TECHNICAL MEMORANDUM

DATE: January 17, 2024

TO: Bally's Corporation

FROM: Peter Reinhofer, P.E., V3 Companies
Tim Doron, Fish Transportation Group

RE: **Jefferson Street Traffic Volume Assessment**
Chicago, Illinois

V3 Companies has prepared this updated technical memorandum to present the conclusions of the peak hour analysis of Jefferson Street, a new north/south roadway that will generally provide one travel lane in each direction from Grand Avenue to Chicago Avenue. This new road will provide access to the proposed entertainment district access points and to the adjacent parcels for PD 1426 such as Huron Street, Erie Street, and Desplaines Street. The proposed development is located at the existing Chicago Tribune printing plant property at 777 West Chicago Avenue

The objective of this updated technical memorandum is to determine the capacity of Jefferson Street with the traffic generated by the proposed entertainment district and the full PD 1426 Build Out in 2032 during the weekday commuter and evening casino peak periods. The proposed entertainment district is anticipated to consist of the following:

- Approximately 184,000 square feet of casino area with a total of 4,000 gaming positions
- 100-room hotel over the casino with a future 400-room hotel west of Jefferson Street
- Approximately 60,000 square feet of restaurant, retail, and bar space
- An entertainment venue with an approximate 3,000-seat theatre

In addition to the entertainment district, the remaining PD 1426 parcel is proposed to be developed with approximately 5,055 residential units with ancillary ground floor retail. The proposed development plan for the remaining parcels is based on the 2018 approved PD 1426 land use plan but may be modified in the future as development occurs.

This analysis of Jefferson Street will evaluate the potential impacts of the proposed entertainment district, which will open in 2026, and the full PD 1426 redevelopment which is anticipated to be built out by 2032.

Roadway System

Roadway Descriptions

Jefferson Street is a new north/south roadway that will generally provide one travel lane in each direction from Grand Avenue to the south to Chicago Avenue to the north. The southern intersection will be near the existing unsignalized intersection for the Tribune property and align with the public right of way on the south side of Grand Avenue. This intersection is proposed to be signalized as part of the

entertainment district redevelopment project. The northern intersection will be located on Chicago Avenue between Halsted Street and the bridge over the Chicago River.

Intersections

The intersection of *Jefferson Street and Port Cochere Driveway* is planned to be a four-leg, unsignalized intersection with eastbound and westbound stop-controlled approaches. The northbound and southbound approaches consist of one left turn lane, and one shared through/right turn lane. The westbound approach consists of one left turn lane and one shared through/right turn lane while the eastbound approach has one left turn lane and one shared through/right turn lane that will serve future development parcels, including the 400-room hotel.

The intersection of *Jefferson Street and Parking Garage Driveway/Huron Street* is planned to be a four-leg, signalized intersection. This intersection warranted a traffic signal based on the four-hour vehicular volume during a typical weekday. The northbound and southbound approaches consist of one left turn lane and one shared through/right lane. The westbound approach consists of one shared left turn/through lane and one right turn lane and the eastbound approach of Huron Street consists of one shared left turn/through/right turn lane. It should be noted that a majority of the traffic exiting the parking garage at this location will likely turn right to go north on Jefferson Street as southbound Jefferson Street traffic will likely exit through the southern garage access.

The intersection of *Jefferson Street and Erie Street* is a three-leg, unsignalized intersection with eastbound Erie Street as the stop-controlled approach. The southbound approach consists of one shared through/right turn lane while the northbound approach consists of one left turn lane and one through lane. The eastbound approach consists of one shared left turn/right turn lane.

The intersection of *Jefferson Street and Desplaines Street/Service Drive* is a four-leg, all-way-stop-controlled intersection due to the limited sight distance for the east leg approach due to the Ohio Street feeder ramp bridge piers. The northbound and southbound approaches consist of one shared left turn/through lane and one shared through/right turn lane. The eastbound and westbound approaches consist of one shared left turn/through/right turn lane.

A new driveway is proposed located at the south end of the theatre structure that will access the event center loading dock. The proposed truck dock is anticipated to accommodate two vehicles that would back into the dock from Jefferson Street. The centerline of the driveway is located approximately 120 feet south of the centerline of the future Erie Street intersection. The primary loading dock functions are to support the program needs associated with the event center while all other regular delivery and trash removal operations requirements for the rest of the facility will continue to be directed to LL3 accessed through the service drive. The dock can accommodate WB-67 vehicles which will be limited to entering and exiting the dock only from the northbound direction. It is anticipated that vehicle movements into and out of the truck dock will not occur during the casino peak hours. Additionally, traffic aides provided by Bally's should assist with trucks entering and exiting along Jefferson Street due to the potential encroachment needed to access the garage.

Trip Generation

The proposed entertainment district redevelopment consists of a casino with hotel, restaurants, museum, and theatre. Project traffic is estimated using the Institute of Transportation Engineers (ITE) *Trip Generation Manual, 11th Edition*. The *Trip Generation Manual* assigns trip generation estimates based on either an average rate or a fitted curve equation for each peak period and an independent variable. In this case, the number of gaming positions is the applicable variable for a casino within an entertainment district. The peak hour trip generation equations are selected for the following time periods:

- weekday, am peak hour of generator for the weekday commuter am peak hour (7 – 9 am)
- weekday, peak hour of adjacent street traffic for one hour between 4 pm and 6 pm for the weekday commuter pm peak hour (4 – 6 pm)
- weekday, pm peak hour of generator for the Friday casino peak hour (8 – 11 pm)
- Saturday, peak hour of generator for the Saturday casino peak hour (8 – 11 pm)

The number of trips generated for the entertainment district was estimated based on the ITE data and reviewed for potential reductions for non-vehicular travel such as transit, walking, and capture between the casino and nearby existing and proposed residential, office, retail, and restaurants. Additionally, the number of taxi and rideshare trips was separately estimated as these trips generate entering and exiting trips for each pick up or drop off movement.

A conservative ten percent reduction was applied for non-vehicular traffic, including transit, walking, and biking for casino patrons and employees.

It is assumed that 55 percent of the trips will be personal vehicles that will drive and park in the on-site parking garage and that 15 percent of trips will drive and utilize the valet parking at the north end of the site. Additionally, it is assumed that 15 percent of trips will use rideshare and five percent will use taxis. A taxi and rideshare trip actually generates two trips, one entering the site to drop off or pick up and one exiting the site; therefore, a redundancy rate was also added to account for the exiting trip. Typically, a redundancy reduction rate is applied to these trips assuming that the taxi or rideshare driver will also wait for or pick up another passenger leaving the site. A redundancy reduction rate of 25 percent of the taxi and rideshare trips was assumed, meaning that one in four taxi and rideshare trips will drop off a patron and wait for and pick up another passenger without leaving the entertainment district area on Chicago Avenue or Grand Avenue.

In addition to the entertainment district, which is proposed to be constructed and operating by 2026, there are additional parcels within the study area that are proposed to be redeveloped. The proposed site plan for the remaining parcels of PD 1426 includes 13 new buildings which will primarily include residential dwelling units with the potential for ancillary ground floor retail and one hotel. Project traffic is estimated using the Institute of Transportation Engineers (ITE) *Trip Generation Manual, 11th Edition*.

The multifamily housing, high rise provides several subcategories and settings. While this site is within walking distance to the CTA Blue Line station and numerous CTA bus routes, the general urban/suburban setting and not close to rail transit subcategory were utilized. The U.S. Census Bureau publishes data that

establishes mode splits for the area around the proposed redevelopment area using data from the 2020 American Community Survey. The data illustrates that the average drive alone split is 25.4 percent, carpooling is 0.9 percent, and taxi cab trips are 3.8 percent. The redundancy for the taxi trips was also assumed. The remaining commute trips included public transportation at 16.8 percent, biking and walking at 37.5 percent and 14.7 percent, respectively.

The peak hour trip generation equations are selected for the following time periods:

- weekday, am peak hour of generator for the weekday commuter am peak hour (7 – 9 am)
- weekday, peak hour of adjacent street traffic for one hour between 4 pm and 6 pm for the weekday commuter pm peak hour (4 – 6 pm)

Trip rates are not available for the Friday or Saturday casino peak hours so the vehicle time of day distribution from the *Trip Generation Manual* was used to estimate the trip generation for those time periods. For the Friday casino peak hour, the distribution percentage for the 8 pm to 9 pm hour, which is the casino peak hour, was compared to the 5 pm to 6 pm hour. The residential pm peak hourly distribution at 5 pm is 8.5 percent and at 8 pm is 5.2 percent. Similarly, the hourly distribution for the hotel at 5 pm is 7.7 percent and at 8 pm is 3.2 percent. It is assumed that the trip generation for the Friday casino peak hour is 61.2 percent of the weekday pm peak hour (5.2 / 8.5) for the multifamily housing and 41.6 percent (3.2 / 7.7) for the hotel.

A similar process was conducted to estimate the Saturday casino peak hour trips for the hotel. However, there is limited Saturday time of day distribution data for most residential housing land uses. The only land use with Saturday data was land use code 221, multi-family housing (mid-rise). It is assumed that hourly trip data for this land use will be similar to land use code 222. Saturday casino peak hour trips were calculated by taking the Saturday 8 pm hour and comparing to the Saturday peak hour of generator hourly distribution and applying that percentage to the Saturday peak hour trip generation.

It should be noted that there is potential for ground floor retail at the residential buildings but will likely be ancillary to the dwelling units and not major trip generating uses. ITE Land Use Code: 232 - High-Rise Residential with 1st-Floor Commercial was initially considered but after reviewing thoroughly, it was decided not to be used due to limited data points to estimate the trip rates, no directional distribution data, and no Saturday peak hour data.

Table 1 provides a summary of the vehicle trip generation for the full PD 1426 build out scenario with the entertainment district.

