0
Lane LOS			A	A
Approach Delay (s)	0.0	0.0	0.0	0.0
Approach LOS			A	A

Intersection Summary				
Average Delay	0.0			
Intersection Capacity Utilization	6.7%	ICU Level of Service	A	
Analysis Period (min)	15			



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	10	4	4	0	0	0	4	0	0	0	2	2
Future Volume (vph)	10	4	4	0	0	0	4	0	0	0	2	2
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
Frt		0.972									0.932	
Flt Protected		0.972						0.950				
Satd. Flow (prot)	0	1667	0	0	1765	0	0	1676	0	0	1645	0
Flt Permitted		0.972						0.950				
Satd. Flow (perm)	0	1667	0	0	1765	0	0	1676	0	0	1645	0
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		328			319			317			301	
Travel Time (s)		7.5			7.3			7.2			6.8	
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
Adj. Flow (vph)	11	4	4	0	0	0	4	0	0	0	2	2
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	19	0	0	0	0	0	4	0	0	4	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	1.07	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
Sign Control		Stop			Stop			Free			Free	

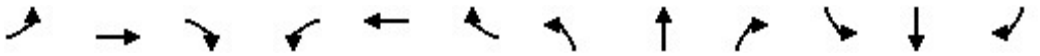
Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 13.5%		ICU Level of Service A	
Analysis Period (min) 15			



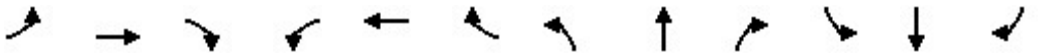
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	10	4	4	0	0	0	4	0	0	0	2	2
Future Volume (Veh/h)	10	4	4	0	0	0	4	0	0	0	2	2
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	11	4	4	0	0	0	4	0	0	0	2	2
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	11	11	3	17	12	0	4			0		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	11	11	3	17	12	0	4			0		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	99	100	100	100	100	100	100			100		
cM capacity (veh/h)	1005	882	1081	989	880	1085	1618			1623		

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	19	0	4	4
Volume Left	11	0	4	0
Volume Right	4	0	0	2
cSH	990	1700	1618	1700
Volume to Capacity	0.02	0.00	0.00	0.00
Queue Length 95th (ft)	1	0	0	0
Control Delay (s)	8.7	0.0	7.2	0.0
Lane LOS	A	A	A	
Approach Delay (s)	8.7	0.0	7.2	0.0
Approach LOS	A	A		

Intersection Summary				
Average Delay	7.2			
Intersection Capacity Utilization	13.5%	ICU Level of Service	A	
Analysis Period (min)	15			



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	1035	70	137	755	0	314	0	290	0	0	0
Future Volume (vph)	0	1035	70	137	755	0	314	0	290	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	12	12	12	16	12
Storage Length (ft)	165		165	165		165	0		0	0		0
Storage Lanes	1		1	1		1	0		1	0		0
Taper Length (ft)	210			200			25			25		
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.850						0.850			
Flt Protected				0.950				0.950				
Satd. Flow (prot)	1800	3320	1530	1644	3320	1800	0	1710	1500	0	2040	0
Flt Permitted				0.162				0.757				
Satd. Flow (perm)	1800	3320	1530	280	3320	1800	0	1363	1500	0	2040	0
Right Turn on Red			No			No			No			No
Satd. Flow (RTOR)												
Link Speed (mph)		35			35			30			30	
Link Distance (ft)		5343			1170			134			331	
Travel Time (s)		104.1			22.8			3.0			7.5	
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Heavy Vehicles (%)	0%	3%	0%	4%	3%	0%	0%	0%	2%	0%	0%	0%
Adj. Flow (vph)	0	1078	73	143	786	0	327	0	302	0	0	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	1078	73	143	786	0	0	327	302	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)		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	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07	0.91	1.07
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	1	1	1	1	1	1	1	1	1	1	
Detector Template												
Leading Detector (ft)	50	50	50	50	50	50	50	50	50	50	50	
Trailing Detector (ft)	0	0	0	0	0	0	0	0	0	0	0	
Detector 1 Position(ft)	0	0	0	0	0	0	0	0	0	0	0	
Detector 1 Size(ft)	50	50	50	50	50	50	50	50	50	50	50	
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Turn Type	Perm	NA	Perm	pm+pt	NA	Perm	Perm	NA	Perm			
Protected Phases		4		3	8			2			6	
Permitted Phases	4		4	8		8	2		2	6		
Detector Phase	4	4	4	3	8	8	2	2	2	6	6	
Switch Phase												
Minimum Initial (s)	33.0	33.0	33.0	7.0	43.0	43.0	6.0	6.0	6.0	6.0	6.0	



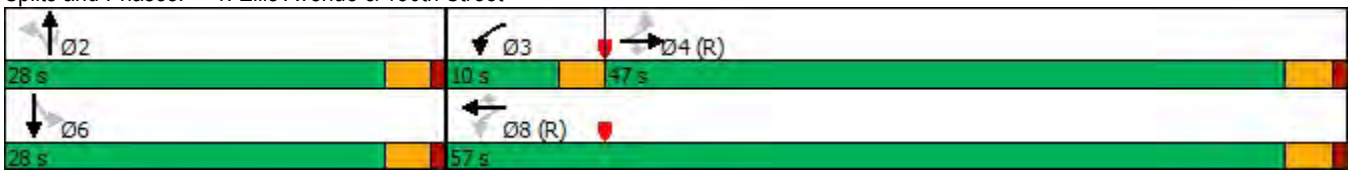
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Minimum Split (s)	37.0	37.0	37.0	10.0	47.0	47.0	10.0	10.0	10.0	10.0	10.0	
Total Split (s)	47.0	47.0	47.0	10.0	57.0	57.0	28.0	28.0	28.0	28.0	28.0	
Total Split (%)	55.3%	55.3%	55.3%	11.8%	67.1%	67.1%	32.9%	32.9%	32.9%	32.9%	32.9%	
Maximum Green (s)	43.0	43.0	43.0	7.0	53.0	53.0	24.0	24.0	24.0	24.0	24.0	
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	
All-Red Time (s)	1.0	1.0	1.0	0.0	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		0.0	
Total Lost Time (s)	4.0	4.0	4.0	3.0	4.0	4.0		4.0	4.0		4.0	
Lead/Lag	Lag	Lag	Lag	Lead								
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	6.0	6.0	6.0	6.0	6.0	
Recall Mode	C-Max	C-Max	C-Max	None	C-Max	C-Max	None	None	None	None	None	
Act Effct Green (s)		43.6	43.6	54.6	53.6			23.4	23.4			
Actuated g/C Ratio		0.51	0.51	0.64	0.63			0.28	0.28			
v/c Ratio		0.63	0.09	0.49	0.38			0.87	0.73			
Control Delay		17.2	11.4	12.0	8.3			54.8	39.9			
Queue Delay		0.0	0.0	0.0	0.0			0.0	0.0			
Total Delay		17.2	11.4	12.0	8.3			54.8	39.9			
LOS		B	B	B	A			D	D			
Approach Delay		16.8			8.9			47.6				
Approach LOS		B			A			D				
90th %ile Green (s)	43.0	43.0	43.0	7.0	53.0	53.0	24.0	24.0	24.0	24.0	24.0	
90th %ile Term Code	Coord	Coord	Coord	Max	Coord	Coord	Max	Max	Max	Hold	Hold	
70th %ile Green (s)	43.0	43.0	43.0	7.0	53.0	53.0	24.0	24.0	24.0	24.0	24.0	
70th %ile Term Code	Coord	Coord	Coord	Max	Coord	Coord	Max	Max	Max	Hold	Hold	
50th %ile Green (s)	43.0	43.0	43.0	7.0	53.0	53.0	24.0	24.0	24.0	24.0	24.0	
50th %ile Term Code	Coord	Coord	Coord	Max	Coord	Coord	Max	Max	Max	Hold	Hold	
30th %ile Green (s)	43.0	43.0	43.0	7.0	53.0	53.0	24.0	24.0	24.0	24.0	24.0	
30th %ile Term Code	Coord	Coord	Coord	Max	Coord	Coord	Max	Max	Max	Hold	Hold	
10th %ile Green (s)	46.2	46.2	46.2	7.0	56.2	56.2	20.8	20.8	20.8	20.8	20.8	
10th %ile Term Code	Coord	Coord	Coord	Min	Coord	Coord	Gap	Gap	Gap	Hold	Hold	
Stops (vph)		713	35	51	339			272	254			
Fuel Used(gal)		49	3	2	11			5	4			
CO Emissions (g/hr)		3419	218	147	803			373	284			
NOx Emissions (g/hr)		665	43	29	156			73	55			
VOC Emissions (g/hr)		792	51	34	186			86	66			
Dilemma Vehicles (#)		61	0	0	44			0	0			
Queue Length 50th (ft)		210	19	27	97			164	144			
Queue Length 95th (ft)		276	41	50	131			#311	#256			
Internal Link Dist (ft)		5263			1090			54			251	
Turn Bay Length (ft)			165	165								
Base Capacity (vph)		1704	785	292	2095			384	423			
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		0.63	0.09	0.49	0.38			0.85	0.71			

Intersection Summary	
Area Type:	Other

Cycle Length: 85	
Actuated Cycle Length: 85	
Offset: 0 (0%), Referenced to phase 4:EBTL and 8:WBTL, Start of Green	
Natural Cycle: 70	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.87	
Intersection Signal Delay: 21.3	Intersection LOS: C
Intersection Capacity Utilization 91.7%	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: Ellis Avenue & 130th Street



Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	0	374	191	2	0	175
Future Volume (vph)	0	374	191	2	0	175
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Lane Util. Factor	1.00	1.00	0.95	0.95	1.00	0.95
Frt		0.865	0.999			
Flt Protected						
Satd. Flow (prot)	0	1557	3417	0	0	3420
Flt Permitted						
Satd. Flow (perm)	0	1557	3417	0	0	3420
Link Speed (mph)	30		30			30
Link Distance (ft)	602		184			134
Travel Time (s)	13.7		4.2			3.0
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%
Adj. Flow (vph)	0	416	212	2	0	194
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	416	214	0	0	194
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(ft)	0		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
Turning Speed (mph)	15	9		9	15	
Sign Control	Stop		Free			Free

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 36.8%		ICU Level of Service A	
Analysis Period (min) 15			

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	0	374	191	2	0	175
Future Volume (Veh/h)	0	374	191	2	0	175
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	0	416	212	2	0	194
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type			None			None
Median storage veh)						
Upstream signal (ft)						134
pX, platoon unblocked						
vC, conflicting volume	310	107			214	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	310	107			214	
tC, single (s)	6.8	6.9			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	100	55			100	
cM capacity (veh/h)	663	933			1368	

Direction, Lane #	WB 1	NB 1	NB 2	SB 1	SB 2
Volume Total	416	141	73	97	97
Volume Left	0	0	0	0	0
Volume Right	416	0	2	0	0
cSH	933	1700	1700	1700	1700
Volume to Capacity	0.45	0.08	0.04	0.06	0.06
Queue Length 95th (ft)	58	0	0	0	0
Control Delay (s)	11.9	0.0	0.0	0.0	0.0
Lane LOS	B				
Approach Delay (s)	11.9	0.0		0.0	
Approach LOS	B				

Intersection Summary			
Average Delay	6.0		
Intersection Capacity Utilization	36.8%	ICU Level of Service	A
Analysis Period (min)	15		

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL
Lane Configurations												
Traffic Volume (vph)	9	2	4	2	2	64	1	2	154	2	6	70
Future Volume (vph)	9	2	4	2	2	64	1	2	154	2	6	70
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
Ped Bike Factor												
Frt		0.966			0.872				0.998			
Flt Protected		0.970			0.999				0.999			
Satd. Flow (prot)	0	1687	0	0	1568	0	0	0	1744	0	0	0
Flt Permitted		0.970			0.999				0.999			
Satd. Flow (perm)	0	1687	0	0	1568	0	0	0	1744	0	0	0
Link Speed (mph)		30			30				30			
Link Distance (ft)		472			392				265			
Travel Time (s)		10.7			8.9				6.0			
Confl. Peds. (#/hr)						43				43		43
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	0%	0%	3%	0%	0%	4%
Adj. Flow (vph)	10	2	4	2	2	71	1	2	171	2	7	78
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	16	0	0	75	0	0	0	176	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	R NA	Left	Left	Right	R NA	Left
Median Width(ft)		0			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)	15		9	15		9	9	15		9	9	15
Sign Control		Stop			Stop				Free			

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization	43.7%	ICU Level of Service	A
Analysis Period (min)	15		

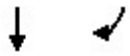
Lane Group	SBT	SBR
Lane Configurations		
Traffic Volume (vph)	90	8
Future Volume (vph)	90	8
Ideal Flow (vphpl)	1800	1800
Lane Util. Factor	1.00	1.00
Ped Bike Factor		
Frt		0.850
Flt Protected	0.978	
Satd. Flow (prot)	1722	1530
Flt Permitted	0.978	
Satd. Flow (perm)	1722	1530
Link Speed (mph)	30	
Link Distance (ft)	184	
Travel Time (s)	4.2	
Confl. Peds. (#/hr)		
Peak Hour Factor	0.90	0.90
Heavy Vehicles (%)	1%	0%
Adj. Flow (vph)	100	9
Shared Lane Traffic (%)		
Lane Group Flow (vph)	185	9
Enter Blocked Intersection	No	No
Lane Alignment	Left	Right
Median Width(ft)	0	
Link Offset(ft)	0	
Crosswalk Width(ft)	16	
Two way Left Turn Lane		
Headway Factor	1.07	1.07
Turning Speed (mph)		9
Sign Control	Free	