Table 1 – PD 1426 Full Build Out Trip Generation with Entertainment District

PARCEL / Building Size	LAND USE	SIZE		Weekday Commuter			Weekday Commuter			Friday Casino Peak			Saturday Casino Peak		
				In	Out	Total	In	Out	Total	In	Out	Total	In	Out	Total
A (Entertainment District)	ITE Land Use Code 473: Casino	4,000	Gaming Positions	676	511	1,187	867	834	1,701	1,149	1,061	2,210	1,474	1,256	2,730
	Local Area Capture Reduction (0%)			0	0	0	0	0	0	0	0	0	0	0	0
	Non-Auto Trip Reduction (10%)			-68	-51	-119	-87	-83	-170	-115	-106	-221	-147	-126	-273
	Subtotal Trips Generated			608	460	1068	780	751	1531	1034	955	1989	1327	1130	2457
	Self-Drive and Park (55%)			372	281	653	477	459	936	632	584	1216	811	691	1502
	Self-Drive and Valet (15%)			101	77	178	130	125	255	172	159	332	221	188	410
	Taxi (5%)			34	26	59	43	42	85	57	53	111	74	63	137
	Rideshare (15%)			101	77	178	130	125	255	172	159	332	221	188	410
	Taxi / Rideshare Redundancy			77	101	178	125	130	255	159	172	331	188	221	409
Parcel A (Entertainment District) Total New Vehicle Trips				685	562	**1,246**	905	881	**1,786**	1,192	1,127	**2,322**	1,515	1,351	**2,868**
D-2.1 / D-4.1 / D-4.2 1.52 Million SF	ITE Land Use Code: 222 Multifamily Housing (High-Rise)	1,500	Dwelling Unit	119	230	**349**	231	182	**413**	141	111	**253**	152	116	**268**
	Self-Drive Reduction (26.3%)			31	60	**91**	61	48	**109**	37	29	**66**	40	30	**70**
	Taxi (3.8%)			5	9	**14**	9	7	**16**	5	4	**10**	6	4	**10**
	Taxi Redundancy (3.8%)			9	5	**14**	7	9	**16**	4	5	**9**	4	6	**10**
	Ground Floor Retail*	30,000	SF	-	-	-	-	-	-	-	-	-	-	-	-
Parcel D-2.1/D-4.1/D-4.2 Total New Vehicle Trips				45	74	**119**	77	64	**141**	46	38	**85**	50	40	**90**
D-5.1 510,000 SF	ITE Land Use Code: 222 Multifamily Housing (High-Rise)	500	Dwelling Unit	44	85	**129**	86	67	**153**	53	41	**94**	57	44	**101**
	Self-Drive Reduction (26.3%)			12	22	**34**	23	18	**40**	14	11	**25**	15	11	**26**
	Taxi (3.8%)			2	3	**5**	3	3	**6**	2	2	**4**	2	2	**4**
	Taxi Redundancy (3.8%)			3	2	**5**	3	3	**6**	2	2	**4**	2	2	**4**
	Ground Floor Retail*	30,000	SF	-	-	-	-	-	-	-	-	-	-	-	-
Parcel D-5.1 Total New Vehicle Trips				17	27	**44**	29	24	**52**	18	15	**33**	19	15	**34**
C-1.1 500,000 Sq Ft	ITE Land Use Code: 222 Multifamily Housing (High-Rise)	495	Dwelling Unit	43	85	**128**	85	67	**152**	52	41	**93**	57	43	**100**
	Self-Drive Reduction (26.3%)			11	22	**33**	22	18	**40**	14	11	**24**	15	11	**26**
	Taxi (3.8%)			2	3	**5**	3	3	**6**	2	2	**4**	2	2	**4**
	Taxi Redundancy (3.8%)			3	2	**5**	3	3	**6**	2	2	**4**	2	2	**4**
	Ground Floor Retail*	5,000	SF	-	-	-	-	-	-	-	-	-	-	-	-
Parcel C-1.1 Total New Vehicle Trips				16	27	**43**	28	24	**52**	18	15	**32**	19	15	**34**
B-7.1 / B-7.2 900,000 SF	ITE Land Use Code: 222 Multifamily Housing (High-Rise)	890	Dwelling Unit	73	142	**215**	143	112	**255**	87	69	**156**	94	71	**166**
	Self-Drive Reduction (26.3%)			19	37	**56**	38	29	**67**	23	18	**41**	25	19	**44**
	Taxi (3.8%)			3	5	**8**	5	4	**10**	3	3	**6**	4	3	**7**
	Taxi Redundancy (3.8%)			5	3	**8**	4	5	**9**	3	3	**6**	3	4	**7**
	Ground Floor Retail*	10,000	SF	-	-	-	-	-	-	-	-	-	-	-	-
Parcel B-7.1/B-7.2 Total New Vehicle Trips				27	45	**72**	47	38	**86**	29	24	**53**	32	26	**58**
B-4.1 / B-5.1 / B-5.2 1.075 Million SF	ITE Land Use Code: 222 Multifamily Housing (High-Rise)	1,055	Dwelling Unit	85	166	**251**	166	131	**297**	102	80	**182**	111	83	**194**
	Self-Drive Reduction (26.3%)			22	44	**66**	44	34	**78**	27	21	**48**	29	22	**51**
	Taxi (3.8%)			3	6	**9**	6	5	**11**	4	3	**7**	4	3	**7**
	Taxi Redundancy (3.8%)			6	3	**9**	5	6	**11**	3	4	**7**	3	4	**7**
	Ground Floor Retail*	20,000	SF	-	-	-	-	-	-	-	-	-	-	-	-
Parcel B-4.1/B-5.1/B-5.2 Total New Vehicle Trips				31	53	**84**	55	45	**100**	34	28	**62**	36	29	**65**
B-1.1/B-1.2/B-2.1 1.095 Million SF	ITE Land Use Code: 222 Multifamily Housing (High-Rise)	615	Dwelling Unit	52	102	**154**	102	81	**183**	62	50	**112**	68	52	**120**
	Self-Drive Reduction (26.3%)			14	27	**41**	27	21	**48**	16	13	**29**	18	14	**32**
	Taxi (3.8%)			2	4	**6**	4	3	**7**	2	2	**4**	3	2	**5**
	Taxi Redundancy (3.8%)			4	2	**6**	3	4	**7**	2	2	**4**	2	3	**5**
	Ground Floor Retail*	30,000	SF	-	-	-	-	-	-	-	-	-	-	-	-
	ITE Land Use Code: 310 Hotel	400	Room	48	76	**124**	37	47	**84**	15	20	**35**	16	8	**24**
Parcel B-1.1/B-1.2/B-2.1 Total New Vehicle Trips				68	109	**177**	71	75	**146**	35	37	**72**	39	27	**66**
Total New Vehicle Trips				**889**	**897**	**1,785**	**1,212**	**1,151**	**2,363**	**1,372**	**1,284**	**2,659**	**1,710**	**1,503**	**3,215**

*It is anticipated that the Ground Floor Retail will be ancillary to the proposed development and adjacent developments and will generate minimal primary vehicl

It should be noted that the previously approved site plan assumed a 500-room hotel on the east side of Jefferson Street directly adjacent to the entertainment district and a future 250-room hotel west of Jefferson Street. The updated plan assumes a 100-room hotel above the casino and a 400-room hotel on the west side of Jefferson Street as part of the entertainment district to be constructed after the entertainment district is open. Since the independent variable for the casino is based on gaming positions, the trip generation for the casino was not decreased due to the reduction of the hotel rooms. While the additional 400 rooms west of Jefferson Street will be attributed to the entertainment district when constructed, it is unknown how these facilities will be interconnected. To conduct a conservative analysis, the trip generation will be estimated for the 400-room hotel and added to the roadway network as if it were an independent hotel at this time. The previously assumed future 250-room hotel may be repositioned to another parcel in the future but those trips have not been added to this traffic analysis.

Port Cochere / Rideshare & Taxi / Charter Buses

The Port Cochere Driveway is located approximately 200 feet south of the signalized intersection of Jefferson Street and Chicago Avenue. The port cochere is primarily for valet drop off for the entertainment district, however a portion of the rideshare traffic was assumed to also use the porte cochere to pick up and drop off hotel guests and entertainment district patrons. Currently, the plan calls for the inbound valet to be dropped off at the port cochere and the outbound valet pickup to take place underground using the parking garage driveways. It is our understanding that the curbside lane adjacent to the building will be the primary drop-off lane for the valet. The next lane from the outside will be primarily used for the rideshare and taxi trips while the third lane will primarily be used as a through lane for vehicles to bypass the valet and rideshare vehicles. There is a small area within the center of the port cochere which will be used for valet staff staging vehicles bound for the valet parking area within the parking garage. Signage stating this will be provided at the entrance of the drop-off area when entering the port cochere from Jefferson Street.

All drivers who dropped off their vehicles for the valet will receive their cars at the LL1 level of the parking garage and will exit through the parking garage driveway to exit to Chicago Avenue or through the parking ramps to exit to Grand Avenue. Wayfinding signs will be provided throughout the parking garage to direct vehicles to their preferred exiting route. The total site trips generated from the valet drop off area are summarized in Table 3 by their inbound and outbound travel routes.

It is expected that a portion of the taxi/rideshare trips will enter the port cochere to drop off passengers to the hotel, therefore, it is assumed that 25 percent of the rideshare trips will utilize the port cochere. Table 4 summarizes the total taxi/rideshare traffic volumes by their inbound and outbound travel routes, while Table 5 summarizes the 25 percent split for inbound and outbound trips through the port cochere.

The remaining 75 percent of rideshare trips will utilize the passenger loading and unloading areas along northbound and southbound Jefferson Street at the lay-by lanes on the east and west side of the roadway adjacent to the entertainment district. Table 6 summarizes the remaining 75 percent taxi/rideshare traffic volumes that will drop off and pick up passengers along Jefferson Street by their inbound and outbound travel routes.

Additionally, it is anticipated that charter buses will travel northbound and southbound along Jefferson Street and drop off/pick up passengers at the passenger loading/unloading areas located at the south end of the entertainment district near the event center. Bus staging is provided along several streets in the area with on-street charter bus parking, including the east side of Canal Street south of Roosevelt Avenue, along both sides of Kinzie Street between Desplaines Street and Union Avenue, and along the east side of Green Street between Kinzie Street and Carroll Avenue.

Table 3 – Total Valet Site Traffic Volumes

Time Period	Left IN from SB Jefferson Street at Port Cochere	Left OUT to SB Jefferson Street at Garage Ramps	Right IN from NB Jefferson Street at Port Cochere	Right OUT to NB Jefferson Street at Garage Driveway
Weekday AM Peak	35	27	66	50
Weekday PM Peak	46	44	85	81
Friday Casino Peak	60	56	112	103
Saturday Casino Peak	77	66	144	122

Table 4 – Total Taxi/Rideshare Site Traffic Volumes

Time Period	SB Jefferson Street Drop Off from Chicago Avenue	SB Jefferson Street Pick Up to Grand Avenue	NB Jefferson Street Drop Off from Grand Avenue	NB Jefferson Street Pick Up to Chicago Avenue
Weekday AM Peak	74	71	138	133
Weekday PM Peak	104	104	194	193
Friday Casino Peak	136	134	252	250
Saturday Casino Peak	169	165	314	307

Table 5 –Taxi/Rideshare to Port Cochere Traffic Volumes (25 percent)

Time Period	SB Jefferson Street Drop Off from Chicago Avenue	SB Jefferson Street Pick Up to Grand Avenue	NB Jefferson Street Drop Off from Grand Avenue	NB Jefferson Street Pick Up to Chicago Avenue
Weekday AM Peak	19	18	35	33
Weekday PM Peak	26	26	49	48
Friday Casino Peak	34	34	63	63
Saturday Casino Peak	42	41	79	77

Table 6 – 75 Percent of Taxi/Rideshare to Jefferson Street Curbside Traffic Volumes

Time Period	SB Jefferson Street Drop Off from Chicago Avenue	SB Jefferson Street Pick Up to Grand Avenue	NB Jefferson Street Drop Off from Grand Avenue	NB Jefferson Street Pick Up to Chicago Avenue
Weekday AM Peak	55	53	103	100
Weekday PM Peak	78	78	145	145
Friday Casino Peak	102	100	189	187
Saturday Casino Peak	127	124	235	230

Garage Access Points

There are two access points to the parking garage. One access point is located to the south of the Port Cochere and aligned with the future extension of Huron Street. The inbound and outbound traffic utilizing this access point is primarily expected to travel to and from Chicago Avenue to the north. The second

parking garage access point will be accessed by vehicles traveling to and from Grand Avenue via a ramping system within Jefferson Street.

The proposed design of the parking garage driveway aligning with Huron Street will allow for all traffic movements into and out of the parking garage. Additionally, while it is anticipated that the majority of traffic from the south will access the parking garage via the direct access ramps at the south of the site, a limited number of northbound right-turning vehicle trips have been added at this intersection in the traffic analysis model. Similarly, a portion of the exiting vehicles that are traveling to southbound Jefferson Street have been assigned as a left turn exiting the parking garage at the signalized intersection.

Table 7 summarizes the total self-park inbound and outbound traffic volumes from the two major intersections of Chicago Avenue and Grand Avenue. In addition to the outbound trips listed in Table 7, the valet outbound trips from Table 3 were added to outbound driveways of the parking garage for the capacity analysis.

Table 7 – Total Self Park Site Traffic Volumes

Time Period	Inbound Garage Traffic from SB Jefferson Street	Outbound Garage Traffic to SB Jefferson Street	Inbound Garage Traffic from NB Jefferson Street/Huron Street	Outbound Garage Traffic to NB Jefferson Street
Weekday AM Peak	130	98	242	183
Weekday PM Peak	167	161	310	298
Friday Casino Peak	221	204	411	380
Saturday Casino Peak	284	242	527	449

Trip Distribution and Trip Assignment

The direction from which traffic approaches and departs a site is a function of numerous variables, including location of residences, location of employment centers, location of commercial/retail centers, available roadway systems, location and number of access points, and level of congestion on adjacent road systems. The distribution was based on the accessibility to and from the site, primary anticipated movements and the ease to conduct such movements. Therefore, 65 percent of the inbound trips are assumed to enter through Grand Avenue while 35 percent are assumed to enter through Chicago Avenue. The trip distribution for the entertainment district and the remaining parcels of PD 1426 are documented in the December 7, 2022 Traffic Impact Study (TIS).

It is anticipated that a majority of the inbound traffic from Grand Avenue will enter at the Jefferson Street intersection, however, a portion of the inbound traffic has been distributed to Desplaines Street, Erie Street, and Huron Street. Similarly, 65 percent of the outbound trips are assumed to exit through Chicago Avenue in the northbound direction while the remaining 35 percent of outbound trips will exit southbound through Grand Avenue. The difference in distribution is based on the traffic traveling to and from the freeway network via the Ohio Street ramp. Signs will direct inbound traffic to make right turns at Orleans Avenue, Grand Avenue, and Jefferson Street to access the site. To limit the left turn movements to access the freeway network, it has been recommended to sign the parking garage for freeway traffic to exit through the parking garage driveway with right turns at Chicago Avenue, Orleans Street, and Ohio Street. For the outbound trips, since the parking garage driveway is proposed a right out only and the

parking ramps to the south will not access Erie Street or Huron Street connections, no outbound traffic has been added to these roadways.