Intersection Summary

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL
Lane Configurations												
Traffic Volume (veh/h)	9	2	4	2	2	64	1	2	154	2	6	70
Future Volume (Veh/h)	9	2	4	2	2	64	1	2	154	2	6	70
Sign Control		Stop			Stop				Free			
Grade		0%			0%				0%			
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	10	2	4	2	2	71	0	2	171	2	0	78
Pedestrians					43							
Lane Width (ft)					12.0							
Walking Speed (ft/s)					4.0							
Percent Blockage					4							
Right turn flare (veh)												
Median type									None			
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked							0.00				0.00	
vC, conflicting volume	547	476	100	480	484	258	0	109			0	216
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	547	476	100	480	484	258	0	109			0	216
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	0.0	4.1			0.0	4.1
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	0.0	2.2			0.0	2.2
p0 queue free %	97	100	100	100	100	90	0	100			0	94
cM capacity (veh/h)	363	444	961	443	439	730	0	1494			0	1294

Direction, Lane #	EB 1	WB 1	NB 1	SB 1	SB 2
Volume Total	16	75	175	178	9
Volume Left	10	2	2	78	0
Volume Right	4	71	2	0	9
cSH	441	706	1494	1294	1700
Volume to Capacity	0.04	0.11	0.00	0.06	0.01
Queue Length 95th (ft)	3	9	0	5	0
Control Delay (s)	13.5	10.7	0.1	3.8	0.0
Lane LOS	B	B	A	A	
Approach Delay (s)	13.5	10.7	0.1	3.6	
Approach LOS	B	B			

Intersection Summary				
Average Delay	3.8			
Intersection Capacity Utilization	43.7%	ICU Level of Service	A	
Analysis Period (min)	15			



Movement	SBT	SBR
Lane Configurations		
Traffic Volume (veh/h)	90	8
Future Volume (Veh/h)	90	8
Sign Control	Free	
Grade	0%	
Peak Hour Factor	0.90	0.90
Hourly flow rate (vph)	100	9
Pedestrians	43	
Lane Width (ft)	12.0	
Walking Speed (ft/s)	4.0	
Percent Blockage	4	
Right turn flare (veh)		
Median type	None	
Median storage veh)		
Upstream signal (ft)	318	
pX, platoon unblocked		
vC, conflicting volume		
vC1, stage 1 conf vol		
vC2, stage 2 conf vol		
vCu, unblocked vol		
tC, single (s)		
tC, 2 stage (s)		
tF (s)		
p0 queue free %		
cM capacity (veh/h)		
Direction, Lane #		

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	0	0	66	0	1	77
Future Volume (vph)	0	0	66	0	1	77
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt						
Flt Protected						0.999
Satd. Flow (prot)	1765	0	1765	0	0	1763
Flt Permitted						0.999
Satd. Flow (perm)	1765	0	1765	0	0	1763
Link Speed (mph)	30		30			30
Link Distance (ft)	345		375			351
Travel Time (s)	7.8		8.5			8.0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	72	0	1	84
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	0	72	0	0	85
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
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
Turning Speed (mph)	15	9		9	15	
Sign Control	Stop		Free			Free

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 8.5%		ICU Level of Service A	
Analysis Period (min) 15			

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	0	0	66	0	1	77
Future Volume (Veh/h)	0	0	66	0	1	77
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	0	72	0	1	84
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type			None			None
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	158	72			72	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	158	72			72	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	100	100			100	
cM capacity (veh/h)	833	990			1528	

Direction, Lane #	WB 1	NB 1	SB 1
Volume Total	0	72	85
Volume Left	0	0	1
Volume Right	0	0	0
cSH	1700	1700	1528
Volume to Capacity	0.00	0.04	0.00
Queue Length 95th (ft)	0	0	0
Control Delay (s)	0.0	0.0	0.1
Lane LOS	A		A
Approach Delay (s)	0.0	0.0	0.1
Approach LOS	A		

Intersection Summary			
Average Delay	0.0		
Intersection Capacity Utilization	8.5%	ICU Level of Service	A
Analysis Period (min)	15		

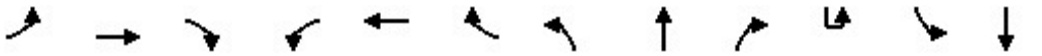
Lane Group	WBL	WBR	NBT	NBR	SBU	SBL	SBT
Lane Configurations							
Traffic Volume (vph)	0	48	12	0	1	48	20
Future Volume (vph)	0	48	12	0	1	48	20
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.865						
Flt Protected							0.966
Satd. Flow (prot)	1557	0	1800	0	0	0	1739
Flt Permitted							0.966
Satd. Flow (perm)	1557	0	1800	0	0	0	1739
Link Speed (mph)	30		30				30
Link Distance (ft)	396		262				692
Travel Time (s)	9.0		6.0				15.7
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	0%
Adj. Flow (vph)	0	51	13	0	1	51	21
Shared Lane Traffic (%)							
Lane Group Flow (vph)	51	0	13	0	0	0	73
Enter Blocked Intersection	No	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	R NA	Left	Left
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
Turning Speed (mph)	15	9		9	9	15	
Sign Control	Stop		Free				Free

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 20.6%		ICU Level of Service A	
Analysis Period (min) 15			

Movement	WBL	WBR	NBT	NBR	SBU	SBL	SBT
Lane Configurations							
Traffic Volume (veh/h)	0	48	12	0	1	48	20
Future Volume (Veh/h)	0	48	12	0	1	48	20
Sign Control	Stop		Free				Free
Grade	0%		0%				0%
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Hourly flow rate (vph)	0	51	13	0	0	51	21
Pedestrians							
Lane Width (ft)							
Walking Speed (ft/s)							
Percent Blockage							
Right turn flare (veh)							
Median type			None				None
Median storage veh)							
Upstream signal (ft)							
pX, platoon unblocked					0.00		
vC, conflicting volume	136	13			0	13	
vC1, stage 1 conf vol							
vC2, stage 2 conf vol							
vCu, unblocked vol	136	13			0	13	
tC, single (s)	6.4	6.2			0.0	4.1	
tC, 2 stage (s)							
tF (s)	3.5	3.3			0.0	2.2	
p0 queue free %	100	95			0	97	
cM capacity (veh/h)	835	1073			0	1619	

Direction, Lane #	WB 1	NB 1	SB 1
Volume Total	51	13	72
Volume Left	0	0	51
Volume Right	51	0	0
cSH	1073	1700	1619
Volume to Capacity	0.05	0.01	0.03
Queue Length 95th (ft)	4	0	2
Control Delay (s)	8.5	0.0	5.2
Lane LOS	A		A
Approach Delay (s)	8.5	0.0	5.2
Approach LOS	A		

Intersection Summary			
Average Delay	6.0		
Intersection Capacity Utilization	20.6%	ICU Level of Service	A
Analysis Period (min)	15		

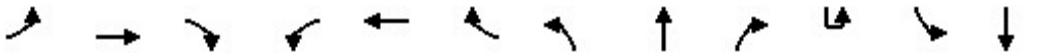


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBU	SBL	SBT
Lane Configurations												
Traffic Volume (vph)	2	0	5	0	0	0	1	7	0	1	0	14
Future Volume (vph)	2	0	5	0	0	0	1	7	0	1	0	14
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.899										0.992
Flt Protected		0.988						0.994				0.997
Satd. Flow (prot)	0	1599	0	0	1800	0	0	1789	0	0	0	1780
Flt Permitted		0.988						0.994				0.997
Satd. Flow (perm)	0	1599	0	0	1800	0	0	1789	0	0	0	1780
Link Speed (mph)		30			30			30				30
Link Distance (ft)		318			1039			274				262
Travel Time (s)		7.2			23.6			6.2				6.0
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Adj. Flow (vph)	2	0	6	0	0	0	1	8	0	1	0	16
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	8	0	0	0	0	0	9	0	0	0	18
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	R NA	Left	Left
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	1.07	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	9	15	
Sign Control		Stop			Stop			Free				Free

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 13.3%		ICU Level of Service A	
Analysis Period (min) 15			

Lane Group	SBR
Lane Configurations	
Traffic Volume (vph)	1
Future Volume (vph)	1
Ideal Flow (vphpl)	1800
Lane Util. Factor	1.00
Frt	
Flt Protected	
Satd. Flow (prot)	0
Flt Permitted	
Satd. Flow (perm)	0
Link Speed (mph)	
Link Distance (ft)	
Travel Time (s)	
Peak Hour Factor	0.90
Heavy Vehicles (%)	0%
Adj. Flow (vph)	1
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
Sign Control	

Intersection Summary



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBU	SBL	SBT
Lane Configurations												
Traffic Volume (veh/h)	2	0	5	0	0	0	1	7	0	1	0	14
Future Volume (Veh/h)	2	0	5	0	0	0	1	7	0	1	0	14
Sign Control		Stop			Stop			Free				Free
Grade		0%			0%			0%				0%
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	2	0	6	0	0	0	1	8	0	0	0	16
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None				None
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked										0.00		
vC, conflicting volume	26	26	16	32	27	8	17			0	8	
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	26	26	16	32	27	8	17			0	8	
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			0.0	4.1	
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			0.0	2.2	
p0 queue free %	100	100	99	100	100	100	100			0	100	
cM capacity (veh/h)	988	870	1068	974	870	1080	1613			0	1625	

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	8	0	9	17
Volume Left	2	0	1	0
Volume Right	6	0	0	1
cSH	1047	1700	1613	1625
Volume to Capacity	0.01	0.00	0.00	0.00
Queue Length 95th (ft)	1	0	0	0
Control Delay (s)	8.5	0.0	0.8	0.0
Lane LOS	A	A	A	
Approach Delay (s)	8.5	0.0	0.8	0.0
Approach LOS	A	A		

Intersection Summary				
Average Delay	2.2			
Intersection Capacity Utilization	13.3%	ICU Level of Service	A	
Analysis Period (min)	15			

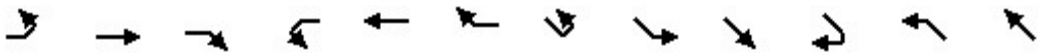
Movement	SBR
Lane Configurations	
Traffic Volume (veh/h)	1
Future Volume (Veh/h)	1
Sign Control	
Grade	
Peak Hour Factor	0.90
Hourly flow rate (vph)	1
Pedestrians	
Lane Width (ft)	
Walking Speed (ft/s)	
Percent Blockage	
Right turn flare (veh)	
Median type	
Median storage veh)	
Upstream signal (ft)	
pX, platoon unblocked	
vC, conflicting volume	
vC1, stage 1 conf vol	
vC2, stage 2 conf vol	
vCu, unblocked vol	
tC, single (s)	
tC, 2 stage (s)	
tF (s)	
p0 queue free %	
cM capacity (veh/h)	
Direction, Lane #	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	SEU	SEL	SET	SER	NWL	NWT
Lane Configurations												
Traffic Volume (vph)	2	0	5	0	0	0	1	0	14	1	0	0
Future Volume (vph)	2	0	5	0	0	0	1	0	14	1	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
Frt		0.899							0.992			
Flt Protected		0.988							0.997			
Satd. Flow (prot)	0	1599	0	0	1800	0	0	0	1780	0	0	1800
Flt Permitted		0.988							0.997			
Satd. Flow (perm)	0	1599	0	0	1800	0	0	0	1780	0	0	1800
Link Speed (mph)		30			30				15			15
Link Distance (ft)		1039			253				374			412
Travel Time (s)		23.6			5.8				17.0			18.7
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Adj. Flow (vph)	2	0	6	0	0	0	1	0	16	1	0	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	8	0	0	0	0	0	0	18	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	R NA	Left	Left	Right	Left	Left
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	1.07	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	9	15		9	15	
Sign Control		Free			Free				Stop			Stop

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 13.3%		ICU Level of Service A	
Analysis Period (min) 15			

Lane Group	NWR
Lane Configurations	
Traffic Volume (vph)	0
Future Volume (vph)	0
Ideal Flow (vphpl)	1800
Lane Util. Factor	1.00
Frt	
Flt Protected	
Satd. Flow (prot)	0
Flt Permitted	
Satd. Flow (perm)	0
Link Speed (mph)	
Link Distance (ft)	
Travel Time (s)	
Peak Hour Factor	0.90
Heavy Vehicles (%)	0%
Adj. Flow (vph)	0
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
Sign Control	