The trip assignment is based on the proposed roadway network for the full PD 1426 redevelopment, which includes the construction of Huron Street from Halsted Street to Jefferson Street (south of the existing Huron Street alignment, Erie Street from Union Street to Jefferson Street, and Desplaines Street from Ohio Street to Jefferson Street. Figure 25 of the December 7, 2022 Traffic Impact Study illustrates the trip assignment for the remaining PD 1426 parcels prior to the repositioning of the casino hotel. This includes vehicle trips on the new roadways for several of the PD 1426 parcels that will not travel on Jefferson Street.

Traffic volume exhibits are attached that illustrate the peak hour traffic volumes at the study area intersections for the four peak hours. It should be noted that several traffic movements at the Jefferson Street and Chicago Avenue intersection and at the Jefferson Street and Grand Avenue intersection are slightly altered when compared to the December 7, 2022 Traffic Impact Study. This includes the eastbound right turn and westbound left turn at Chicago Avenue and the eastbound left turn at Grand Avenue. This is due to the repositioning of the casino hotel as well as addressing a previous comment that shifted a small amount of entertainment district traffic from the south to use the new roadways.

Traffic Signal Warrant Analysis

Based on the projected traffic volumes and sight distance issues at the intersection of Jeferson Street and Huron Street/Parking Garage Driveway, a traffic signal warrant analysis has been conducted. The investigation for the need for a traffic control signal is based on the methodology established in the Manual on Uniform Traffic Control Devices (MUTCD). The MUTCD establishes nine individual warrants. Installation of a traffic signal should be further investigated at locations that meet one or more warrants. However, warrant 1, the eight-hour vehicular volume warrant, and warrant 2, the four-hour vehicular warrant, are typically the primary vehicular volume/delay warrants that are considered for intersections.

Warrant 1 is met if a total of eight hours in the day exceed the thresholds established in the MUTCD. Traditionally, this warrant requires more than eight hours of data collection and substantial projections of future trips. Warrant 2 is met if a total of four hours in the day exceed the MUTCD thresholds. In order to estimate the four highest hours during a typical weekday, the weekday pm commuter peak hour and the Friday night casino peak hour were selected as two of the hours. Taking those two peak hours plus 95 percent of each hour to estimate one hour adjacent those peak hours were utilized in the warrant analysis. The IDOT methodology also requires a reduction of the minor approach right turn volume based on factors such as lane configuration and conflicting volumes.

Based on the projected four highest hours using the weekday pm peak hour and the Friday night casino peak hour traffic volumes, the intersection of Jefferson Street and Huron Street/Parking Garage Driveway meets Warrant 2, Four-Hour Vehicular Volume. The supporting Signal Warrant Review Sheet and Right Turn Factor Sheet is included with this Technical Memorandum.

Capacity Analysis

The operation of a facility is evaluated based on level of service (LOS) calculations obtained by analytical methods defined in the Transportation Research Board's *Highway Capacity Manual (HCM), 6th Edition*. The concept of LOS is defined as a quality measure describing operational conditions within a traffic stream, generally in terms of such service measures as speed and travel time, freedom to maneuver, traffic interruptions, and comfort and convenience.

There are six LOS letter designations, from A to F, with LOS A representing the best operating conditions and LOS F the worst.

The LOS of an intersection is based on the average control delay per vehicle. For a signalized intersection, the delay is calculated for each lane group and then aggregated for each approach and for the intersection as a whole. Generally, the LOS is reported for the intersection as a whole. For an unsignalized intersection, the delay is only calculated and reported for each minor movement. An overall intersection LOS is not calculated.

There are different LOS criteria for signalized and unsignalized intersections primarily due to driver perceptions of transportation facilities. The perception is that a signalized intersection is expected to carry higher traffic volumes and experience a greater average delay than an unsignalized intersection. The LOS criteria for signalized and unsignalized intersections are provided in Table 8.

Typically, various state and local governments adopt standards varying between LOS C and LOS E, depending on the area's size and roadway characteristics. Capacity analysis was performed with Synchro 9.2. Models were created for the weekday commuter am, weekday commuter pm, Friday evening casino, and Saturday evening casino peak hours for the future with PD 1426 full build out.

Table 8 – Level of Service Definitions for Signalized and Unsignalized Intersections

Level of Service	Signalized Intersection Control Delay (seconds/vehicle)	Unsignalized Intersection Control Delay (seconds/vehicle)
A	≤ 10	≤ 10.0
B	> 10.0 and ≤ 20.0	> 10.0 and ≤ 15.0
C	> 20.0 and ≤ 35.0	> 15.0 and ≤ 25.0
D	> 35.0 and ≤ 55.0	> 25.0 and ≤ 35.0
E	> 55.0 and ≤ 80.0	> 35.0 and ≤ 50.0
F	> 80.0	> 50.0

Source: Transportation Research Board, *Highway Capacity Manual 6th Edition*, National Research Council, 2016.

The study area includes the proposed unsignalized intersections along Jefferson Street which are the following:

- Jefferson Street & Private Driveway/Port Cochere Driveway

- Jefferson Street & Parking Garage Driveway/Huron Street
- Jefferson Street & Erie Street
- Jefferson Street & Des Plaines Street/Service Drive

The capacity analysis results at the unsignalized intersections are summarized in Table 9.

Table 9 – Capacity Analysis Results

Intersection / Approach	Weekday AM		Weekday PM		Friday Casino		Saturday Casino	
	Future w/ Project		Future w/ Project		Future w/ Project		Future w/ Project	
	Delay (s/veh)	LOS	Delay (s/veh)	LOS	Delay (s/veh)	LOS	Delay (s/veh)	LOS
Jefferson Street & Port Cochere/Private Driveway (Unsignalized)								
NB Left	8.2	A	8.5	A	8.5	A	8.8	A
EB Left	49.8	E	>100	F	>100	F	>100	F
EB Right	11.6	B	12.3	B	12.3	B	13.3	B
WB Left	31.6	D	64.2	F	>100	F	>100	F
WB Thru/Right	13.7	B	17.5	C	22.3	C	31.1	D
SB Left	9.1	A	10.2	B	11.5	B	13.4	B
Jefferson Street & Parking Garage Driveway/Huron Street (Signalized)								
EB Approach	27.5	C	38.2	D	33.4	C	22.7	C
WB Approach	7.7	A	18.5	B	20.4	C	22.3	C
NB Approach	6.0	A	5.4	A	7.5	A	25.7	C
SB Approach	2.1	A	1.8	A	1.7	A	2.9	A
Intersection	6.1	A	9.8	A	11.2	B	17.5	B
Jefferson Street & Erie Street (Unsignalized)								
NB Left	7.9	A	8.1	A	8.0	A	8.1	A
EB Approach	12.4	B	14.0	B	14.3	B	16.3	C
Jefferson Street & Desplaines Street/Service Dr (Unsignalized)								
NB Left/Thru	11.1	B	14.3	B	17.1	C	30.3	D
NB Thru/Right	11.4	B	15.3	C	18.0	C	33.4	D
EB Approach	9.4	A	10.3	B	10.2	B	10.7	B
WB Approach	9.7	A	10.4	B	10.1	B	10.6	B
SB Left/Thru	9.9	A	11.9	B	12.1	B	14.8	B
SB Thru/Right	9.9	A	11.8	B	12.1	B	14.7	B

Based on the capacity analysis results, all movements operate at LOS D or better during the weekday am commuter peak hour with the exception of the eastbound left turn at the Jefferson Street and Port

Cochere Driveway which is projected to operate at LOS E. All movements also operate at LOS D or better during the weekday pm commuter peak hour, the Friday casino peak hour, and the Saturday casino peak hour with the exception of the eastbound and westbound left turns at the Jefferson Street and Port Cochere Driveway intersection, which is projected to operate at LOS F.

Queue Analysis

A queue length analysis was conducted at each of the study area intersections. A summary of this analysis is provided in Table 10. This data is comprised of the 95th percentile queue output from the Synchro analysis.

The longest queues occur in the northbound direction at the Chicago Avenue and Jefferson Street intersection. It is anticipated that the queue lengths could back up into the porte cochere intersection, blocking traffic from entering and exiting the driveway. It is recommended that traffic control aides be present to prevent northbound vehicles from blocking the driveway to maximize traffic flow through this area. The signal timing at this intersection was optimized for the through movements along Chicago Avenue for each of the peak hours evaluated. Shifting additional green time from Chicago Avenue to Jefferson Street would likely decrease the 95th percentile queue lengths along Jefferson Street. It is recommended that this area be monitored in the future to maximize the efficiency of Chicago Avenue and Jefferson Street.

The westbound right turn queue at the Jefferson Street and Garage Driveway intersection during the Saturday evening casino peak hour is 201 feet, or approximately eight vehicles. While the internal design and operations of the parking garage, particularly the locations of the gates for exiting vehicles, are still being finalized, it should be noted that the queues at the parking garage driveway may back up through the gates during the casino peak hours. If this occurs, it is recommended that traffic control aides provided by Bally's may be needed to improve traffic flow.

The analysis results indicate that there are no other significant queueing issues at the other study area intersections.

Table 10 – 95th Percentile Queue Lengths

Intersection	Peak Period	95th Percentile Queue (feet)							
		Eastbound		Westbound		Northbound		Southbound	
		Left	Right	Left	Right	Left	Right	Left	Right
Jefferson Street and Chicago Avenue	Weekday Commuter AM Peak	29		122		150	207	62	
	Weekday Commuter PM Peak	62		114		178	325	81	
	Friday Evening Casino Peak	11		166		204	333	25	
	Saturday Evening Casino Peak	11		210		243	449	25	
Jefferson Street and Port Cochere / Private Driveway	Weekday Commuter AM Peak	60	5	10	8	3		5	
	Weekday Commuter PM Peak	78	5	30	13	3		8	
	Friday Evening Casino Peak	48	3	60	25	3		13	
	Saturday Evening Casino Peak	63	3	118	43	3		23	
Jefferson Street and Parking Garage Driveway / Huron Street	Weekday Commuter AM Peak	38			48	7		24	
	Weekday Commuter PM Peak	32			130	10		31	
	Friday Evening Casino Peak	34			148	10		37	
	Saturday Evening Casino Peak	28			201	13		63	
Jefferson Street and Erie Street	Weekday Commuter AM Peak	5				0			
	Weekday Commuter PM Peak	8				3			
	Friday Evening Casino Peak	5				0			
	Saturday Evening Casino Peak	5				0			
Jefferson Street and Desplaines Street	Weekday Commuter AM Peak	5		10		45	50	25	23
	Weekday Commuter PM Peak	8		10		78	93	43	40
	Friday Evening Casino Peak	5		5		115	128	45	45
	Saturday Evening Casino Peak	8		8		228	250	68	65
Jefferson Street and Grand Avenue	Weekday Commuter AM Peak	57						110	
	Weekday Commuter PM Peak	157						142	
	Friday Evening Casino Peak	164						152	
	Saturday Evening Casino Peak	200						188	

Note: the northbound approach at Desplaines Street consists of one shared left turn/through lane and one shared through/right turn lane