Intersection Summary



Movement	EBL	EBT	EBR	WBL	WBT	WBR	SEU	SEL	SET	SER	NWL	NWT
Lane Configurations												
Traffic Volume (veh/h)	2	0	5	0	0	0	1	0	14	1	0	0
Future Volume (Veh/h)	2	0	5	0	0	0	1	0	14	1	0	0
Sign Control		Free			Free				Stop			Stop
Grade		0%			0%				0%			0%
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	2	0	6	0	0	0	0	0	16	1	0	0
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked							0.00					
vC, conflicting volume	0			6			0	7	10	0	16	7
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	0			6			0	7	10	0	16	7
tC, single (s)	4.1			4.1			0.0	7.1	6.5	6.2	7.1	6.5
tC, 2 stage (s)												
tF (s)	2.2			2.2			0.0	3.5	4.0	3.3	3.5	4.0
p0 queue free %	100			100			0	100	98	100	100	100
cM capacity (veh/h)	1636			1628			0	1017	888	1091	989	891

Direction, Lane #	EB 1	WB 1	SE 1	NW 1
Volume Total	8	0	17	0
Volume Left	2	0	0	0
Volume Right	6	0	1	0
cSH	1636	1700	898	1700
Volume to Capacity	0.00	0.00	0.02	0.00
Queue Length 95th (ft)	0	0	1	0
Control Delay (s)	1.8	0.0	9.1	0.0
Lane LOS	A		A	A
Approach Delay (s)	1.8	0.0	9.1	0.0
Approach LOS			A	A

Intersection Summary				
Average Delay	6.8			
Intersection Capacity Utilization	13.3%	ICU Level of Service	A	
Analysis Period (min)	15			

Movement	NWR
Lane Configurations	
Traffic Volume (veh/h)	0
Future Volume (Veh/h)	0
Sign Control	
Grade	
Peak Hour Factor	0.90
Hourly flow rate (vph)	0
Pedestrians	
Lane Width (ft)	
Walking Speed (ft/s)	
Percent Blockage	
Right turn flare (veh)	
Median type	
Median storage veh)	
Upstream signal (ft)	
pX, platoon unblocked	
vC, conflicting volume	3
vC1, stage 1 conf vol	
vC2, stage 2 conf vol	
vCu, unblocked vol	3
tC, single (s)	6.2
tC, 2 stage (s)	
tF (s)	3.3
p0 queue free %	100
cM capacity (veh/h)	1087
Direction, Lane #	

Lane Group	EBU	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations												
Traffic Volume (vph)	1	2	0	1	0	0	0	1	3	0	0	2
Future Volume (vph)	1	2	0	1	0	0	0	1	3	0	0	2
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
Frt			0.865									
Flt Protected		0.950							0.988			
Satd. Flow (prot)	0	1676	0	0	0	1765	0	0	1744	0	0	1765
Flt Permitted		0.950							0.988			
Satd. Flow (perm)	0	1676	0	0	0	1765	0	0	1744	0	0	1765
Link Speed (mph)			30			30			30			30
Link Distance (ft)			306			254			288			234
Travel Time (s)			7.0			5.8			6.5			5.3
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
Adj. Flow (vph)	1	2	0	1	0	0	0	1	3	0	0	2
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	3	1	0	0	0	0	0	4	0	0	2
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	R NA	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left
Median Width(ft)			12			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	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07
Turning Speed (mph)	9	15		9	15		9	15		9	15	
Sign Control			Stop			Stop			Free			Free

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization Err%		ICU Level of Service H	
Analysis Period (min) 15			

Lane Group	SBR
Lane Configurations	
Traffic Volume (vph)	0
Future Volume (vph)	0
Ideal Flow (vphpl)	1800
Lane Util. Factor	1.00
Frt	
Flt Protected	
Satd. Flow (prot)	0
Flt Permitted	
Satd. Flow (perm)	0
Link Speed (mph)	
Link Distance (ft)	
Travel Time (s)	
Peak Hour Factor	0.92
Adj. Flow (vph)	0
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
Sign Control	

Intersection Summary

Movement	EBU	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations												
Traffic Volume (veh/h)	1	2	0	1	0	0	0	1	3	0	0	2
Future Volume (Veh/h)	1	2	0	1	0	0	0	1	3	0	0	2
Sign Control			Stop			Stop			Free			Free
Grade			0%			0%			0%			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
Hourly flow rate (vph)	0	2	0	1	0	0	0	1	3	0	0	2
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type									None			None
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked	0.00											
vC, conflicting volume	0	7	7	2	8	7	3	2			3	
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	0	7	7	2	8	7	3	2			3	
tC, single (s)	0.0	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1	
tC, 2 stage (s)												
tF (s)	0.0	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2	
p0 queue free %	0	100	100	100	100	100	100	100			100	
cM capacity (veh/h)	0	1012	888	1082	1010	888	1081	1620			1619	

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	3	0	4	2
Volume Left	2	0	1	0
Volume Right	1	0	0	0
cSH	1035	1700	1620	1700
Volume to Capacity	0.00	0.00	0.00	0.00
Queue Length 95th (ft)	0	0	0	0
Control Delay (s)	8.5	0.0	1.8	0.0
Lane LOS	A	A	A	
Approach Delay (s)	8.5	0.0	1.8	0.0
Approach LOS	A	A		

Intersection Summary				
Average Delay	3.6			
Intersection Capacity Utilization	Err%	ICU Level of Service	H	
Analysis Period (min)	15			

Movement	SBR
Lane Configurations	
Traffic Volume (veh/h)	0
Future Volume (Veh/h)	0
Sign Control	
Grade	
Peak Hour Factor	0.92
Hourly flow rate (vph)	0
Pedestrians	
Lane Width (ft)	
Walking Speed (ft/s)	
Percent Blockage	
Right turn flare (veh)	
Median type	
Median storage veh)	
Upstream signal (ft)	
pX, platoon unblocked	
vC, conflicting volume	
vC1, stage 1 conf vol	
vC2, stage 2 conf vol	
vCu, unblocked vol	
tC, single (s)	
tC, 2 stage (s)	
tF (s)	
p0 queue free %	
cM capacity (veh/h)	
Direction, Lane #	

HCS7 Freeway Diverge Report

Project Information			
Analyst	TranSmart	Date	9/24/2020
Agency	CTA	Analysis Year	Build
Jurisdiction	Cook County	Time Period Analyzed	AM Peak
Project Description	Red Line Extension - EB 130th Street Entrance Ramp to EB I-94	Unit	United States Customary

Geometric Data		
	Freeway	Ramp
Number of Lanes (N), ln	2	1
Free-Flow Speed (FFS), mi/h	45.0	40.0
Segment Length (L) / Deceleration Length (LA),ft	1610	310
Terrain Type	Level	Level
Percent Grade, %	-	-
Segment Type / Ramp Type	Freeway	Right-Sided One-Lane

Adjustment Factors		
Driver Population	All Familiar	All Familiar
Weather Type	Non-Severe Weather	Non-Severe Weather
Incident Type	No Incident	-
Final Speed Adjustment Factor (SAF)	1.000	1.000
Final Capacity Adjustment Factor (CAF)	1.000	1.000
Demand Adjustment Factor (DAF)	1.000	1.000

Demand and Capacity		
Demand Volume (Vi)	777	318
Peak Hour Factor (PHF)	0.90	0.90
Total Trucks, %	5.50	7.60
Single-Unit Trucks (SUT), %	-	-
Tractor-Trailers (TT), %	-	-
Heavy Vehicle Adjustment Factor (fHV)	0.948	0.929
Flow Rate (vi),pc/h	911	380
Capacity (c), pc/h	4500	2000
Volume-to-Capacity Ratio (v/c)	0.20	0.19

Speed and Density			
Upstream Equilibrium Distance (LEQ), ft	-	Number of Outer Lanes on Freeway (NO)	0
Distance to Upstream Ramp (LUP), ft	-	Speed Index (DS)	0.397
Downstream Equilibrium Distance (LEQ), ft	-	Flow Outer Lanes (vOA), pc/h/ln	-
Distance to Downstream Ramp (LDOWN), ft	-	Off-Ramp Influence Area Speed (SR), mi/h	43.8
Prop. Freeway Vehicles in Lane 1 and 2 (PFD)	1.000	Outer Lanes Freeway Speed (SO), mi/h	49.4
Flow in Lanes 1 and 2 (v12), pc/h	911	Ramp Junction Speed (S), mi/h	43.8
Flow Entering Ramp-Infl. Area (vR12), pc/h	-	Average Density (D), pc/mi/ln	10.4
Level of Service (LOS)	A	Density in Ramp Influence Area (DR), pc/mi/ln	9.3

HCS7 Freeway Weaving Report

Project Information

Analyst	TranSmart	Date	9/28/2020
Agency	CTA	Analysis Year	Build
Jurisdiction	Cook County	Time Period Analyzed	AM Peak
Project Description	Red Line Extension - EB Weaving Segment	Unit	United States Customary

Geometric Data

Number of Lanes (N), ln	2	Segment Type	Freeway
Segment Length (L_S), ft	750	Number of Maneuver Lanes (N_{WL}), ln	2
Weaving Configuration	One-Sided	Ramp-to-Freeway Lane Changes (LC_{RF}), lc	1
Terrain Type	Level	Freeway-to-Ramp Lane Changes (LC_{FR}), lc	1
Percent Grade, %	-	Ramp-to-Ramp Lane Changes (LC_{RR}), lc	0
Interchange Density (ID), int/mi	0.67	Cross Weaving Managed Lane	No

Adjustment Factors

Driver Population	All Familiar	Final Speed Adjustment Factor (SAF)	1.000
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	1.000
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

	FF	RF	RR	FR
Demand Volume (V_i), veh/h	169	365	0	290
Peak Hour Factor (PHF)	0.90	0.90	0.90	0.90
Total Trucks, %	5.50	15.40	0.00	7.10
Heavy Vehicle Adjustment Factor (f_{HV})	0.948	0.867	1.000	0.934
Flow Rate (v_i), pc/h	198	468	0	345
Weaving Flow Rate (v_w), pc/h	813	Freeway Max Capacity (c_{IFL}), pc/h/ln		2200
Non-Weaving Flow Rate (v_{NW}), pc/h	198	Density-Based Capacity (c_{IWL}), pc/h/ln		1371
Total Flow Rate (v), pc/h	1011	Demand Flow-Based Capacity (c_{IW}), pc/h		2985
Volume Ratio (VR)	0.804	Weaving Segment Capacity (c_W), veh/h		2484
Minimum Lane Change Rate (LC_{MIN}), lc/h	813	Adjusted Weaving Area Capacity, pc/h		2743
Maximum Weaving Length (L_{MAX}), ft	11590	Volume-to-Capacity Ratio (v/c)		0.37

Speed and Density

Non-Weaving Vehicle Index (I_{NW})	10	Average Weaving Speed (S_W), mi/h	38.7
Non-Weaving Lane Change Rate (LC_{NW}), lc/h	62	Average Non-Weaving Speed (S_{NW}), mi/h	36.7
Weaving Lane Change Rate (LC_W), lc/h	863	Average Speed (S), mi/h	38.3
Weaving Lane Change Rate (LC_{All}), lc/h	925	Density (D), pc/mi/ln	13.2
Weaving Intensity Factor (W)	0.267	Level of Service (LOS)	B

HCS7 Freeway Merge Report

Project Information			
Analyst	TranSmart	Date	9/24/2020
Agency	CTA	Analysis Year	Build
Jurisdiction	Cook County	Time Period Analyzed	AM Peak
Project Description	Red Line Extension - WB I-94 Exit Ramp to EB 130th Street	Unit	United States Customary

Geometric Data		
	Freeway	Ramp
Number of Lanes (N), ln	2	1
Free-Flow Speed (FFS), mi/h	45.0	40.0
Segment Length (L) / Acceleration Length (LA),ft	940	325
Terrain Type	Level	Level
Percent Grade, %	-	-
Segment Type / Ramp Type	Freeway	Right-Sided One-Lane

Adjustment Factors		
Driver Population	All Familiar	All Familiar
Weather Type	Non-Severe Weather	Non-Severe Weather
Incident Type	No Incident	-
Final Speed Adjustment Factor (SAF)	1.000	1.000
Final Capacity Adjustment Factor (CAF)	1.000	1.000
Demand Adjustment Factor (DAF)	1.000	1.000

Demand and Capacity		
Demand Volume (Vi)	529	535
Peak Hour Factor (PHF)	0.90	0.90
Total Trucks, %	14.00	40.30
Single-Unit Trucks (SUT), %	-	-
Tractor-Trailers (TT), %	-	-
Heavy Vehicle Adjustment Factor (fHV)	0.877	0.713
Flow Rate (vi),pc/h	670	834
Capacity (c), pc/h	4500	2000
Volume-to-Capacity Ratio (v/c)	0.33	0.42

Speed and Density			
Upstream Equilibrium Distance (LEQ), ft	-	Number of Outer Lanes on Freeway (NO)	0
Distance to Upstream Ramp (LUP), ft	-	Speed Index (MS)	0.313
Downstream Equilibrium Distance (LEQ), ft	-	Flow Outer Lanes (vOA), pc/h/ln	-
Distance to Downstream Ramp (LDOWN), ft	-	On-Ramp Influence Area Speed (SR), mi/h	44.1
Prop. Freeway Vehicles in Lane 1 and 2 (PFM)	1.000	Outer Lanes Freeway Speed (SO), mi/h	45.0
Flow in Lanes 1 and 2 (v12), pc/h	670	Ramp Junction Speed (S), mi/h	44.1
Flow Entering Ramp-Infl. Area (vR12), pc/h	1504	Average Density (D), pc/mi/ln	17.1
Level of Service (LOS)	B	Density in Ramp Influence Area (DR), pc/mi/ln	14.9

HCS7 Freeway Diverge Report

Project Information

Analyst	TranSmart	Date	9/24/2020
Agency	CTA	Analysis Year	Build
Jurisdiction	Cook County	Time Period Analyzed	AM Peak
Project Description	Red Line Extension - WB 130th Street Entrance Ramp to WB I-94	Unit	United States Customary

Geometric Data

	Freeway	Ramp
Number of Lanes (N), ln	2	1
Free-Flow Speed (FFS), mi/h	45.0	45.0
Segment Length (L) / Deceleration Length (LA),ft	1885	525
Terrain Type	Level	Level
Percent Grade, %	-	-
Segment Type / Ramp Type	Freeway	Right-Sided One-Lane

Adjustment Factors

Driver Population	All Familiar	All Familiar
Weather Type	Non-Severe Weather	Non-Severe Weather
Incident Type	No Incident	-
Final Speed Adjustment Factor (SAF)	1.000	1.000
Final Capacity Adjustment Factor (CAF)	1.000	1.000
Demand Adjustment Factor (DAF)	1.000	1.000

Demand and Capacity

Demand Volume (Vi)	1127	380
Peak Hour Factor (PHF)	0.95	0.90
Total Trucks, %	30.20	11.00
Single-Unit Trucks (SUT), %	-	-
Tractor-Trailers (TT), %	-	-
Heavy Vehicle Adjustment Factor (fHV)	0.768	0.901
Flow Rate (vi),pc/h	1545	469
Capacity (c), pc/h	4500	2100
Volume-to-Capacity Ratio (v/c)	0.34	0.22

Speed and Density

Upstream Equilibrium Distance (LEQ), ft	-	Number of Outer Lanes on Freeway (NO)	0
Distance to Upstream Ramp (LUP), ft	-	Speed Index (DS)	0.340
Downstream Equilibrium Distance (LEQ), ft	-	Flow Outer Lanes (vOA), pc/h/ln	-
Distance to Downstream Ramp (LDOWN), ft	-	Off-Ramp Influence Area Speed (SR), mi/h	44.0
Prop. Freeway Vehicles in Lane 1 and 2 (PFD)	1.000	Outer Lanes Freeway Speed (SO), mi/h	49.4
Flow in Lanes 1 and 2 (v12), pc/h	1545	Ramp Junction Speed (S), mi/h	44.0
Flow Entering Ramp-Infl. Area (vR12), pc/h	-	Average Density (D), pc/mi/ln	17.6
Level of Service (LOS)	B	Density in Ramp Influence Area (DR), pc/mi/ln	12.8

HCS7 Freeway Weaving Report

Project Information

Analyst	TranSmart	Date	9/28/2020
Agency	CTA	Analysis Year	Build
Jurisdiction	Cook County	Time Period Analyzed	AM Peak
Project Description	Red Line Extension - WB Weaving Segment	Unit	United States Customary

Geometric Data

Number of Lanes (N), ln	2	Segment Type	Freeway
Segment Length (L_S), ft	570	Number of Maneuver Lanes (N_{WL}), ln	2
Weaving Configuration	One-Sided	Ramp-to-Freeway Lane Changes (LC_{RF}), lc	1
Terrain Type	Level	Freeway-to-Ramp Lane Changes (LC_{FR}), lc	1
Percent Grade, %	-	Ramp-to-Ramp Lane Changes (LC_{RR}), lc	0
Interchange Density (ID), int/mi	0.67	Cross Weaving Managed Lane	No

Adjustment Factors

Driver Population	All Familiar	Final Speed Adjustment Factor (SAF)	1.000
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	1.000
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

	FF	RF	RR	FR
Demand Volume (V_i), veh/h	347	463	0	400
Peak Hour Factor (PHF)	0.95	0.90	0.90	0.90
Total Trucks, %	30.20	11.70	0.00	43.60
Heavy Vehicle Adjustment Factor (f_{HV})	0.768	0.895	1.000	0.696
Flow Rate (v_i), pc/h	476	575	0	639
Weaving Flow Rate (v_w), pc/h	1214	Freeway Max Capacity (c_{IFL}), pc/h/ln		2200
Non-Weaving Flow Rate (v_{NW}), pc/h	476	Density-Based Capacity (c_{IWL}), pc/h/ln		1442
Total Flow Rate (v), pc/h	1690	Demand Flow-Based Capacity (c_{IW}), pc/h		3343
Volume Ratio (VR)	0.718	Weaving Segment Capacity (c_W), veh/h		2260
Minimum Lane Change Rate (LC_{MIN}), lc/h	1214	Adjusted Weaving Area Capacity, pc/h		2884
Maximum Weaving Length (L_{MAX}), ft	10484	Volume-to-Capacity Ratio (v/c)		0.59

Speed and Density

Non-Weaving Vehicle Index (I_{NW})	18	Average Weaving Speed (S_W), mi/h	36.0
Non-Weaving Lane Change Rate (LC_{NW}), lc/h	22	Average Non-Weaving Speed (S_{NW}), mi/h	32.2
Weaving Lane Change Rate (LC_W), lc/h	1253	Average Speed (S), mi/h	34.8
Weaving Lane Change Rate (LC_{All}), lc/h	1275	Density (D), pc/mi/ln	24.3
Weaving Intensity Factor (W)	0.427	Level of Service (LOS)	C

HCS7 Freeway Merge Report

Project Information

Analyst	TranSmart	Date	9/24/2020
Agency	CTA	Analysis Year	Build
Jurisdiction	Cook County	Time Period Analyzed	AM Peak
Project Description	Red Line Extension - EB I-94 Exit Ramp to WB 130th Street	Unit	United States Customary

Geometric Data

	Freeway	Ramp
Number of Lanes (N), ln	2	1
Free-Flow Speed (FFS), mi/h	45.0	40.0
Segment Length (L) / Acceleration Length (LA),ft	850	340
Terrain Type	Level	Level
Percent Grade, %	-	-
Segment Type / Ramp Type	Freeway	Right-Sided One-Lane

Adjustment Factors

Driver Population	All Familiar	All Familiar
Weather Type	Non-Severe Weather	Non-Severe Weather
Incident Type	No Incident	-
Final Speed Adjustment Factor (SAF)	1.000	1.000
Final Capacity Adjustment Factor (CAF)	1.000	1.000
Demand Adjustment Factor (DAF)	1.000	1.000

Demand and Capacity

Demand Volume (Vi)	810	330
Peak Hour Factor (PHF)	0.95	0.90
Total Trucks, %	7.90	4.70
Single-Unit Trucks (SUT), %	-	-
Tractor-Trailers (TT), %	-	-
Heavy Vehicle Adjustment Factor (fHV)	0.927	0.955
Flow Rate (vi),pc/h	920	384
Capacity (c), pc/h	4500	2000
Volume-to-Capacity Ratio (v/c)	0.29	0.19

Speed and Density

Upstream Equilibrium Distance (LEQ), ft	-	Number of Outer Lanes on Freeway (NO)	0
Distance to Upstream Ramp (LUP), ft	-	Speed Index (MS)	0.308
Downstream Equilibrium Distance (LEQ), ft	-	Flow Outer Lanes (vOA), pc/h/ln	-
Distance to Downstream Ramp (LDOWN), ft	-	On-Ramp Influence Area Speed (SR), mi/h	44.1
Prop. Freeway Vehicles in Lane 1 and 2 (PFM)	1.000	Outer Lanes Freeway Speed (SO), mi/h	45.0
Flow in Lanes 1 and 2 (v12), pc/h	920	Ramp Junction Speed (S), mi/h	44.1
Flow Entering Ramp-Infl. Area (vR12), pc/h	1304	Average Density (D), pc/mi/ln	14.8
Level of Service (LOS)	B	Density in Ramp Influence Area (DR), pc/mi/ln	13.4

HCS7 Freeway Diverge Report

Project Information			
Analyst	TranSmart	Date	9/24/2020
Agency	CTA	Analysis Year	Build
Jurisdiction	Cook County	Time Period Analyzed	PM Peak
Project Description	Red Line Extension - EB 130th Street Entrance Ramp to EB I-94	Unit	United States Customary

Geometric Data		
	Freeway	Ramp
Number of Lanes (N), ln	2	1
Free-Flow Speed (FFS), mi/h	45.0	40.0
Segment Length (L) / Deceleration Length (LA),ft	1610	310
Terrain Type	Level	Level
Percent Grade, %	-	-
Segment Type / Ramp Type	Freeway	Right-Sided One-Lane

Adjustment Factors		
Driver Population	All Familiar	All Familiar
Weather Type	Non-Severe Weather	Non-Severe Weather
Incident Type	No Incident	-
Final Speed Adjustment Factor (SAF)	1.000	1.000
Final Capacity Adjustment Factor (CAF)	1.000	1.000
Demand Adjustment Factor (DAF)	1.000	1.000

Demand and Capacity		
Demand Volume (Vi)	1330	611
Peak Hour Factor (PHF)	0.90	0.90
Total Trucks, %	1.60	3.00
Single-Unit Trucks (SUT), %	-	-
Tractor-Trailers (TT), %	-	-
Heavy Vehicle Adjustment Factor (fHV)	0.984	0.971
Flow Rate (vi),pc/h	1502	699
Capacity (c), pc/h	4500	2000
Volume-to-Capacity Ratio (v/c)	0.33	0.35

Speed and Density			
Upstream Equilibrium Distance (LEQ), ft	-	Number of Outer Lanes on Freeway (NO)	0
Distance to Upstream Ramp (LUP), ft	-	Speed Index (DS)	0.426
Downstream Equilibrium Distance (LEQ), ft	-	Flow Outer Lanes (vOA), pc/h/ln	-
Distance to Downstream Ramp (LDOWN), ft	-	Off-Ramp Influence Area Speed (SR), mi/h	43.7
Prop. Freeway Vehicles in Lane 1 and 2 (PFD)	1.000	Outer Lanes Freeway Speed (SO), mi/h	49.4
Flow in Lanes 1 and 2 (v12), pc/h	1502	Ramp Junction Speed (S), mi/h	43.7
Flow Entering Ramp-Infl. Area (vR12), pc/h	-	Average Density (D), pc/mi/ln	17.2
Level of Service (LOS)	B	Density in Ramp Influence Area (DR), pc/mi/ln	14.4

HCS7 Freeway Weaving Report

Project Information

Analyst	TranSmart	Date	9/28/2020
Agency	CTA	Analysis Year	Build
Jurisdiction	Cook County	Time Period Analyzed	PM Peak
Project Description	Red Line Extension - EB Weaving Segment	Unit	United States Customary

Geometric Data

Number of Lanes (N), ln	2	Segment Type	Freeway
Segment Length (L_S), ft	750	Number of Maneuver Lanes (N_{WL}), ln	2
Weaving Configuration	One-Sided	Ramp-to-Freeway Lane Changes (LC_{RF}), lc	1
Terrain Type	Level	Freeway-to-Ramp Lane Changes (LC_{FR}), lc	1
Percent Grade, %	-	Ramp-to-Ramp Lane Changes (LC_{RR}), lc	0
Interchange Density (ID), int/mi	0.67	Cross Weaving Managed Lane	No

Adjustment Factors

Driver Population	All Familiar	Final Speed Adjustment Factor (SAF)	1.000
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	1.000
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

	FF	RF	RR	FR
Demand Volume (V_i), veh/h	379	475	0	340
Peak Hour Factor (PHF)	0.90	0.95	0.90	0.90
Total Trucks, %	1.60	2.70	0.00	3.20
Heavy Vehicle Adjustment Factor (f_{HV})	0.984	0.974	1.000	0.969
Flow Rate (v_i), pc/h	428	513	0	390
Weaving Flow Rate (v_w), pc/h	903	Freeway Max Capacity (c_{IFL}), pc/h/ln		2200
Non-Weaving Flow Rate (v_{NW}), pc/h	428	Density-Based Capacity (c_{IWL}), pc/h/ln		1494
Total Flow Rate (v), pc/h	1331	Demand Flow-Based Capacity (c_{IW}), pc/h		3540
Volume Ratio (VR)	0.678	Weaving Segment Capacity (c_W), veh/h		2915
Minimum Lane Change Rate (LC_{MIN}), lc/h	903	Adjusted Weaving Area Capacity, pc/h		2988
Maximum Weaving Length (L_{MAX}), ft	9980	Volume-to-Capacity Ratio (v/c)		0.45

Speed and Density

Non-Weaving Vehicle Index (I_{NW})	22	Average Weaving Speed (S_W), mi/h	38.1
Non-Weaving Lane Change Rate (LC_{NW}), lc/h	109	Average Non-Weaving Speed (S_{NW}), mi/h	35.3
Weaving Lane Change Rate (LC_W), lc/h	953	Average Speed (S), mi/h	37.2
Weaving Lane Change Rate (LC_{All}), lc/h	1062	Density (D), pc/mi/ln	17.9
Weaving Intensity Factor (W)	0.297	Level of Service (LOS)	B