Traffic Control Aides

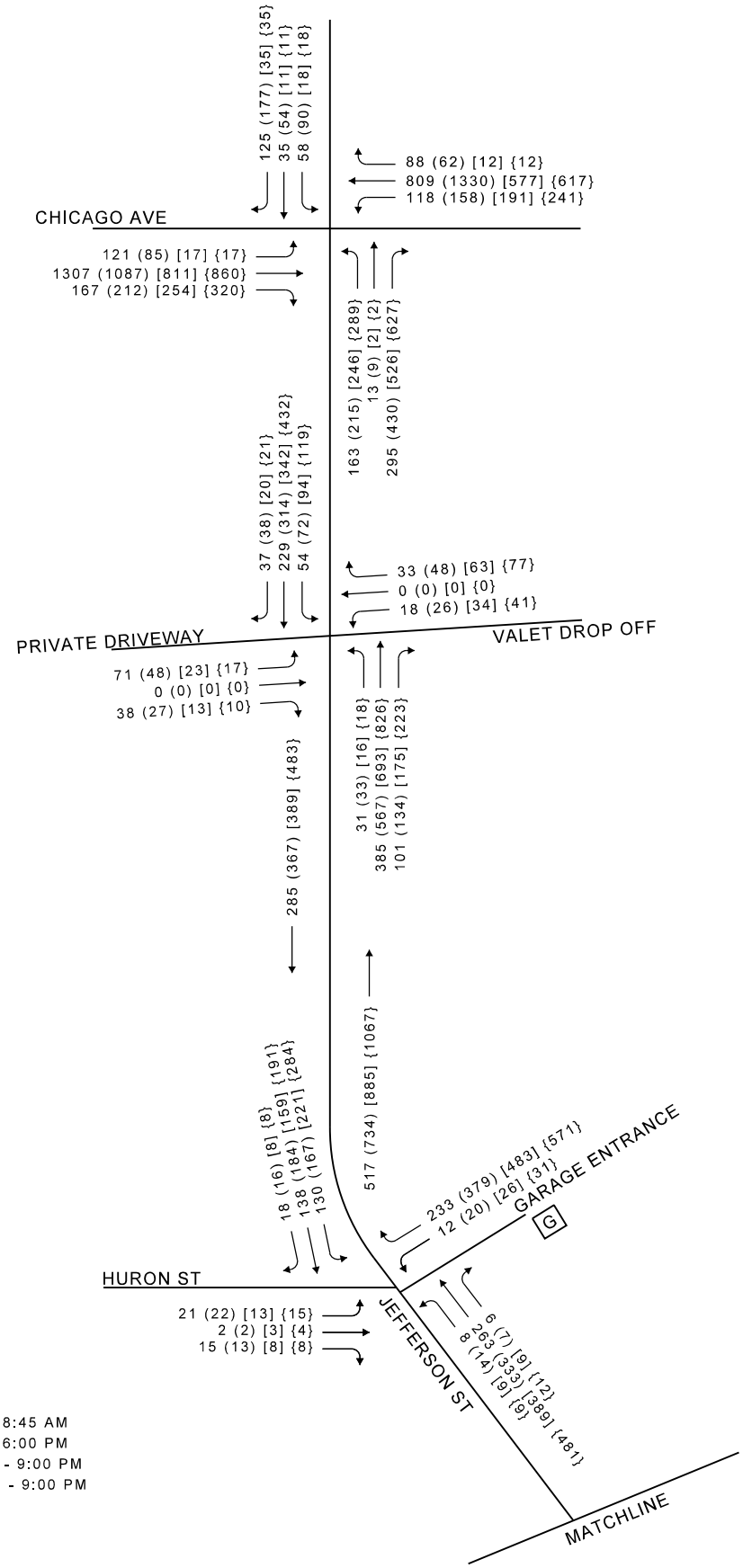
In order to provide safe and efficient access for casino patrons as well as to limit any roadway impacts to the local businesses and neighborhood, it is recommended that Traffic Control Aides (TCA's) be present as needed along Jefferson Street at the Port Cochere Driveway and the Parking Garage Driveway during the peak casino periods on Friday and Saturday evenings. Using TCAs at these and other locations around the entertainment district will be re-evaluated periodically over time and adjusted accordingly at the discretion of Bally's to verify that adequate TCA coverage is provided to efficiently serve all casino patrons and adjacent modes of transportation. It is anticipated that private TCA's will be utilized along Jefferson Street adjacent to the entertainment district.

The roles of the TCA's are to keep traffic flowing around the site, keep the intersections clear, limit double parking along the roadways, provide opportunities for minor approaches to enter and exit without causing backups and delay, and limit potential traffic queues. They will be able to limit the queue lengths and delay times for the impacted movements at both driveways by temporarily stopping traffic on Jefferson Street to allow the outbound movements from the driveway. This will minimize queue lengths backing up into the valet operation and hotel rideshare pick up/drop off area. Additional roles will be to

enforce the no parking rules, keep rideshare vehicles and taxis from backing up onto the street, enforce no double parking, move pedestrians across the streets, and minimize dwell time and delays for buses, valet, and rideshare vehicles. Since the TCA's will likely be private, ticketing vehicles may not be an option, however towing vehicles along Jefferson Street will be an option.

Intersection of Jefferson Street and Service Drive

CDOT has stated that this intersection should not operate as an all-way stop controlled intersection during the interim period when only the entertainment district is in operation due to the concerns over compliance with northbound and southbound traffic given the anticipated low volume of eastbound traffic. Traffic volumes exiting the service drive will be significantly lower since the only traffic using the service drive will be deliveries to the entertainment district. Therefore, this intersection is proposed with the westbound approach of the service drive as stop-controlled. It is recommended that all delivery vehicles exiting the service drive from the entertainment center should turn right to go north due to the sight constraints to turn left. All WB-50 vehicles and larger will need traffic aides provided by Bally's to exit the service drive. The intersection control should be monitored and reconsidered as future development occurs within PD 1426.



LEGEND

- AM PEAK HOUR
(##)- PM PEAK HOUR
[##] - FRI CASINO PEAK
{##} - SAT CASINO PEAK

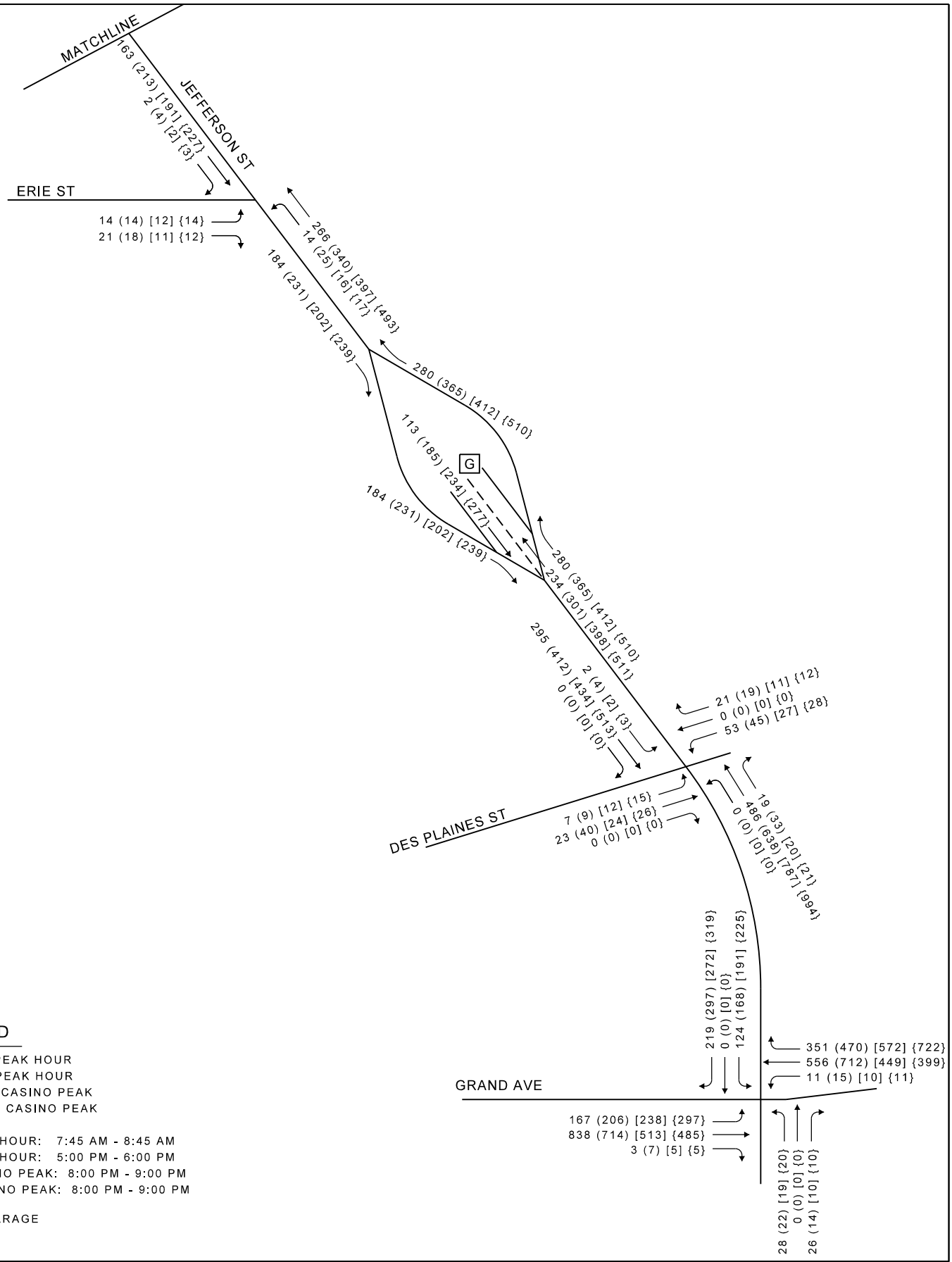
AM PEAK HOUR: 7:45 AM - 8:45 AM
PM PEAK HOUR: 5:00 PM - 6:00 PM
FRI CASINO PEAK: 8:00 PM - 9:00 PM
SAT CASINO PEAK: 8:00 PM - 9:00 PM

G - GARAGE

BALLY'S CHICAGO CASINO

FIGURE 1
FUTURE WITH PD1426 TRAFFIC

CHICAGO ILLINOIS



LEGEND

- AM PEAK HOUR
(##)- PM PEAK HOUR
[##] - FRI CASINO PEAK
{##} - SAT CASINO PEAK

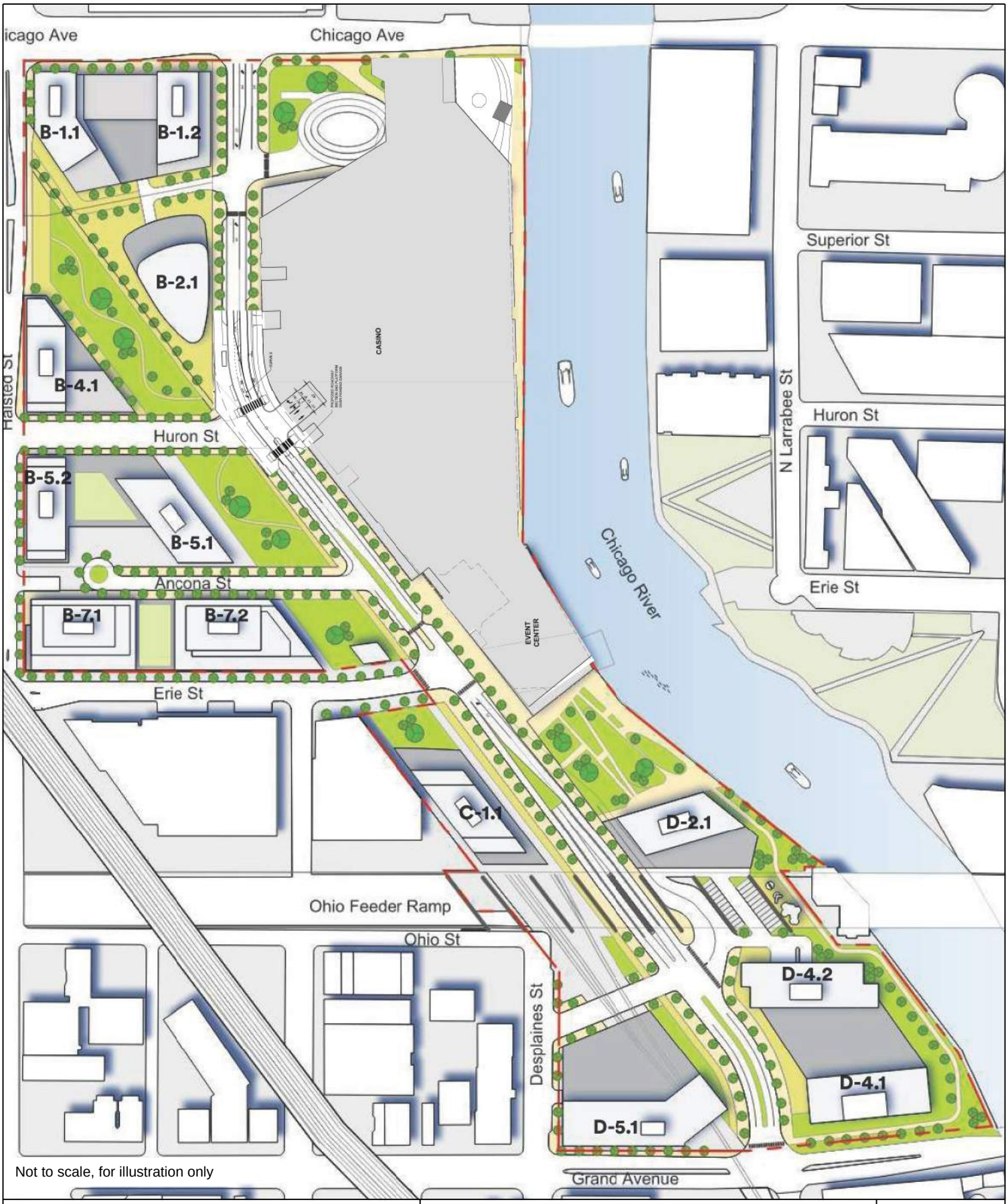
AM PEAK HOUR: 7:45 AM - 8:45 AM
PM PEAK HOUR: 5:00 PM - 6:00 PM
FRI CASINO PEAK: 8:00 PM - 9:00 PM
SAT CASINO PEAK: 8:00 PM - 9:00 PM

G - GARAGE

BALLY'S CHICAGO CASINO

FIGURE 1
FUTURE WITH PD1426 TRAFFIC

CHICAGO ILLINOIS



BALLY'S CHICAGO CASINO

FIGURE 2
CONCEPTUAL SITE PLAN

CHICAGO ILLINOIS

TRAFFIC SIGNAL WARRANT SUMMARY

City: **Chicago**
County: **Cook**

Engineer: **MFM**
Date: **12/13/2023**

Major Street: **Jefferson Street** Lanes: **1**
Minor Street: **Parking Garage Entrance** Lanes: **1**

Critical Approach Speed: **30**

Volume Level Criteria

1. Is the critical speed of major street traffic > 70 km/h (40 mph) ? ☐ Yes ☒ No
2. Is the intersection in a built-up area of isolated community of <10,000 population? ☐ Yes ☒ No

If Question 1 or 2 above is answered "Yes", then use "70%" volume level ☐ 70% ☒ 100%

WARRANT 2 - FOUR-HOUR VEHICULAR VOLUME

If all four points lie above the appropriate line, then the warrant is satisfied.

Applicable: ☒ Yes ☐ No
Satisfied: ☒ Yes ☐ No

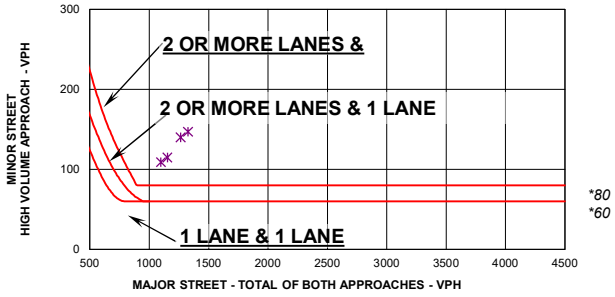
Plot four volume combinations on the applicable figure below.

FOUR HIGHEST HOURS	Volumes	
	MAJOR STREET	MINOR STREET
Friday Casino Peak Hour	1,328	147
Friday Casino 95%	1,264	140
PM Peak Hour	1,154	115
PM Peak Hour 95%	1,099	109

FIGURE 4C-1: Criteria for "100%" Volume Level

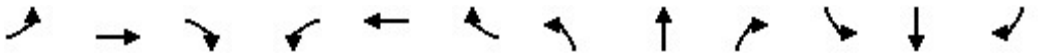
** Note: 115 vph applies as the lower threshold volume for a minor street approach with two or more lanes and 80 vph applies as the lower threshold volume for a minor street approach with one lane.*

FIGURE 4C-2: Criteria for "70%" Volume Level



** Note: 80 vph applies as the lower threshold volume for a minor street approach with two or more lanes and 60 vph applies as the lower threshold volume for a minor street approach with one lane.*

Source: Revised from NCHRP Report 457



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	121	1307	167	118	809	88	163	13	295	58	35	125
Future Volume (vph)	121	1307	167	118	809	88	163	13	295	58	35	125
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	75		0	75		0	0		0	0		0
Storage Lanes	1		0	1		0	1		1	1		0
Taper Length (ft)	150			100			73			25		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.983			0.985				0.850		0.883	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	3479	0	1770	3486	0	1770	1863	1583	1770	1645	0
Flt Permitted	0.204			0.073			0.541			0.748		
Satd. Flow (perm)	380	3479	0	136	3486	0	1008	1863	1583	1393	1645	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		18			15				110		136	
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		546			736			245			310	
Travel Time (s)		12.4			16.7			5.6			7.0	
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
Adj. Flow (vph)	132	1421	182	128	879	96	177	14	321	63	38	136
Shared Lane Traffic (%)												
Lane Group Flow (vph)	132	1603	0	128	975	0	177	14	321	63	174	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	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2		1	2	1	1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru	Right	Left	Thru	
Leading Detector (ft)	20	100		20	100		20	100	20	20	100	
Trailing Detector (ft)	0	0		0	0		0	0	0	0	0	
Detector 1 Position(ft)	0	0		0	0		0	0	0	0	0	
Detector 1 Size(ft)	20	6		20	6		20	6	20	20	6	
Detector 1 Type	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	
Detector 1 Queue (s)	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	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	pm+pt	NA		pm+pt	NA		pm+pt	NA	pm+ov	pm+pt	NA	
Protected Phases	7	4		3	8		5	2	3	1	6	
Permitted Phases	4			8			2		2	6		

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase	7	4		3	8		5	2	3	1	6	
Switch Phase												
Minimum Initial (s)	3.0	5.0		3.0	5.0		3.0	5.0	3.0	3.0	5.0	
Minimum Split (s)	8.0	58.0		8.0	58.0		8.0	28.0	8.0	8.0	28.0	
Total Split (s)	10.0	60.0		10.0	60.0		10.0	30.0	10.0	10.0	30.0	
Total Split (%)	9.1%	54.5%		9.1%	54.5%		9.1%	27.3%	9.1%	9.1%	27.3%	
Maximum Green (s)	7.0	55.0		7.0	55.0		7.0	25.0	7.0	7.0	25.0	
Yellow Time (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	
All-Red Time (s)	0.0	2.0		0.0	2.0		0.0	2.0	0.0	0.0	2.0	
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)	3.0	5.0		3.0	5.0		3.0	5.0	3.0	3.0	5.0	
Lead/Lag	Lead	Lag		Lead	Lag		Lead	Lag	Lead	Lead	Lag	
Lead-Lag Optimize?	Yes	Yes		Yes	Yes		Yes	Yes	Yes	Yes	Yes	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	
Recall Mode	None	C-Max		None	C-Max		Max	Max	None	Max	Max	
Walk Time (s)		7.0			7.0			7.0			7.0	
Flash Dont Walk (s)		11.0			11.0			11.0			11.0	
Pedestrian Calls (#/hr)		0			0			0			0	
Act Effct Green (s)	63.9	55.0		64.1	55.1		34.0	25.0	37.0	34.0	25.0	
Actuated g/C Ratio	0.58	0.50		0.58	0.50		0.31	0.23	0.34	0.31	0.23	
v/c Ratio	0.43	0.92		0.70	0.56		0.49	0.03	0.53	0.14	0.36	
Control Delay	9.3	19.6		54.7	10.4		33.3	33.5	22.5	26.2	12.3	
Queue Delay	0.0	3.6		0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Total Delay	9.3	23.1		54.7	10.4		33.3	33.5	22.5	26.2	12.3	
LOS	A	C		D	B		C	C	C	C	B	
Approach Delay		22.1			15.5			26.6			16.0	
Approach LOS		C			B			C			B	
90th %ile Green (s)	7.0	55.0		7.0	55.0		7.0	25.0	7.0	7.0	25.0	
90th %ile Term Code	Max	Coord		Max	Coord		MaxR	MaxR	Max	MaxR	MaxR	
70th %ile Green (s)	7.0	55.0		7.0	55.0		7.0	25.0	7.0	7.0	25.0	
70th %ile Term Code	Max	Coord		Max	Coord		MaxR	MaxR	Max	MaxR	MaxR	
50th %ile Green (s)	7.0	55.0		7.0	55.0		7.0	25.0	7.0	7.0	25.0	
50th %ile Term Code	Max	Coord		Max	Coord		MaxR	MaxR	Max	MaxR	MaxR	
30th %ile Green (s)	7.0	55.0		7.0	55.0		7.0	25.0	7.0	7.0	25.0	
30th %ile Term Code	Max	Coord		Max	Coord		MaxR	MaxR	Max	MaxR	MaxR	
10th %ile Green (s)	6.6	55.0		7.0	55.4		7.0	25.0	7.0	7.0	25.0	
10th %ile Term Code	Gap	Coord		Max	Coord		MaxR	MaxR	Max	MaxR	MaxR	
Queue Length 50th (ft)	27	215		41	43		92	8	118	30	21	
Queue Length 95th (ft)	m29	m#236		m#122	71		150	25	207	62	80	
Internal Link Dist (ft)		466			656			165			230	
Turn Bay Length (ft)	75			75								
Base Capacity (vph)	309	1748		183	1753		360	423	605	454	478	
Starvation Cap Reductn	0	92		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	0.43	0.97		0.70	0.56		0.49	0.03	0.53	0.14	0.36	

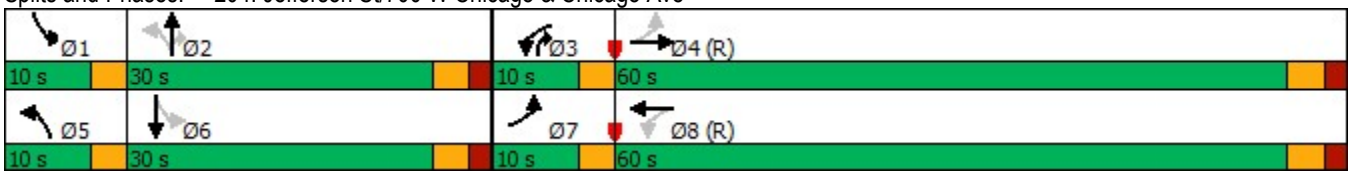
Intersection Summary

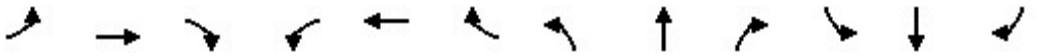
Area Type: Other

Cycle Length: 110	
Actuated Cycle Length: 110	
Offset: 16 (15%), Referenced to phase 4:EBTL and 8:WBTL, Start of Green	
Natural Cycle: 105	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.92	
Intersection Signal Delay: 20.3	Intersection LOS: C
Intersection Capacity Utilization 81.6%	ICU Level of Service D
Analysis Period (min) 15	

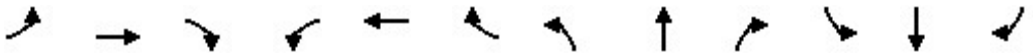
\# 95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 204: Jefferson St/700 W Chicago & Chicago Ave





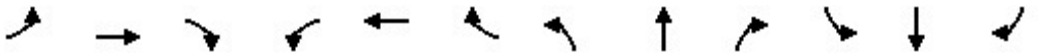
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	167	838	3	11	556	351	28	0	26	124	0	219
Future Volume (vph)	167	838	3	11	556	351	28	0	26	124	0	219
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	100		0	0		0	0		0	0		0
Storage Lanes	1		0	0		0	0		0	1		0
Taper Length (ft)	100			25			25			135		
Lane Util. Factor	1.00	0.95	0.95	0.95	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor		1.00			0.94			0.97			0.94	
Frt					0.943			0.935			0.850	
Flt Protected	0.950				0.999			0.975		0.950		
Satd. Flow (prot)	1770	3538	0	0	3124	0	0	1647	0	1770	1485	0
Flt Permitted	0.206				0.941			0.716		0.687		
Satd. Flow (perm)	384	3538	0	0	2942	0	0	1210	0	1280	1485	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		1			169			97			316	
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		375			838			269			257	
Travel Time (s)		8.5			19.0			6.1			5.8	
Confl. Peds. (#/hr)	101		32	32		101			34			34
Confl. Bikes (#/hr)			6			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)	182	911	3	12	604	382	30	0	28	135	0	238
Shared Lane Traffic (%)												
Lane Group Flow (vph)	182	914	0	0	998	0	0	58	0	135	238	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			0			0			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway 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
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (ft)	20	100		20	100		20	100		20	100	
Trailing Detector (ft)	0	0		0	0		0	0		0	0	
Detector 1 Position(ft)	0	0		0	0		0	0		0	0	
Detector 1 Size(ft)	20	6		20	6		20	6		20	6	
Detector 1 Type	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	
Detector 1 Queue (s)	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	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	