HCS7 Freeway Merge Report

Project Information			
Analyst	TranSmart	Date	9/24/2020
Agency	CTA	Analysis Year	Build
Jurisdiction	Cook County	Time Period Analyzed	PM Peak
Project Description	Red Line Extension - WB I-94 Exit Ramp to EB 130th Street	Unit	United States Customary

Geometric Data		
	Freeway	Ramp
Number of Lanes (N), ln	2	1
Free-Flow Speed (FFS), mi/h	45.0	40.0
Segment Length (L) / Acceleration Length (LA),ft	940	325
Terrain Type	Level	Level
Percent Grade, %	-	-
Segment Type / Ramp Type	Freeway	Right-Sided One-Lane

Adjustment Factors		
Driver Population	All Familiar	All Familiar
Weather Type	Non-Severe Weather	Non-Severe Weather
Incident Type	No Incident	-
Final Speed Adjustment Factor (SAF)	1.000	1.000
Final Capacity Adjustment Factor (CAF)	1.000	1.000
Demand Adjustment Factor (DAF)	1.000	1.000

Demand and Capacity		
Demand Volume (Vi)	854	755
Peak Hour Factor (PHF)	0.90	0.90
Total Trucks, %	1.30	6.20
Single-Unit Trucks (SUT), %	-	-
Tractor-Trailers (TT), %	-	-
Heavy Vehicle Adjustment Factor (fHV)	0.987	0.942
Flow Rate (vi),pc/h	961	891
Capacity (c), pc/h	4500	2000
Volume-to-Capacity Ratio (v/c)	0.41	0.45

Speed and Density			
Upstream Equilibrium Distance (LEQ), ft	-	Number of Outer Lanes on Freeway (NO)	0
Distance to Upstream Ramp (LUP), ft	-	Speed Index (MS)	0.320
Downstream Equilibrium Distance (LEQ), ft	-	Flow Outer Lanes (vOA), pc/h/ln	-
Distance to Downstream Ramp (LDOWN), ft	-	On-Ramp Influence Area Speed (SR), mi/h	44.0
Prop. Freeway Vehicles in Lane 1 and 2 (PFM)	1.000	Outer Lanes Freeway Speed (SO), mi/h	45.0
Flow in Lanes 1 and 2 (v12), pc/h	961	Ramp Junction Speed (S), mi/h	44.0
Flow Entering Ramp-Infl. Area (vR12), pc/h	1852	Average Density (D), pc/mi/ln	21.0
Level of Service (LOS)	B	Density in Ramp Influence Area (DR), pc/mi/ln	17.5

HCS7 Freeway Diverge Report

Project Information			
Analyst	TranSmart	Date	9/24/2020
Agency	CTA	Analysis Year	Build
Jurisdiction	Cook County	Time Period Analyzed	PM Peak
Project Description	Red Line Extension - WB 130th Street Entrance Ramp to WB I-94	Unit	United States Customary

Geometric Data		
	Freeway	Ramp
Number of Lanes (N), ln	2	1
Free-Flow Speed (FFS), mi/h	45.0	45.0
Segment Length (L) / Deceleration Length (LA),ft	1885	525
Terrain Type	Level	Level
Percent Grade, %	-	-
Segment Type / Ramp Type	Freeway	Right-Sided One-Lane

Adjustment Factors		
Driver Population	All Familiar	All Familiar
Weather Type	Non-Severe Weather	Non-Severe Weather
Incident Type	No Incident	-
Final Speed Adjustment Factor (SAF)	1.000	1.000
Final Capacity Adjustment Factor (CAF)	1.000	1.000
Demand Adjustment Factor (DAF)	1.000	1.000

Demand and Capacity		
Demand Volume (Vi)	1452	495
Peak Hour Factor (PHF)	0.90	0.90
Total Trucks, %	9.60	2.50
Single-Unit Trucks (SUT), %	-	-
Tractor-Trailers (TT), %	-	-
Heavy Vehicle Adjustment Factor (fHV)	0.912	0.976
Flow Rate (vi),pc/h	1769	564
Capacity (c), pc/h	4500	2100
Volume-to-Capacity Ratio (v/c)	0.39	0.27

Speed and Density			
Upstream Equilibrium Distance (LEQ), ft	-	Number of Outer Lanes on Freeway (NO)	0
Distance to Upstream Ramp (LUP), ft	-	Speed Index (DS)	0.349
Downstream Equilibrium Distance (LEQ), ft	-	Flow Outer Lanes (vOA), pc/h/ln	-
Distance to Downstream Ramp (LDOWN), ft	-	Off-Ramp Influence Area Speed (SR), mi/h	44.0
Prop. Freeway Vehicles in Lane 1 and 2 (PFD)	1.000	Outer Lanes Freeway Speed (SO), mi/h	49.4
Flow in Lanes 1 and 2 (v12), pc/h	1769	Ramp Junction Speed (S), mi/h	44.0
Flow Entering Ramp-Infl. Area (vR12), pc/h	-	Average Density (D), pc/mi/ln	20.1
Level of Service (LOS)	B	Density in Ramp Influence Area (DR), pc/mi/ln	14.7

HCS7 Freeway Weaving Report

Project Information

Analyst	TranSmart	Date	9/28/2020
Agency	CTA	Analysis Year	Build
Jurisdiction	Cook County	Time Period Analyzed	PM Peak
Project Description	Red Line Extension - WB Weaving Segment	Unit	United States Customary

Geometric Data

Number of Lanes (N), ln	2	Segment Type	Freeway
Segment Length (L_S), ft	570	Number of Maneuver Lanes (N_{WL}), ln	2
Weaving Configuration	One-Sided	Ramp-to-Freeway Lane Changes (LC_{RF}), lc	1
Terrain Type	Level	Freeway-to-Ramp Lane Changes (LC_{FR}), lc	1
Percent Grade, %	-	Ramp-to-Ramp Lane Changes (LC_{RR}), lc	0
Interchange Density (ID), int/mi	0.67	Cross Weaving Managed Lane	No

Adjustment Factors

Driver Population	All Familiar	Final Speed Adjustment Factor (SAF)	1.000
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	1.000
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

	FF	RF	RR	FR
Demand Volume (V_i), veh/h	172	380	0	785
Peak Hour Factor (PHF)	0.90	0.90	0.90	0.90
Total Trucks, %	9.60	5.00	0.00	6.70
Heavy Vehicle Adjustment Factor (f_{HV})	0.912	0.952	1.000	0.937
Flow Rate (v_i), pc/h	210	444	0	931
Weaving Flow Rate (v_w), pc/h	1375	Freeway Max Capacity (c_{IFL}), pc/h/ln		2200
Non-Weaving Flow Rate (v_{NW}), pc/h	210	Density-Based Capacity (c_{IWL}), pc/h/ln		1292
Total Flow Rate (v), pc/h	1585	Demand Flow-Based Capacity (c_{IW}), pc/h		2765
Volume Ratio (VR)	0.868	Weaving Segment Capacity (c_W), veh/h		2424
Minimum Lane Change Rate (LC_{MIN}), lc/h	1375	Adjusted Weaving Area Capacity, pc/h		2585
Maximum Weaving Length (L_{MAX}), ft	12435	Volume-to-Capacity Ratio (v/c)		0.61

Speed and Density

Non-Weaving Vehicle Index (I_{NW})	8	Average Weaving Speed (S_W), mi/h	35.5
Non-Weaving Lane Change Rate (LC_{NW}), lc/h	0	Average Non-Weaving Speed (S_{NW}), mi/h	31.3
Weaving Lane Change Rate (LC_W), lc/h	1414	Average Speed (S), mi/h	34.9
Weaving Lane Change Rate (LC_{All}), lc/h	1414	Density (D), pc/mi/ln	22.7
Weaving Intensity Factor (W)	0.463	Level of Service (LOS)	C

HCS7 Freeway Merge Report

Project Information			
Analyst	TranSmart	Date	9/24/2020
Agency	CTA	Analysis Year	Build
Jurisdiction	Cook County	Time Period Analyzed	PM Peak
Project Description	Red Line Extension - EB I-94 Exit Ramp to WB 130th Street	Unit	United States Customary

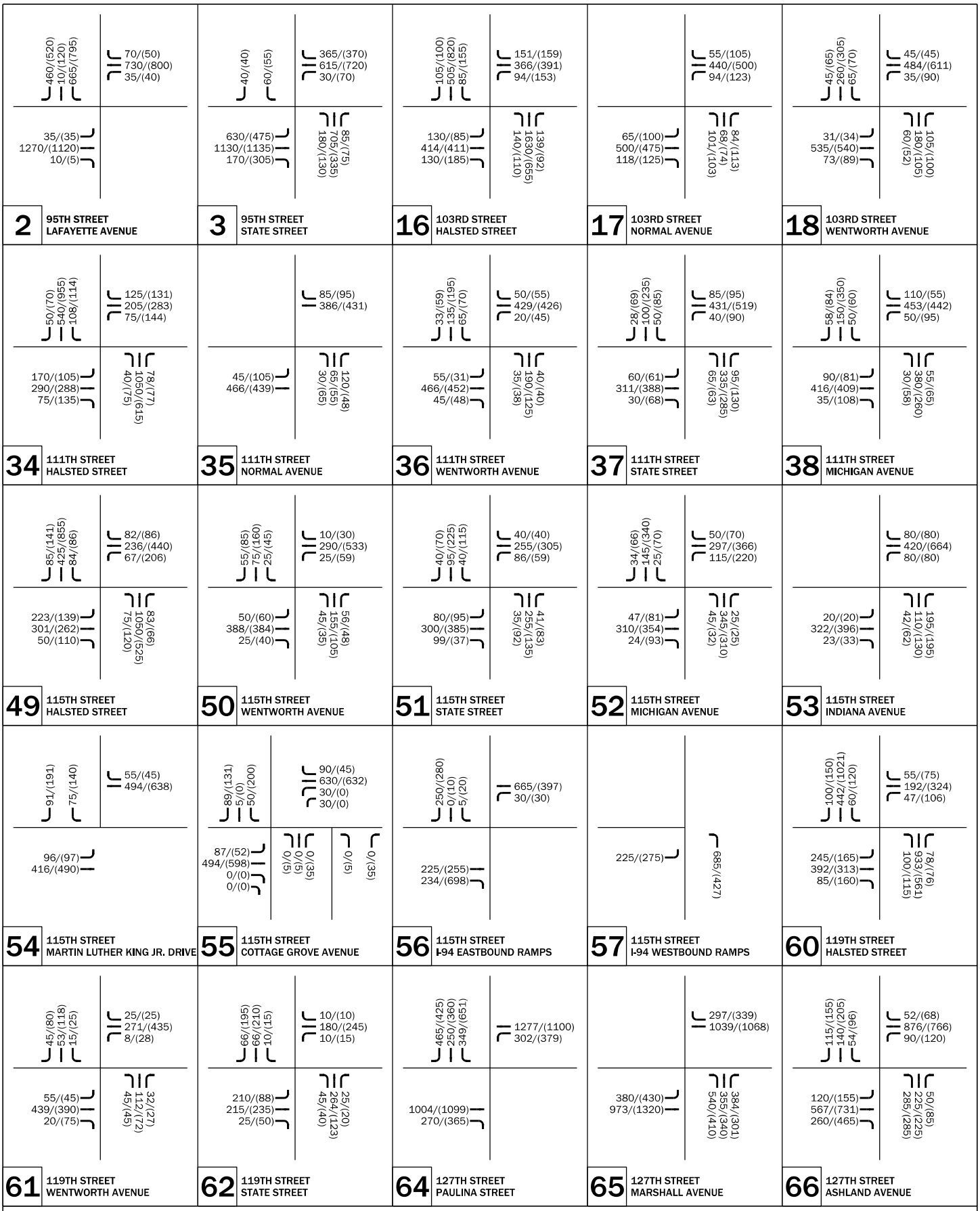
Geometric Data		
	Freeway	Ramp
Number of Lanes (N), ln	2	1
Free-Flow Speed (FFS), mi/h	45.0	40.0
Segment Length (L) / Acceleration Length (LA),ft	850	340
Terrain Type	Level	Level
Percent Grade, %	-	-
Segment Type / Ramp Type	Freeway	Right-Sided One-Lane

Adjustment Factors		
Driver Population	All Familiar	All Familiar
Weather Type	Non-Severe Weather	Non-Severe Weather
Incident Type	No Incident	-
Final Speed Adjustment Factor (SAF)	1.000	1.000
Final Capacity Adjustment Factor (CAF)	1.000	1.000
Demand Adjustment Factor (DAF)	1.000	1.000