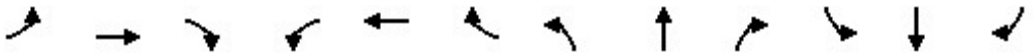
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	pm+pt	NA		Perm	NA		Perm	NA		pm+pt	NA	
Protected Phases	5	2			6			8		7	4	
Permitted Phases	2			6			8			4		
Detector Phase	5	2		6	6		8	8		7	4	
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Minimum Split (s)	10.0	23.0		23.0	23.0		23.0	23.0		10.0	23.0	
Total Split (s)	14.0	52.0		38.0	38.0		23.0	23.0		15.0	38.0	
Total Split (%)	15.6%	57.8%		42.2%	42.2%		25.6%	25.6%		16.7%	42.2%	
Maximum Green (s)	11.0	47.0		33.0	33.0		18.0	18.0		12.0	33.0	
Yellow Time (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
All-Red Time (s)	0.0	2.0		2.0	2.0		2.0	2.0		0.0	2.0	
Lost Time Adjust (s)	0.0	0.0			0.0			0.0		0.0	0.0	
Total Lost Time (s)	3.0	5.0			5.0			5.0		3.0	5.0	
Lead/Lag	Lead			Lag	Lag		Lag	Lag		Lead		
Lead-Lag Optimize?	Yes			Yes	Yes		Yes	Yes		Yes		
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	C-Max		C-Max	C-Max		None	None		None	None	
Walk Time (s)		7.0		7.0	7.0		7.0	7.0			7.0	
Flash Dont Walk (s)		11.0		11.0	11.0		11.0	11.0			11.0	
Pedestrian Calls (#/hr)		0		0	0		0	0			0	
Act Effct Green (s)	64.5	62.5			50.3			5.8		19.5	17.5	
Actuated g/C Ratio	0.72	0.69			0.56			0.06		0.22	0.19	
v/c Ratio	0.44	0.37			0.58			0.34		0.40	0.44	
Control Delay	10.1	5.0			13.7			8.5		32.0	3.6	
Queue Delay	0.0	0.1			0.0			0.0		0.0	0.0	
Total Delay	10.1	5.2			13.7			8.5		32.0	3.6	
LOS	B	A			B			A		C	A	
Approach Delay		6.0			13.7			8.5			13.9	
Approach LOS		A			B			A			B	
90th %ile Green (s)	13.8	57.9		41.1	41.1		7.1	7.1		12.0	22.1	
90th %ile Term Code	Gap	Coord		Coord	Coord		Gap	Gap		Max	Hold	
70th %ile Green (s)	10.0	59.5		46.5	46.5		5.5	5.5		12.0	20.5	
70th %ile Term Code	Gap	Coord		Coord	Coord		Gap	Gap		Max	Hold	
50th %ile Green (s)	8.7	59.5		47.8	47.8		5.5	5.5		12.0	20.5	
50th %ile Term Code	Gap	Coord		Coord	Coord		Gap	Gap		Max	Hold	
30th %ile Green (s)	7.7	61.3		50.6	50.6		5.5	5.5		10.2	18.7	
30th %ile Term Code	Gap	Coord		Coord	Coord		Gap	Gap		Gap	Hold	
10th %ile Green (s)	6.0	74.5		65.5	65.5		0.0	0.0		7.5	5.5	
10th %ile Term Code	Gap	Coord		Coord	Coord		Skip	Skip		Hold	Gap	
Queue Length 50th (ft)	29	91			160			0		62	0	
Queue Length 95th (ft)	57	95			264			14		110	19	
Internal Link Dist (ft)		295			758			189			177	
Turn Bay Length (ft)	100											
Base Capacity (vph)	453	2458			1718			319		355	744	
Starvation Cap Reductn	0	556			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	0.40	0.48			0.58			0.18		0.38	0.32	

Intersection Summary			
Area Type:	Other		
Cycle Length: 90			
Actuated Cycle Length: 90			
Offset: 0 (0%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green			
Natural Cycle: 70			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.58			
Intersection Signal Delay: 10.2		Intersection LOS: B	
Intersection Capacity Utilization 94.8%		ICU Level of Service F	
Analysis Period (min) 15			

Splits and Phases: 305: Canal St/Jefferson St & Grand Ave



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	21	2	15	12	0	233	8	263	6	130	138	18
Future Volume (vph)	21	2	15	12	0	233	8	263	6	130	138	18
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	0		0	100		0	115		0
Storage Lanes	0		0	0		1	1		0	1		0
Taper Length (ft)	25			25			135			135		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor		0.88					0.90				0.98	
Frt		0.947				0.850		0.996			0.982	
Flt Protected		0.973			0.950		0.950			0.950		
Satd. Flow (prot)	0	1615	0	0	1805	1615	1770	1855	0	1770	1797	0
Flt Permitted		0.819			0.816		0.650			0.548		
Satd. Flow (perm)	0	1266	0	0	1550	1615	1091	1855	0	1021	1797	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		16				253		2			13	
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		230			400			235			392	
Travel Time (s)		5.2			9.1			5.3			8.9	
Confl. Peds. (#/hr)	60		60				60					60
Confl. Bikes (#/hr)			10									10
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	2%	2%	2%	0%	0%	0%	2%	2%	2%	2%	2%	2%
Parking (#/hr)									84			10
Adj. Flow (vph)	23	2	16	13	0	253	9	286	7	141	150	20
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	41	0	0	13	253	9	293	0	141	170	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			12			12	
Link Offset(ft)		0			-10			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway 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
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2	1	1	2		1	2	
Detector Template	Left	Thru		Left	Thru	Right	Left	Thru		Left	Thru	
Leading Detector (ft)	20	100		20	100	20	20	100		20	100	
Trailing Detector (ft)	0	0		0	0	0	0	0		0	0	
Detector 1 Position(ft)	0	0		0	0	0	0	0		0	0	
Detector 1 Size(ft)	20	6		20	6	20	20	6		20	6	
Detector 1 Type	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	
Detector 1 Queue (s)	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	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA		Perm	NA	pm+ov	Perm	NA		pm+pt	NA	
Protected Phases		4			8	1		2		1	6	
Permitted Phases	4			8		8	2			6		
Detector Phase	4	4		8	8	1	2	2		1	6	
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0	5.0	5.0	5.0		5.0	5.0	
Minimum Split (s)	25.0	25.0		25.0	25.0	10.0	25.0	25.0		10.0	25.0	
Total Split (s)	31.0	31.0		31.0	31.0	11.0	33.0	33.0		11.0	44.0	
Total Split (%)	41.3%	41.3%		41.3%	41.3%	14.7%	44.0%	44.0%		14.7%	58.7%	
Maximum Green (s)	26.0	26.0		26.0	26.0	8.0	28.0	28.0		8.0	39.0	
Yellow Time (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0		3.0	3.0	
All-Red Time (s)	2.0	2.0		2.0	2.0	0.0	2.0	2.0		0.0	2.0	
Lost Time Adjust (s)		0.0			0.0	0.0	0.0	0.0		0.0	0.0	
Total Lost Time (s)		5.0			5.0	3.0	5.0	5.0		3.0	5.0	
Lead/Lag						Lead	Lag	Lag		Lead		
Lead-Lag Optimize?						Yes	Yes	Yes		Yes		
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Recall Mode	None	None		None	None	None	C-Max	C-Max		None	C-Max	
Walk Time (s)	7.0	7.0		7.0	7.0		7.0	7.0			7.0	
Flash Dont Walk (s)	11.0	11.0		11.0	11.0		11.0	11.0			11.0	
Pedestrian Calls (#/hr)	0	0		0	0		0	0			0	
Act Effct Green (s)		7.2			7.1	14.6	52.4	52.4		64.1	64.1	
Actuated g/C Ratio		0.10			0.09	0.19	0.70	0.70		0.85	0.85	
v/c Ratio		0.30			0.09	0.49	0.01	0.23		0.15	0.11	
Control Delay		27.5			31.0	6.5	6.0	6.0		2.0	2.1	
Queue Delay		0.0			0.0	0.0	0.0	0.0		0.0	0.0	
Total Delay		27.5			31.0	6.5	6.0	6.0		2.0	2.1	
LOS		C			C	A	A	A		A	A	
Approach Delay		27.5			7.7			6.0			2.1	
Approach LOS		C			A			A			A	
90th %ile Green (s)	9.9	9.9		9.9	9.9	8.3	43.8	43.8		8.3	55.1	
90th %ile Term Code	Gap	Gap		Hold	Hold	Gap	Coord	Coord		Gap	Coord	
70th %ile Green (s)	8.0	8.0		8.0	8.0	7.3	46.7	46.7		7.3	57.0	
70th %ile Term Code	Gap	Gap		Hold	Hold	Gap	Coord	Coord		Gap	Coord	
50th %ile Green (s)	6.8	6.8		6.8	6.8	6.7	48.5	48.5		6.7	58.2	
50th %ile Term Code	Gap	Gap		Hold	Hold	Gap	Coord	Coord		Gap	Coord	
30th %ile Green (s)	0.0	0.0		0.0	0.0	5.6	61.4	61.4		5.6	70.0	
30th %ile Term Code	Skip	Skip		Skip	Skip	Gap	Coord	Coord		Gap	Coord	
10th %ile Green (s)	0.0	0.0		0.0	0.0	5.5	61.5	61.5		5.5	70.0	
10th %ile Term Code	Skip	Skip		Skip	Skip	Gap	Coord	Coord		Gap	Coord	
Queue Length 50th (ft)		11			6	0	1	49		9	13	
Queue Length 95th (ft)		38			21	48	7	100		24	31	
Internal Link Dist (ft)		150			320			155			312	
Turn Bay Length (ft)							100			115		
Base Capacity (vph)		449			537	543	762	1296		952	1536	
Starvation Cap Reductn		0			0	0	0	0		0	0	
Spillback Cap Reductn		0			0	0	0	0		0	0	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Storage Cap Reductn		0			0	0	0	0		0	0	
Reduced v/c Ratio		0.09			0.02	0.47	0.01	0.23		0.15	0.11	

Intersection Summary			
Area Type:	Other		
Cycle Length: 75			
Actuated Cycle Length: 75			
Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green			
Natural Cycle: 60			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.49			
Intersection Signal Delay: 6.1		Intersection LOS: A	
Intersection Capacity Utilization 53.8%		ICU Level of Service A	
Analysis Period (min) 15			

Splits and Phases: 402: Jefferson St & Huron St/Garage Entrance

Intersection	
Int Delay, s/veh	5.8

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	71	0	38	18	0	33	31	385	101	54	229	37
Future Vol, veh/h	71	0	38	18	0	33	31	385	101	54	229	37
Conflicting Peds, #/hr	0	0	0	60	0	60	60	0	60	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	0	-	0	0	-	-	80	-	-	0	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	0	0	0	0	0	0	0	2	0	0	2	0
Mvmt Flow	77	0	41	20	0	36	34	418	110	59	249	40

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	1066	-	389	1069	1068	593	349	0	0	588	0	0
Stage 1	447	-	-	601	601	-	-	-	-	-	-	-
Stage 2	619	-	-	468	467	-	-	-	-	-	-	-
Critical Hdwy	7.1	-	6.2	7.1	6.5	6.2	4.1	-	-	4.1	-	-
Critical Hdwy Stg 1	6.1	-	-	6.1	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.1	-	-	6.1	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	-	3.3	3.5	4	3.3	2.2	-	-	2.2	-	-
Pot Cap-1 Maneuver	202	0	664	201	223	509	1221	-	-	997	-	-
Stage 1	595	0	-	491	493	-	-	-	-	-	-	-
Stage 2	480	0	-	579	565	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	154	-	590	155	180	452	1151	-	-	940	-	-
Mov Cap-2 Maneuver	154	-	-	155	180	-	-	-	-	-	-	-
Stage 1	544	-	-	449	451	-	-	-	-	-	-	-
Stage 2	404	-	-	476	499	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	36.5	20	0.5	1.5
HCM LOS	E	C		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	EBLn2	WBLn1	WBLn2	SBL	SBT	SBR
Capacity (veh/h)	1151	-	-	154	590	155	452	940	-	-
HCM Lane V/C Ratio	0.029	-	-	0.501	0.07	0.126	0.079	0.062	-	-
HCM Control Delay (s)	8.2	-	-	49.8	11.6	31.6	13.7	9.1	-	-
HCM Lane LOS	A	-	-	E	B	D	B	A	-	-
HCM 95th %tile Q(veh)	0.1	-	-	2.4	0.2	0.4	0.3	0.2	-	-