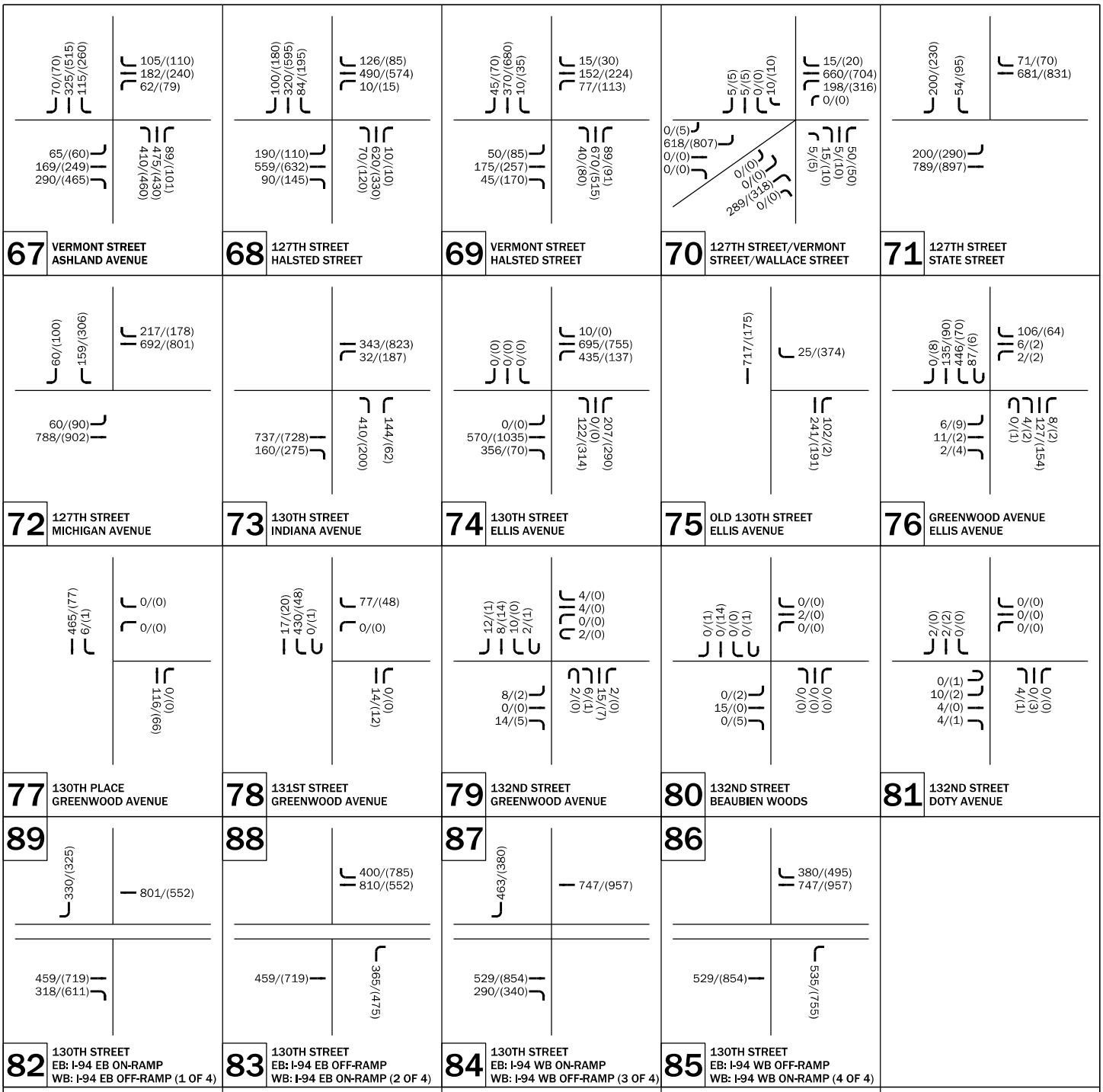
Demand and Capacity		
Demand Volume (Vi)	552	325
Peak Hour Factor (PHF)	0.90	0.95
Total Trucks, %	1.80	2.70
Single-Unit Trucks (SUT), %	-	-
Tractor-Trailers (TT), %	-	-
Heavy Vehicle Adjustment Factor (fHV)	0.982	0.974
Flow Rate (vi),pc/h	625	351
Capacity (c), pc/h	4500	2000
Volume-to-Capacity Ratio (v/c)	0.22	0.18

Speed and Density			
Upstream Equilibrium Distance (LEQ), ft	-	Number of Outer Lanes on Freeway (NO)	0
Distance to Upstream Ramp (LUP), ft	-	Speed Index (MS)	0.304
Downstream Equilibrium Distance (LEQ), ft	-	Flow Outer Lanes (vOA), pc/h/ln	-
Distance to Downstream Ramp (LDOWN), ft	-	On-Ramp Influence Area Speed (SR), mi/h	44.1
Prop. Freeway Vehicles in Lane 1 and 2 (PFM)	1.000	Outer Lanes Freeway Speed (SO), mi/h	45.0
Flow in Lanes 1 and 2 (v12), pc/h	625	Ramp Junction Speed (S), mi/h	44.1
Flow Entering Ramp-Infl. Area (vR12), pc/h	976	Average Density (D), pc/mi/ln	11.1
Level of Service (LOS)	B	Density in Ramp Influence Area (DR), pc/mi/ln	10.9

Traffic Analysis – Build Condition Mitigated (2050)

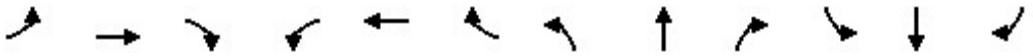


BUILD (2050) INTERSECTION TRAFFIC VOLUMES (MITIGATED)

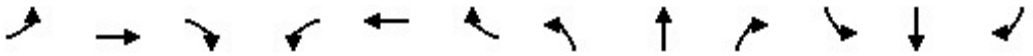


BUILD (2050) INTERSECTION TRAFFIC VOLUMES (MITIGATED)

PAGE 2 OF 2



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	570	356	435	695	10	122	0	207	0	0	0
Future Volume (vph)	0	570	356	435	695	10	122	0	207	0	0	0
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Width (ft)	12	12	13	12	12	12	12	12	12	12	16	12
Storage Length (ft)	175		295	370		170	0		0	0		0
Storage Lanes	1		1	1		1	1		0	0		0
Taper Length (ft)	209			155			25			25		
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.850			0.850		0.850				
Flt Protected				0.950			0.950					
Satd. Flow (prot)	1800	3109	1520	1644	3138	1366	1449	1443	0	0	2040	0
Flt Permitted				0.356			0.757					
Satd. Flow (perm)	1800	3109	1520	616	3138	1366	1155	1443	0	0	2040	0
Right Turn on Red			No			No			No			No
Satd. Flow (RTOR)												
Link Speed (mph)		35			35			30			30	
Link Distance (ft)		5340			1172			141			331	
Travel Time (s)		104.0			22.8			3.2			7.5	
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Heavy Vehicles (%)	0%	10%	4%	4%	9%	12%	18%	0%	6%	100%	0%	0%
Adj. Flow (vph)	0	594	371	453	724	10	127	0	216	0	0	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	594	371	453	724	10	127	216	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)		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	1.07	1.07	1.03	1.07	1.07	1.07	1.07	1.07	1.07	1.07	0.91	1.07
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	1	1	1	1	1	1	1		1	1	
Detector Template												
Leading Detector (ft)	50	50	50	50	50	50	50	50		50	50	
Trailing Detector (ft)	0	0	0	0	0	0	0	0		0	0	
Detector 1 Position(ft)	0	0	0	0	0	0	0	0		0	0	
Detector 1 Size(ft)	50	50	50	50	50	50	50	50		50	50	
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Turn Type	Perm	NA	Perm	pm+pt	NA	Perm	Perm	NA				
Protected Phases		4		3	8			2			6	
Permitted Phases	4		4	8		8	2			6		
Detector Phase	4	4	4	3	8	8	2	2		6	6	
Switch Phase												
Minimum Initial (s)	43.0	43.0	43.0	7.0	43.0	43.0	6.0	6.0		6.0	6.0	



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Minimum Split (s)	47.0	47.0	47.0	10.0	47.0	47.0	10.0	10.0		10.0	10.0	
Total Split (s)	47.0	47.0	47.0	10.0	57.0	57.0	28.0	28.0		28.0	28.0	
Total Split (%)	55.3%	55.3%	55.3%	11.8%	67.1%	67.1%	32.9%	32.9%		32.9%	32.9%	
Maximum Green (s)	43.0	43.0	43.0	7.0	53.0	53.0	24.0	24.0		24.0	24.0	
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	0.0	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			0.0	
Total Lost Time (s)	4.0	4.0	4.0	3.0	4.0	4.0	4.0	4.0			4.0	
Lead/Lag	Lag	Lag	Lag	Lead								
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	6.0	6.0		6.0	6.0	
Recall Mode	C-Max	C-Max	C-Max	None	C-Max	C-Max	None	None		None	None	
Act Effct Green (s)		43.4	43.4	58.1	57.1	57.1	19.9	19.9				
Actuated g/C Ratio		0.51	0.51	0.68	0.67	0.67	0.23	0.23				
v/c Ratio		0.37	0.48	0.82	0.34	0.01	0.47	0.64				
Control Delay		13.5	16.2	25.6	7.0	5.9	32.9	37.6				
Queue Delay		0.0	0.0	0.0	0.0	0.0	0.0	0.0				
Total Delay		13.5	16.2	25.6	7.0	5.9	32.9	37.6				
LOS		B	B	C	A	A	C	D				
Approach Delay		14.6			14.1			35.9				
Approach LOS		B			B			D				
90th %ile Green (s)	43.0	43.0	43.0	7.0	53.0	53.0	24.0	24.0		24.0	24.0	
90th %ile Term Code	Coord	Coord	Coord	Max	Coord	Coord	Max	Max		Hold	Hold	
70th %ile Green (s)	43.0	43.0	43.0	7.2	53.2	53.2	23.8	23.8		23.8	23.8	
70th %ile Term Code	Coord	Coord	Coord	Max	Coord	Coord	Gap	Gap		Hold	Hold	
50th %ile Green (s)	43.0	43.0	43.0	10.6	56.6	56.6	20.4	20.4		20.4	20.4	
50th %ile Term Code	Coord	Coord	Coord	Max	Coord	Coord	Gap	Gap		Hold	Hold	
30th %ile Green (s)	43.0	43.0	43.0	13.3	59.3	59.3	17.7	17.7		17.7	17.7	
30th %ile Term Code	Coord	Coord	Coord	Max	Coord	Coord	Gap	Gap		Hold	Hold	
10th %ile Green (s)	45.0	45.0	45.0	15.4	63.4	63.4	13.6	13.6		13.6	13.6	
10th %ile Term Code	Coord	Coord	Coord	Gap	Coord	Coord	Gap	Gap		Hold	Hold	
Stops (vph)		327	223	160	280	5	104	184				
Fuel Used(gal)		26	17	8	10	0	2	3				
CO Emissions (g/hr)		1818	1159	551	710	11	107	198				
NOx Emissions (g/hr)		354	225	107	138	2	21	38				
VOC Emissions (g/hr)		421	269	128	165	2	25	46				
Dilemma Vehicles (#)		34	0	0	41	0	0	0				
Queue Length 50th (ft)		96	123	93	77	2	60	107				
Queue Length 95th (ft)		134	197	#274	122	7	m106	m170				
Internal Link Dist (ft)		5260			1092			61			251	
Turn Bay Length (ft)			295	370		170						
Base Capacity (vph)		1587	775	550	2108	917	326	407				
Starvation Cap Reductn		0	0	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		0.37	0.48	0.82	0.34	0.01	0.39	0.53				

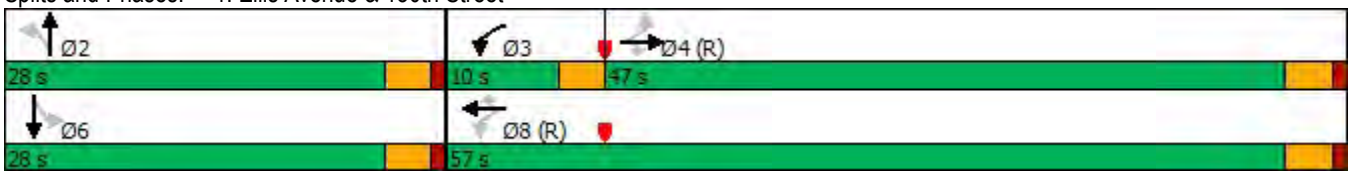
Intersection Summary

Area Type: Other

Cycle Length: 85	
Actuated Cycle Length: 85	
Offset: 0 (0%), Referenced to phase 4:EBTL and 8:WBTL, Start of Green	
Natural Cycle: 75	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.82	
Intersection Signal Delay: 17.3	Intersection LOS: B
Intersection Capacity Utilization 95.2%	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.
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 1: Ellis Avenue & 130th Street



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	570	356	435	695	10	122	0	207	0	0	0
Future Volume (veh/h)	0	570	356	435	695	10	122	0	207	0	0	0
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q, veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj (A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Lanes Open During Work Zone												
Adj Sat Flow, veh/h/ln	1800	1660	1814	1744	1674	1632	1547	1800	1716	396	1872	1800
Adj Flow Rate, veh/h	0	594	371	453	724	10	127	0	216	0	0	0
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	0	10	4	4	9	12	18	0	6	100	0	0
Opposing Right Turn Influence	Yes			Yes			Yes			Yes		
Cap, veh/h	85	1893	923	512	2284	993	361	0	286	0	351	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Prop Arrive On Green	0.00	0.60	0.60	0.08	0.72	0.72	0.19	0.00	0.19	0.00	0.00	0.00
Unsig. Movement Delay												
Ln Grp Delay, s/veh	0.0	8.6	9.5	28.2	4.7	3.4	32.8	0.0	46.2	0.0	0.0	0.0
Ln Grp LOS	A	A	A	C	A	A	C	A	D	A	A	A
Approach Vol, veh/h		965			1187			343			0	
Approach Delay, s/veh		8.9			13.7			41.2			0.0	
Approach LOS		A			B			D				