Intersection	
Int Delay, s/veh	1.1

Movement	EBL	EBR	SET	SER	NWL	NWT
Lane Configurations						
Traffic Vol, veh/h	14	21	163	2	14	266
Future Vol, veh/h	14	21	163	2	14	266
Conflicting Peds, #/hr	60	60	0	60	60	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	100	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	15	23	177	2	15	289

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	617	298	0	0	239	0
Stage 1	238	-	-	-	-	-
Stage 2	379	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	453	741	-	-	1328	-
Stage 1	802	-	-	-	-	-
Stage 2	692	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	398	659	-	-	1252	-
Mov Cap-2 Maneuver	398	-	-	-	-	-
Stage 1	756	-	-	-	-	-
Stage 2	645	-	-	-	-	-

Approach	EB	SE	NW
HCM Control Delay, s	12.4	0	0.4
HCM LOS	B		

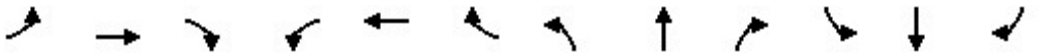
Minor Lane/Major Mvmt	NWL	NWT	EBLn1	SET	SER
Capacity (veh/h)	1252	-	522	-	-
HCM Lane V/C Ratio	0.012	-	0.073	-	-
HCM Control Delay (s)	7.9	-	12.4	-	-
HCM Lane LOS	A	-	B	-	-
HCM 95th %tile Q(veh)	0	-	0.2	-	-

Intersection	
Intersection Delay, s/veh	10.6
Intersection LOS	B

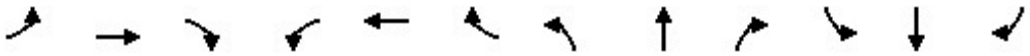
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	7	23	0	53	0	21	1	486	19	2	295	1
Future Vol, veh/h	7	23	0	53	0	21	1	486	19	2	295	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	8	25	0	58	0	23	1	528	21	2	321	1
Number of Lanes	0	1	0	0	1	0	0	2	0	0	2	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	2	2
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	2	2	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	2	2	1	1
HCM Control Delay	9.4	9.7	11.3	9.9
HCM LOS	A	A	B	A

Lane	NBLn1	NBLn2	EBLn1	WBLn1	SBLn1	SBLn2
Vol Left, %	0%	0%	23%	72%	1%	0%
Vol Thru, %	100%	93%	77%	0%	99%	99%
Vol Right, %	0%	7%	0%	28%	0%	1%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	244	262	30	74	150	149
LT Vol	1	0	7	53	2	0
Through Vol	243	243	23	0	148	148
RT Vol	0	19	0	21	0	1
Lane Flow Rate	265	285	33	80	162	161
Geometry Grp	5	5	2	2	5	5
Degree of Util (X)	0.381	0.405	0.055	0.129	0.244	0.242
Departure Headway (Hd)	5.172	5.119	6.044	5.761	5.401	5.39
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes
Cap	692	698	596	616	660	662
Service Time	2.94	2.887	4.044	3.852	3.178	3.166
HCM Lane V/C Ratio	0.383	0.408	0.055	0.13	0.245	0.243
HCM Control Delay	11.1	11.4	9.4	9.7	9.9	9.9
HCM Lane LOS	B	B	A	A	A	A
HCM 95th-tile Q	1.8	2	0.2	0.4	1	0.9



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	85	1087	212	158	1330	62	215	9	430	90	54	177
Future Volume (vph)	85	1087	212	158	1330	62	215	9	430	90	54	177
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	75		0	75		0	0		0	0		0
Storage Lanes	1		0	1		0	1		1	1		0
Taper Length (ft)	150			100			73			25		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.976			0.993				0.850		0.885	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	3454	0	1770	3514	0	1770	1863	1583	1770	1649	0
Flt Permitted	0.082			0.079			0.450			0.751		
Satd. Flow (perm)	153	3454	0	147	3514	0	838	1863	1583	1399	1649	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		26			5				116		148	
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		546			736			245			310	
Travel Time (s)		12.4			16.7			5.6			7.0	
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
Adj. Flow (vph)	92	1182	230	172	1446	67	234	10	467	98	59	192
Shared Lane Traffic (%)												
Lane Group Flow (vph)	92	1412	0	172	1513	0	234	10	467	98	251	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	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	60		60	60		60	60		60	60		60
Number of Detectors	1	2		1	2		1	2	1	1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru	Right	Left	Thru	
Leading Detector (ft)	20	100		20	100		20	100	20	20	100	
Trailing Detector (ft)	0	0		0	0		0	0	0	0	0	
Detector 1 Position(ft)	0	0		0	0		0	0	0	0	0	
Detector 1 Size(ft)	20	6		20	6		20	6	20	20	6	
Detector 1 Type	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	
Detector 1 Queue (s)	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	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	pm+pt	NA		pm+pt	NA		pm+pt	NA	pm+ov	pm+pt	NA	
Protected Phases	7	4		3	8		5	2	3	1	6	
Permitted Phases	4			8			2		2	6		



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase	7	4		3	8		5	2	3	1	6	
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0		5.0	5.0	5.0	5.0	5.0	
Minimum Split (s)	9.5	23.0		9.5	23.0		9.5	23.0	9.5	9.5	23.0	
Total Split (s)	10.0	54.0		10.0	54.0		10.0	36.0	10.0	10.0	36.0	
Total Split (%)	9.1%	49.1%		9.1%	49.1%		9.1%	32.7%	9.1%	9.1%	32.7%	
Maximum Green (s)	7.0	49.0		7.0	49.0		7.0	31.0	7.0	7.0	31.0	
Yellow Time (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	
All-Red Time (s)	0.0	2.0		0.0	2.0		0.0	2.0	0.0	0.0	2.0	
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)	3.0	5.0		3.0	5.0		3.0	5.0	3.0	3.0	5.0	
Lead/Lag	Lead	Lag		Lead	Lag		Lead	Lag	Lead	Lead	Lag	
Lead-Lag Optimize?	Yes	Yes		Yes	Yes				Yes			
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	
Recall Mode	None	C-Max		None	C-Max		Max	Max	None	None	None	
Walk Time (s)		7.0			7.0			7.0			7.0	
Flash Dont Walk (s)		11.0			11.0			11.0			11.0	
Pedestrian Calls (#/hr)		0			0			0			0	
Act Effct Green (s)	57.8	49.0		58.6	51.0		40.1	31.1	43.1	39.9	31.0	
Actuated g/C Ratio	0.53	0.45		0.53	0.46		0.36	0.28	0.39	0.36	0.28	
v/c Ratio	0.51	0.91		0.95	0.93		0.64	0.02	0.68	0.18	0.44	
Control Delay	23.5	37.9		59.9	37.5		34.7	28.8	26.2	22.8	15.8	
Queue Delay	0.0	24.3		0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Total Delay	23.5	62.2		59.9	37.5		34.7	28.8	26.2	22.8	15.8	
LOS	C	E		E	D		C	C	C	C	B	
Approach Delay		59.8			39.8			29.0			17.8	
Approach LOS		E			D			C			B	
90th %ile Green (s)	7.0	49.0		7.0	49.0		7.0	31.0	7.0	7.0	31.0	
90th %ile Term Code	Max	Coord		Max	Coord		MaxR	MaxR	Max	Max	Hold	
70th %ile Green (s)	7.0	49.0		7.0	49.0		7.0	31.0	7.0	7.0	31.0	
70th %ile Term Code	Max	Coord		Max	Coord		MaxR	MaxR	Max	Max	Hold	
50th %ile Green (s)	7.0	49.0		7.0	49.0		7.0	31.0	7.0	7.0	31.0	
50th %ile Term Code	Max	Coord		Max	Coord		MaxR	MaxR	Max	Max	Hold	
30th %ile Green (s)	7.0	49.0		7.0	49.0		7.0	31.0	7.0	7.0	31.0	
30th %ile Term Code	Max	Coord		Max	Coord		MaxR	MaxR	Max	Max	Hold	
10th %ile Green (s)	0.0	49.0		7.0	59.0		7.0	31.6	7.0	6.4	31.0	
10th %ile Term Code	Skip	Coord		Max	Coord		MaxR	MaxR	Max	Gap	Hold	
Queue Length 50th (ft)	29	471		55	575		114	5	204	44	56	
Queue Length 95th (ft)	62	#624		m#114	#715		178	19	325	81	129	
Internal Link Dist (ft)		466			656			165			230	
Turn Bay Length (ft)	75			75								
Base Capacity (vph)	183	1553		181	1632		365	527	691	532	571	
Starvation Cap Reductn	0	203		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	0.50	1.05		0.95	0.93		0.64	0.02	0.68	0.18	0.44	

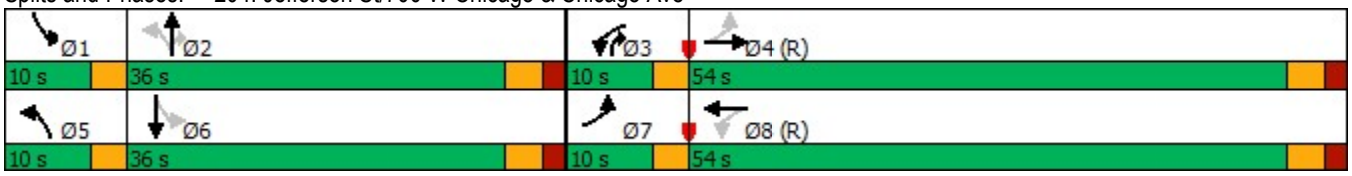
Intersection Summary

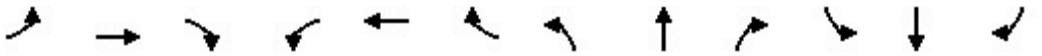
Area Type: Other

Cycle Length: 110	
Actuated Cycle Length: 110	
Offset: 13 (12%), Referenced to phase 4:EBTL and 8:WBTL, Start of Green	
Natural Cycle: 90	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.95	
Intersection Signal Delay: 43.3	Intersection LOS: D
Intersection Capacity Utilization 86.2%	ICU Level of Service E
Analysis Period (min) 15	

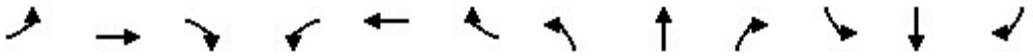
\# 95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 204: Jefferson St/700 W Chicago & Chicago Ave





Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	206	714	7	15	712	470	22	0	14	168	0	297
Future Volume (vph)	206	714	7	15	712	470	22	0	14	168	0	297
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	100		0	0		0	0		0	0		0
Storage Lanes	1		0	0		0	0		0	1		0
Taper Length (ft)	100			25			25			135		
Lane Util. Factor	1.00	0.95	0.95	0.95	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor		1.00			0.91			0.97		0.94		
Frt		0.998			0.941			0.948			0.850	
Flt Protected	0.950				0.999			0.970		0.950		
Satd. Flow (prot)	1770	3528	0	0	3013	0	0	1658	0	1770	1583	0
Flt Permitted	0.110				0.941			0.623		0.759		
Satd. Flow (perm)	205	3528	0	0	2837	0	0	1065	0	1324	1583	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		2			220			97			199	
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		375			838			269			257	
Travel Time (s)		8.5			19.0			6.1			5.8	
Confl. Peds. (#/hr)	149		35	35		149			49	49		
Confl. Bikes (#/hr)			2			30						
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)	224	776	8	16	774	511	24	0	15	183	0	323
Shared Lane Traffic (%)												
Lane Group Flow (vph)	224	784	0	0	1301	0	0	39	0	183	323	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			0			0			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway 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
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (ft)	20	100		20	100		20	100		20	100	
Trailing Detector (ft)	0	0		0	0		0	0		0	0	
Detector 1 Position(ft)	0	0		0	0		0	0		0	0	
Detector 1 Size(ft)	20	6		20	6		20	6		20	6	
Detector 1 Type	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	
Detector 1 Queue (s)	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	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	