Timer:	1	2	3	4	5	6	7	8
Assigned Phs		2	3	4		6		8
Case No		6.0	1.2	5.0		8.0		3.0
Phs Duration (G+Y+Rc), s		20.0	10.0	55.0		20.0		65.0
Change Period (Y+Rc), s		4.0	3.0	4.0		4.0		4.0
Max Green (Gmax), s		24.0	7.0	43.0		24.0		53.0
Max Allow Headway (MAH), s		7.5	4.3	4.4		0.0		4.2
Max Q Clear (g_c+I1), s		13.4	9.0	12.8		0.0		9.1
Green Ext Time (g_e), s		2.6	0.0	5.0		0.0		3.8
Prob of Phs Call (p_c)		1.00	1.00	1.00		0.00		1.00
Prob of Max Out (p_x)		0.56	1.00	0.00		0.00		0.00

Left-Turn Movement Data								
Assigned Mvmt		5	3	7		1		
Mvmt Sat Flow, veh/h		1474	1661	734		0		

Through Movement Data								
Assigned Mvmt		2		4		6		8
Mvmt Sat Flow, veh/h		0		3153		1872		3180

Right-Turn Movement Data								
Assigned Mvmt		12		14		16		18
Mvmt Sat Flow, veh/h		1525		1537		0		1383

Left Lane Group Data								
Assigned Mvmt	0	5	3	7	0	1	0	0
Lane Assignment		LL (Pr/Pm)		L				

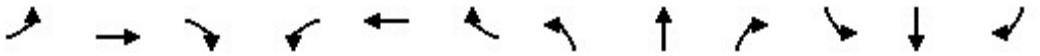
Lanes in Grp	0	1	1	1	0	0	0	0
Grp Vol (v), veh/h	0	127	453	0	0	0	0	0
Grp Sat Flow (s), veh/h/ln	0	1474	1661	734	0	0	0	0
Q Serve Time (g_s), s	0.0	6.5	7.0	0.0	0.0	0.0	0.0	0.0
Cycle Q Clear Time (g_c), s	0.0	6.5	7.0	0.0	0.0	0.0	0.0	0.0
Perm LT Sat Flow (s_l), veh/h/ln	0	1474	573	734	0	0	0	0
Shared LT Sat Flow (s_sh), veh/h/ln	0	0	0	0	0	0	0	0
Perm LT Eff Green (g_p), s	0.0	16.0	53.0	0.0	0.0	0.0	0.0	0.0
Perm LT Serve Time (g_u), s	0.0	16.0	43.2	0.0	0.0	0.0	0.0	0.0
Perm LT Q Serve Time (g_ps), s	0.0	6.5	43.2	0.0	0.0	0.0	0.0	0.0
Time to First Blk (g_f), s	0.0	0.0	0.0	0.0	0.0	16.0	0.0	0.0
Serve Time pre Blk (g_fs), s	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Prop LT Inside Lane (P_L)	0.00	1.00	1.00	1.00	0.00	0.00	0.00	0.00
Lane Grp Cap (c), veh/h	0	361	512	85	0	0	0	0
V/C Ratio (X)	0.00	0.35	0.88	0.00	0.00	0.00	0.00	0.00
Avail Cap (c_a), veh/h	0	501	512	85	0	0	0	0
Upstream Filter (I)	0.00	1.00	1.00	0.00	0.00	0.00	0.00	0.00
Uniform Delay (d1), s/veh	0.0	30.7	11.6	0.0	0.0	0.0	0.0	0.0
Incr Delay (d2), s/veh	0.0	2.1	16.6	0.0	0.0	0.0	0.0	0.0
Initial Q Delay (d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Control Delay (d), s/veh	0.0	32.8	28.2	0.0	0.0	0.0	0.0	0.0
1st-Term Q (Q1), veh/ln	0.0	2.3	3.0	0.0	0.0	0.0	0.0	0.0
2nd-Term Q (Q2), veh/ln	0.0	0.2	2.4	0.0	0.0	0.0	0.0	0.0
3rd-Term Q (Q3), veh/ln	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile Back of Q Factor (f_B%)	0.00	1.80	1.71	1.00	0.00	1.00	0.00	0.00
%ile Back of Q (95%), veh/ln	0.0	4.5	9.2	0.0	0.0	0.0	0.0	0.0
%ile Storage Ratio (RQ%)	0.00	2.45	0.64	0.00	0.00	0.00	0.00	0.00
Initial Q (Qb), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Final (Residual) Q (Qe), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Delay (ds), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Q (Qs), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Cap (cs), veh/h	0	0	0	0	0	0	0	0
Initial Q Clear Time (tc), h	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Middle Lane Group Data								
Assigned Mvmt	0	2	0	4	0	6	0	8
Lane Assignment				T		T		T
Lanes in Grp	0	0	0	2	0	1	0	2
Grp Vol (v), veh/h	0	0	0	594	0	0	0	724
Grp Sat Flow (s), veh/h/ln	0	0	0	1577	0	1872	0	1590
Q Serve Time (g_s), s	0.0	0.0	0.0	7.9	0.0	0.0	0.0	7.1
Cycle Q Clear Time (g_c), s	0.0	0.0	0.0	7.9	0.0	0.0	0.0	7.1
Lane Grp Cap (c), veh/h	0	0	0	1893	0	351	0	2284
V/C Ratio (X)	0.00	0.00	0.00	0.31	0.00	0.00	0.00	0.32
Avail Cap (c_a), veh/h	0	0	0	1893	0	529	0	2284
Upstream Filter (I)	0.00	0.00	0.00	0.46	0.00	0.00	0.00	1.00
Uniform Delay (d1), s/veh	0.0	0.0	0.0	8.4	0.0	0.0	0.0	4.4
Incr Delay (d2), s/veh	0.0	0.0	0.0	0.2	0.0	0.0	0.0	0.4
Initial Q Delay (d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Control Delay (d), s/veh	0.0	0.0	0.0	8.6	0.0	0.0	0.0	4.7
1st-Term Q (Q1), veh/ln	0.0	0.0	0.0	2.3	0.0	0.0	0.0	1.7
2nd-Term Q (Q2), veh/ln	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.1

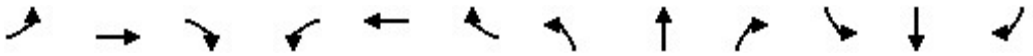
3rd-Term Q (Q3), veh/ln	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile Back of Q Factor (f_B%)	0.00	1.00	0.00	1.72	0.00	1.00	0.00	1.80
%ile Back of Q (95%), veh/ln	0.0	0.0	0.0	4.1	0.0	0.0	0.0	3.2
%ile Storage Ratio (RQ%)	0.00	0.00	0.00	0.02	0.00	0.00	0.00	0.08
Initial Q (Qb), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Final (Residual) Q (Qe), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Delay (ds), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Q (Qs), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Cap (cs), veh/h	0	0	0	0	0	0	0	0
Initial Q Clear Time (tc), h	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Right Lane Group Data								
Assigned Mvmt	0	12	0	14	0	16	0	18
Lane Assignment		T+R		R				R
Lanes in Grp	0	1	0	1	0	0	0	1
Grp Vol (v), veh/h	0	216	0	371	0	0	0	10
Grp Sat Flow (s), veh/h/ln	0	1525	0	1537	0	0	0	1383
Q Serve Time (g_s), s	0.0	11.4	0.0	10.8	0.0	0.0	0.0	0.2
Cycle Q Clear Time (g_c), s	0.0	11.4	0.0	10.8	0.0	0.0	0.0	0.2
Prot RT Sat Flow (s_R), veh/h/ln	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Prot RT Eff Green (g_R), s	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Prop RT Outside Lane (P_R)	0.00	1.00	0.00	1.00	0.00	0.00	0.00	1.00
Lane Grp Cap (c), veh/h	0	286	0	923	0	0	0	993
V/C Ratio (X)	0.00	0.75	0.00	0.40	0.00	0.00	0.00	0.01
Avail Cap (c_a), veh/h	0	431	0	923	0	0	0	993
Upstream Filter (I)	0.00	1.00	0.00	0.46	0.00	0.00	0.00	1.00
Uniform Delay (d1), s/veh	0.0	32.7	0.0	8.9	0.0	0.0	0.0	3.4
Incr Delay (d2), s/veh	0.0	13.5	0.0	0.6	0.0	0.0	0.0	0.0
Initial Q Delay (d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Control Delay (d), s/veh	0.0	46.2	0.0	9.5	0.0	0.0	0.0	3.4
1st-Term Q (Q1), veh/ln	0.0	4.1	0.0	3.1	0.0	0.0	0.0	0.0
2nd-Term Q (Q2), veh/ln	0.0	1.1	0.0	0.2	0.0	0.0	0.0	0.0
3rd-Term Q (Q3), veh/ln	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile Back of Q Factor (f_B%)	0.00	1.72	0.00	1.62	0.00	1.00	0.00	1.80
%ile Back of Q (95%), veh/ln	0.0	8.9	0.0	5.2	0.0	0.0	0.0	0.1
%ile Storage Ratio (RQ%)	0.00	4.28	0.00	0.46	0.00	0.00	0.00	0.01
Initial Q (Qb), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Final (Residual) Q (Qe), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Delay (ds), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Q (Qs), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Cap (cs), veh/h	0	0	0	0	0	0	0	0
Initial Q Clear Time (tc), h	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Intersection Summary	
HCM 6th Ctrl Delay	15.6
HCM 6th LOS	B



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	1035	70	137	755	0	314	0	290	0	0	0
Future Volume (vph)	0	1035	70	137	755	0	314	0	290	0	0	0
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Width (ft)	12	12	13	12	12	12	12	12	12	12	16	12
Storage Length (ft)	175		295	370		170	0		0	0		0
Storage Lanes	1		1	1		1	1		0	0		0
Taper Length (ft)	209			155			25			25		
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.850					0.850				
Flt Protected				0.950			0.950					
Satd. Flow (prot)	1800	3320	1581	1644	3320	1800	1710	1500	0	0	2040	0
Flt Permitted				0.130			0.757					
Satd. Flow (perm)	1800	3320	1581	225	3320	1800	1363	1500	0	0	2040	0
Right Turn on Red			No			No			No			No
Satd. Flow (RTOR)												
Link Speed (mph)		35			35			30			30	
Link Distance (ft)		5343			1170			134			331	
Travel Time (s)		104.1			22.8			3.0			7.5	
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Heavy Vehicles (%)	0%	3%	0%	4%	3%	0%	0%	0%	2%	0%	0%	0%
Adj. Flow (vph)	0	1078	73	143	786	0	327	0	302	0	0	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	1078	73	143	786	0	327	302	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)		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	1.07	1.07	1.03	1.07	1.07	1.07	1.07	1.07	1.07	1.07	0.91	1.07
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	1	1	1	1	1	1	1		1	1	
Detector Template												
Leading Detector (ft)	50	50	50	50	50	50	50	50		50	50	
Trailing Detector (ft)	0	0	0	0	0	0	0	0		0	0	
Detector 1 Position(ft)	0	0	0	0	0	0	0	0		0	0	
Detector 1 Size(ft)	50	50	50	50	50	50	50	50		50	50	
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Turn Type	Perm	NA	Perm	pm+pt	NA	Perm	Perm	NA				
Protected Phases		4		3	8			2			6	
Permitted Phases	4		4	8		8	2			6		
Detector Phase	4	4	4	3	8	8	2	2		6	6	
Switch Phase												
Minimum Initial (s)	33.0	33.0	33.0	7.0	43.0	43.0	6.0	6.0		6.0	6.0	



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Minimum Split (s)	37.0	37.0	37.0	10.0	47.0	47.0	10.0	10.0		10.0	10.0	
Total Split (s)	37.0	37.0	37.0	10.0	47.0	47.0	38.0	38.0		38.0	38.0	
Total Split (%)	43.5%	43.5%	43.5%	11.8%	55.3%	55.3%	44.7%	44.7%		44.7%	44.7%	
Maximum Green (s)	33.0	33.0	33.0	7.0	43.0	43.0	34.0	34.0		34.0	34.0	
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	0.0	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			0.0	
Total Lost Time (s)	4.0	4.0	4.0	3.0	4.0	4.0	4.0	4.0			4.0	
Lead/Lag	Lag	Lag	Lag	Lead								
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	6.0	6.0		6.0	6.0	
Recall Mode	C-Max	C-Max	C-Max	None	C-Max	C-Max	None	None		None	None	
Act Effct Green (s)		37.7	37.7	49.4	48.4		28.6	28.6				
Actuated g/C Ratio		0.44	0.44	0.58	0.57		0.34	0.34				
v/c Ratio		0.73	0.10	0.55	0.42		0.71	0.60				
Control Delay		24.6	16.6	19.0	12.2		33.1	27.8				
Queue Delay		0.0	0.0	0.0	0.0		0.0	0.0				
Total Delay		24.6	16.6	19.0	12.2		33.1	27.8				
LOS		C	B	B	B		C	C				
Approach Delay		24.1			13.2			30.5				
Approach LOS		C			B			C				
90th %ile Green (s)	33.0	33.0	33.0	7.0	43.0	43.0	34.0	34.0		34.0	34.0	
90th %ile Term Code	Coord	Coord	Coord	Max	Coord	Coord	Max	Max		Hold	Hold	
70th %ile Green (s)	33.0	33.0	33.0	7.0	43.0	43.0	34.0	34.0		34.0	34.0	
70th %ile Term Code	Coord	Coord	Coord	Max	Coord	Coord	Max	Max		Hold	Hold	
50th %ile Green (s)	34.6	34.6	34.6	9.3	46.9	46.9	30.1	30.1		30.1	30.1	
50th %ile Term Code	Coord	Coord	Coord	Gap	Coord	Coord	Gap	Gap		Hold	Hold	
30th %ile Green (s)	40.1	40.1	40.1	8.0	51.1	51.1	25.9	25.9		25.9	25.9	
30th %ile Term Code	Coord	Coord	Coord	Gap	Coord	Coord	Gap	Gap		Hold	Hold	
10th %ile Green (s)	48.0	48.0	48.0	7.0	58.0	58.0	19.0	19.0		19.0	19.0	
10th %ile Term Code	Coord	Coord	Coord	Min	Coord	Coord	Gap	Gap		Hold	Hold	
Stops (vph)		823	42	65	413		262	228				
Fuel Used(gal)		51	3	2	13		4	3				
CO Emissions (g/hr)		3586	227	168	883		272	224				
NOx Emissions (g/hr)		698	44	33	172		53	44				
VOC Emissions (g/hr)		831	53	39	205		63	52				
Dilemma Vehicles (#)		60	0	0	44		0	0				
Queue Length 50th (ft)		259	24	34	121		146	129				
Queue Length 95th (ft)		353	52	#86	182		224	194				
Internal Link Dist (ft)		5263			1090			54			251	
Turn Bay Length (ft)			295	370								
Base Capacity (vph)		1473	701	258	1890		545	600				
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		0.73	0.10	0.55	0.42		0.60	0.50				

Intersection Summary	
Area Type:	Other

Cycle Length: 85	
Actuated Cycle Length: 85	
Offset: 0 (0%), Referenced to phase 4:EBTL and 8:WBTL, Start of Green	
Natural Cycle: 70	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.73	
Intersection Signal Delay: 21.9	Intersection LOS: C
Intersection Capacity Utilization 92.3%	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.

Splits and Phases: 1: Ellis Avenue & 130th Street

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	1035	70	137	755	0	314	0	290	0	0	0
Future Volume (veh/h)	0	1035	70	137	755	0	314	0	290	0	0	0
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q, veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj (A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Lanes Open During Work Zone												
Adj Sat Flow, veh/h/ln	1800	1758	1872	1744	1758	1800	1800	1800	1772	1800	1872	1800
Adj Flow Rate, veh/h	0	1078	73	143	786	0	327	0	302	0	0	0
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	0	3	0	4	3	0	0	0	2	0	0	0
Opposing Right Turn Influence	Yes			Yes			Yes			Yes		
Cap, veh/h	85	1713	814	352	2096	957	562	0	424	0	521	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Prop Arrive On Green	0.00	0.51	0.51	0.08	0.63	0.00	0.28	0.00	0.28	0.00	0.00	0.00
Unsig. Movement Delay												
Ln Grp Delay, s/veh	0.0	16.0	10.7	11.6	8.2	0.0	30.8	0.0	35.4	0.0	0.0	0.0
Ln Grp LOS	A	B	B	B	A	A	C	A	D	A	A	A
Approach Vol, veh/h		1151			929			629			0	
Approach Delay, s/veh		15.7			8.7			33.0			0.0	
Approach LOS		B			A			C				

Timer:	1	2	3	4	5	6	7	8
Assigned Phs		2	3	4		6		8
Case No		6.0	1.2	5.0		8.0		3.0
Phs Duration (G+Y+Rc), s		27.6	9.8	47.6		27.6		57.4
Change Period (Y+Rc), s		4.0	3.0	4.0		4.0		4.0
Max Green (Gmax), s		34.0	7.0	33.0		34.0		43.0
Max Allow Headway (MAH), s		7.5	4.3	4.2		0.0		4.2
Max Q Clear (g_c+I1), s		17.1	5.1	21.7		0.0		11.7
Green Ext Time (g_e), s		6.5	0.1	4.5		0.0		4.0
Prob of Phs Call (p_c)		1.00	0.97	1.00		0.00		1.00
Prob of Max Out (p_x)		0.40	1.00	0.00		0.00		0.00

Left-Turn Movement Data								
Assigned Mvmt		5	3	7		1		
Mvmt Sat Flow, veh/h		1714	1661	700		0		

Through Movement Data								
Assigned Mvmt		2		4		6		8
Mvmt Sat Flow, veh/h		0		3340		1872		3340

Right-Turn Movement Data								
Assigned Mvmt		12		14		16		18
Mvmt Sat Flow, veh/h		1525		1586		0		1525

Left Lane Group Data								
Assigned Mvmt	0	5	3	7	0	1	0	0
Lane Assignment		LL (Pr/Pm)		L				

Lanes in Grp	0	1	1	1	0	0	0	0
Grp Vol (v), veh/h	0	327	143	0	0	0	0	0
Grp Sat Flow (s), veh/h/ln	0	1714	1661	700	0	0	0	0
Q Serve Time (g_s), s	0.0	14.5	3.1	0.0	0.0	0.0	0.0	0.0
Cycle Q Clear Time (g_c), s	0.0	14.5	3.1	0.0	0.0	0.0	0.0	0.0
Perm LT Sat Flow (s_l), veh/h/ln	0	1714	481	700	0	0	0	0
Shared LT Sat Flow (s_sh), veh/h/ln	0	0	0	0	0	0	0	0
Perm LT Eff Green (g_p), s	0.0	23.6	45.6	0.0	0.0	0.0	0.0	0.0
Perm LT Serve Time (g_u), s	0.0	23.6	23.9	0.0	0.0	0.0	0.0	0.0
Perm LT Q Serve Time (g_ps), s	0.0	14.5	9.2	0.0	0.0	0.0	0.0	0.0
Time to First Blk (g_f), s	0.0	0.0	0.0	0.0	0.0	23.6	0.0	0.0
Serve Time pre Blk (g_fs), s	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Prop LT Inside Lane (P_L)	0.00	1.00	1.00	1.00	0.00	0.00	0.00	0.00
Lane Grp Cap (c), veh/h	0	562	352	85	0	0	0	0
V/C Ratio (X)	0.00	0.58	0.41	0.00	0.00	0.00	0.00	0.00
Avail Cap (c_a), veh/h	0	770	356	85	0	0	0	0
Upstream Filter (I)	0.00	1.00	1.00	0.00	0.00	0.00	0.00	0.00
Uniform Delay (d1), s/veh	0.0	27.4	10.8	0.0	0.0	0.0	0.0	0.0
Incr Delay (d2), s/veh	0.0	3.4	0.8	0.0	0.0	0.0	0.0	0.0
Initial Q Delay (d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Control Delay (d), s/veh	0.0	30.8	11.6	0.0	0.0	0.0	0.0	0.0
1st-Term Q (Q1), veh/ln	0.0	5.7	0.9	0.0	0.0	0.0	0.0	0.0
2nd-Term Q (Q2), veh/ln	0.0	0.5	0.1	0.0	0.0	0.0	0.0	0.0
3rd-Term Q (Q3), veh/ln	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile Back of Q Factor (f_B%)	0.00	1.00	1.00	1.00	0.00	1.00	0.00	0.00
%ile Back of Q (50%), veh/ln	0.0	6.3	1.0	0.0	0.0	0.0	0.0	0.0
%ile Storage Ratio (RQ%)	0.00	3.13	0.07	0.00	0.00	0.00	0.00	0.00
Initial Q (Qb), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Final (Residual) Q (Qe), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Delay (ds), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Q (Qs), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Cap (cs), veh/h	0	0	0	0	0	0	0	0
Initial Q Clear Time (tc), h	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Middle Lane Group Data								
Assigned Mvmt	0	2	0	4	0	6	0	8
Lane Assignment				T		T		T
Lanes in Grp	0	0	0	2	0	1	0	2
Grp Vol (v), veh/h	0	0	0	1078	0	0	0	786
Grp Sat Flow (s), veh/h/ln	0	0	0	1670	0	1872	0	1670
Q Serve Time (g_s), s	0.0	0.0	0.0	19.7	0.0	0.0	0.0	9.7
Cycle Q Clear Time (g_c), s	0.0	0.0	0.0	19.7	0.0	0.0	0.0	9.7
Lane Grp Cap (c), veh/h	0	0	0	1713	0	521	0	2096
V/C Ratio (X)	0.00	0.00	0.00	0.63	0.00	0.00	0.00	0.37
Avail Cap (c_a), veh/h	0	0	0	1713	0	749	0	2096
Upstream Filter (I)	0.00	0.00	0.00	0.64	0.00	0.00	0.00	1.00
Uniform Delay (d1), s/veh	0.0	0.0	0.0	14.9	0.0	0.0	0.0	7.7
Incr Delay (d2), s/veh	0.0	0.0	0.0	1.1	0.0	0.0	0.0	0.5
Initial Q Delay (d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Control Delay (d), s/veh	0.0	0.0	0.0	16.0	0.0	0.0	0.0	8.2
1st-Term Q (Q1), veh/ln	0.0	0.0	0.0	6.7	0.0	0.0	0.0	2.9
2nd-Term Q (Q2), veh/ln	0.0	0.0	0.0	0.3	0.0	0.0	0.0	0.1

3rd-Term Q (Q3), veh/ln	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile Back of Q Factor (f_B%)	0.00	1.00	0.00	1.00	0.00	1.00	0.00	1.00
%ile Back of Q (50%), veh/ln	0.0	0.0	0.0	7.0	0.0	0.0	0.0	3.1
%ile Storage Ratio (RQ%)	0.00	0.00	0.00	0.03	0.00	0.00	0.00	0.07
Initial Q (Qb), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Final (Residual) Q (Qe), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Delay (ds), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Q (Qs), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Cap (cs), veh/h	0	0	0	0	0	0	0	0
Initial Q Clear Time (tc), h	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Right Lane Group Data								
Assigned Mvmt	0	12	0	14	0	16	0	18
Lane Assignment		T+R		R				R
Lanes in Grp	0	1	0	1	0	0	0	1
Grp Vol (v), veh/h	0	302	0	73	0	0	0	0
Grp Sat Flow (s), veh/h/ln	0	1525	0	1586	0	0	0	1525
Q Serve Time (g_s), s	0.0	15.1	0.0	2.0	0.0	0.0	0.0	0.0
Cycle Q Clear Time (g_c), s	0.0	15.1	0.0	2.0	0.0	0.0	0.0	0.0
Prot RT Sat Flow (s_R), veh/h/ln	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Prot RT Eff Green (g_R), s	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Prop RT Outside Lane (P_R)	0.00	1.00	0.00	1.00	0.00	0.00	0.00	1.00
Lane Grp Cap (c), veh/h	0	424	0	814	0	0	0	957
V/C Ratio (X)	0.00	0.71	0.00	0.09	0.00	0.00	0.00	0.00
Avail Cap (c_a), veh/h	0	610	0	814	0	0	0	957
Upstream Filter (I)	0.00	1.00	0.00	0.64	0.00	0.00	0.00	0.00
Uniform Delay (d1), s/veh	0.0	27.6	0.0	10.6	0.0	0.0	0.0	0.0
Incr Delay (d2), s/veh	0.0	7.8	0.0	0.1	0.0	0.0	0.0	0.0
Initial Q Delay (d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Control Delay (d), s/veh	0.0	35.4	0.0	10.7	0.0	0.0	0.0	0.0
1st-Term Q (Q1), veh/ln	0.0	5.3	0.0	0.6	0.0	0.0	0.0	0.0
2nd-Term Q (Q2), veh/ln	0.0	0.9	0.0	0.0	0.0	0.0	0.0	0.0
3rd-Term Q (Q3), veh/ln	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile Back of Q Factor (f_B%)	0.00	1.00	0.00	1.00	0.00	1.00	0.00	1.00
%ile Back of Q (50%), veh/ln	0.0	6.2	0.0	0.7	0.0	0.0	0.0	0.0
%ile Storage Ratio (RQ%)	0.00	3.12	0.00	0.06	0.00	0.00	0.00	0.00
Initial Q (Qb), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Final (Residual) Q (Qe), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Delay (ds), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Q (Qs), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Cap (cs), veh/h	0	0	0	0	0	0	0	0
Initial Q Clear Time (tc), h	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Intersection Summary	
HCM 6th Ctrl Delay	17.3
HCM 6th LOS	B