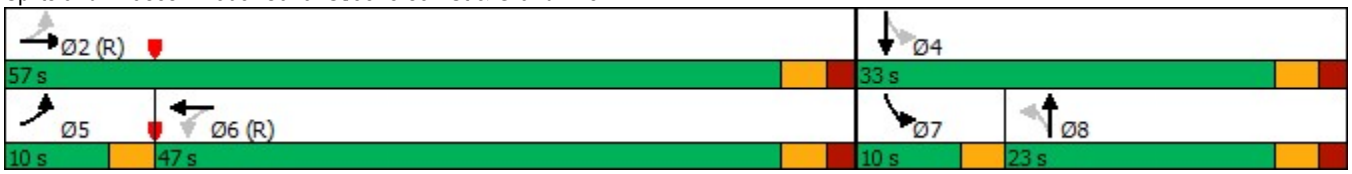


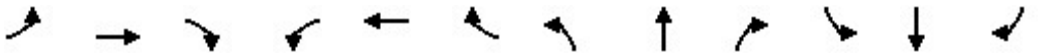
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	pm+pt	NA		Perm	NA		Perm	NA		pm+pt	NA	
Protected Phases	5	2			6			8		7	4	
Permitted Phases	2			6			8			4		
Detector Phase	5	2		6	6		8	8		7	4	
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Minimum Split (s)	10.0	23.0		23.0	23.0		23.0	23.0		10.0	23.0	
Total Split (s)	10.0	57.0		47.0	47.0		23.0	23.0		10.0	33.0	
Total Split (%)	11.1%	63.3%		52.2%	52.2%		25.6%	25.6%		11.1%	36.7%	
Maximum Green (s)	7.0	52.0		42.0	42.0		18.0	18.0		7.0	28.0	
Yellow Time (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
All-Red Time (s)	0.0	2.0		2.0	2.0		2.0	2.0		0.0	2.0	
Lost Time Adjust (s)	0.0	0.0			0.0			0.0		0.0	0.0	
Total Lost Time (s)	3.0	5.0			5.0			5.0		3.0	5.0	
Lead/Lag	Lead			Lag	Lag		Lag	Lag		Lead		
Lead-Lag Optimize?	Yes			Yes	Yes		Yes	Yes		Yes		
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	C-Max		C-Max	C-Max		None	None		None	None	
Walk Time (s)		7.0		7.0	7.0		7.0	7.0			7.0	
Flash Dont Walk (s)		11.0		11.0	11.0		11.0	11.0			11.0	
Pedestrian Calls (#/hr)		0		0	0		0	0			0	
Act Effct Green (s)	67.7	65.7			49.4			7.5		16.3	14.3	
Actuated g/C Ratio	0.75	0.73			0.55			0.08		0.18	0.16	
v/c Ratio	0.58	0.30			0.79			0.22		0.66	0.77	
Control Delay	27.9	6.0			19.1			2.9		43.8	26.0	
Queue Delay	0.0	0.1			0.0			0.1		0.0	0.2	
Total Delay	27.9	6.1			19.1			2.9		43.8	26.2	
LOS	C	A			B			A		D	C	
Approach Delay		11.0			19.1			2.9			32.6	
Approach LOS		B			B			A			C	
90th %ile Green (s)	11.5	56.5		42.0	42.0		13.5	13.5		7.0	23.5	
90th %ile Term Code	Max	Coord		Coord	Coord		Hold	Hold		Max	Gap	
70th %ile Green (s)	15.5	62.7		44.2	44.2		7.3	7.3		7.0	17.3	
70th %ile Term Code	Gap	Coord		Coord	Coord		Hold	Hold		Max	Gap	
50th %ile Green (s)	14.2	64.5		47.3	47.3		5.5	5.5		7.0	15.5	
50th %ile Term Code	Gap	Coord		Coord	Coord		Gap	Gap		Max	Hold	
30th %ile Green (s)	12.5	70.5		55.0	55.0		0.0	0.0		11.5	9.5	
30th %ile Term Code	Gap	Coord		Coord	Coord		Skip	Skip		Hold	Gap	
10th %ile Green (s)	12.8	74.5		58.7	58.7		0.0	0.0		7.5	5.5	
10th %ile Term Code	Gap	Coord		Coord	Coord		Skip	Skip		Hold	Gap	
Queue Length 50th (ft)	55	78			259			0		94	64	
Queue Length 95th (ft)	#157	92			#457			0		142	142	
Internal Link Dist (ft)		295			758			189			177	
Turn Bay Length (ft)	100											
Base Capacity (vph)	385	2577			1657			290		278	629	
Starvation Cap Reductn	0	745			0			0		0	0	
Spillback Cap Reductn	0	0			5			25		0	37	
Storage Cap Reductn	0	0			0			0		0	0	
Reduced v/c Ratio	0.58	0.43			0.79			0.15		0.66	0.55	

Intersection Summary		
Area Type:	Other	
Cycle Length: 90		
Actuated Cycle Length: 90		
Offset: 0 (0%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green		
Natural Cycle: 90		
Control Type: Actuated-Coordinated		
Maximum v/c Ratio: 0.79		
Intersection Signal Delay: 18.4		Intersection LOS: B
Intersection Capacity Utilization 93.5%		ICU Level of Service F
Analysis Period (min) 15		

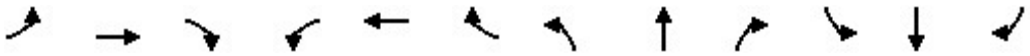
\# 95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 305: Canal St/Jefferson St & Grand Ave





Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	22	2	13	20	0	379	14	333	7	167	184	16
Future Volume (vph)	22	2	13	20	0	379	14	333	7	167	184	16
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	0		0	100		0	115		0
Storage Lanes	0		0	0		1	1		0	1		0
Taper Length (ft)	25			25			135			135		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor		0.84					0.88				0.99	
Frt		0.953				0.850		0.997			0.988	
Flt Protected		0.971			0.950		0.950			0.950		
Satd. Flow (prot)	0	1607	0	0	1805	1615	1770	1857	0	1770	1813	0
Flt Permitted		0.803			0.966		0.622			0.508		
Satd. Flow (perm)	0	1200	0	0	1835	1615	1016	1857	0	946	1813	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		14				337		1			8	
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		230			400			235			392	
Travel Time (s)		5.2			9.1			5.3			8.9	
Confl. Peds. (#/hr)	60		60				60					60
Confl. Bikes (#/hr)			10									10
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	2%	2%	2%	0%	0%	0%	2%	2%	2%	2%	2%	2%
Parking (#/hr)									100			15
Adj. Flow (vph)	24	2	14	22	0	412	15	362	8	182	200	17
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	40	0	0	22	412	15	370	0	182	217	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			12			12	
Link Offset(ft)		0			-10			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway 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
Turning Speed (mph)	15		9	60		60	15		60	60		9
Number of Detectors	1	2		1	2	1	1	2		1	2	
Detector Template	Left	Thru		Left	Thru	Right	Left	Thru		Left	Thru	
Leading Detector (ft)	20	100		20	100	20	20	100		20	100	
Trailing Detector (ft)	0	0		0	0	0	0	0		0	0	
Detector 1 Position(ft)	0	0		0	0	0	0	0		0	0	
Detector 1 Size(ft)	20	6		20	6	20	20	6		20	6	
Detector 1 Type	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	
Detector 1 Queue (s)	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	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	

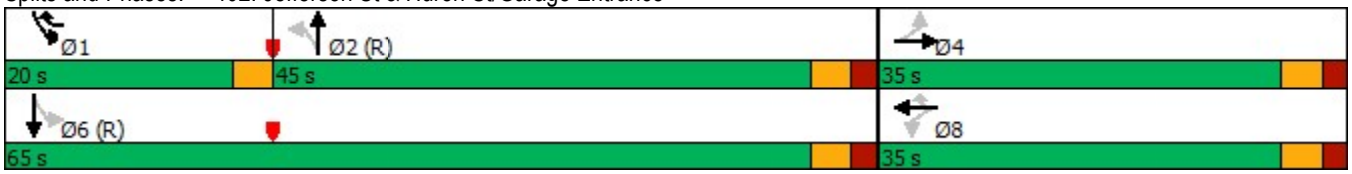


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA		Perm	NA	pm+ov	Perm	NA		pm+pt	NA	
Protected Phases		4			8	1		2		1	6	
Permitted Phases	4			8		8	2			6		
Detector Phase	4	4		8	8	1	2	2		1	6	
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0	5.0	5.0	5.0		5.0	5.0	
Minimum Split (s)	35.0	35.0		35.0	35.0	20.0	45.0	45.0		20.0	45.0	
Total Split (s)	35.0	35.0		35.0	35.0	20.0	45.0	45.0		20.0	65.0	
Total Split (%)	35.0%	35.0%		35.0%	35.0%	20.0%	45.0%	45.0%		20.0%	65.0%	
Maximum Green (s)	30.0	30.0		30.0	30.0	17.0	40.0	40.0		17.0	60.0	
Yellow Time (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0		3.0	3.0	
All-Red Time (s)	2.0	2.0		2.0	2.0	0.0	2.0	2.0		0.0	2.0	
Lost Time Adjust (s)		0.0			0.0	0.0	0.0	0.0		0.0	0.0	
Total Lost Time (s)		5.0			5.0	3.0	5.0	5.0		3.0	5.0	
Lead/Lag						Lead	Lag	Lag		Lead		
Lead-Lag Optimize?						Yes	Yes	Yes		Yes		
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Recall Mode	None	None		None	None	None	C-Max	C-Max		None	C-Max	
Walk Time (s)	7.0	7.0		7.0	7.0		7.0	7.0			7.0	
Flash Dont Walk (s)	11.0	11.0		11.0	11.0		11.0	11.0			11.0	
Pedestrian Calls (#/hr)	0	0		0	0		0	0			0	
Act Effct Green (s)		7.8			7.8	16.1	75.9	75.9		88.5	88.5	
Actuated g/C Ratio		0.08			0.08	0.16	0.76	0.76		0.88	0.88	
v/c Ratio		0.38			0.15	0.76	0.02	0.26		0.20	0.14	
Control Delay		38.2			44.1	17.1	5.3	5.4		1.9	1.8	
Queue Delay		0.0			0.0	0.0	0.0	0.0		0.0	0.0	
Total Delay		38.2			44.1	17.1	5.3	5.4		1.9	1.8	
LOS		D			D	B	A	A		A	A	
Approach Delay		38.2			18.5			5.4			1.8	
Approach LOS		D			B			A			A	
90th %ile Green (s)	11.2	11.2		11.2	11.2	10.8	65.0	65.0		10.8	78.8	
90th %ile Term Code	Gap	Gap		Hold	Hold	Gap	Coord	Coord		Gap	Coord	
70th %ile Green (s)	8.9	8.9		8.9	8.9	7.9	70.2	70.2		7.9	81.1	
70th %ile Term Code	Gap	Gap		Hold	Hold	Gap	Coord	Coord		Gap	Coord	
50th %ile Green (s)	7.4	7.4		7.4	7.4	7.2	72.4	72.4		7.2	82.6	
50th %ile Term Code	Gap	Gap		Hold	Hold	Gap	Coord	Coord		Gap	Coord	
30th %ile Green (s)	0.0	0.0		0.0	0.0	6.3	85.7	85.7		6.3	95.0	
30th %ile Term Code	Skip	Skip		Skip	Skip	Gap	Coord	Coord		Gap	Coord	
10th %ile Green (s)	0.0	0.0		0.0	0.0	5.6	86.4	86.4		5.6	95.0	
10th %ile Term Code	Skip	Skip		Skip	Skip	Gap	Coord	Coord		Gap	Coord	
Queue Length 50th (ft)		15			13	41	2	69		13	19	
Queue Length 95th (ft)		m32			36	130	10	139		31	41	
Internal Link Dist (ft)		150			320			155			312	
Turn Bay Length (ft)							100			115		
Base Capacity (vph)		369			550	662	771	1410		977	1605	
Starvation Cap Reductn		0			0	0	0	0		0	0	
Spillback Cap Reductn		0			0	0	0	0		0	0	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Storage Cap Reductn		0			0	0	0	0		0	0	
Reduced v/c Ratio		0.11			0.04	0.62	0.02	0.26		0.19	0.14	

Intersection Summary			
Area Type:	Other		
Cycle Length: 100			
Actuated Cycle Length: 100			
Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green			
Natural Cycle: 100			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.76			
Intersection Signal Delay: 9.8		Intersection LOS: A	
Intersection Capacity Utilization 66.6%		ICU Level of Service C	
Analysis Period (min) 15			
m Volume for 95th percentile queue is metered by upstream signal.			

Splits and Phases: 402: Jefferson St & Huron St/Garage Entrance



Intersection	
Int Delay, s/veh	7.3

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	48	0	27	26	0	48	33	567	134	72	314	38
Future Vol, veh/h	48	0	27	26	0	48	33	567	134	72	314	38
Conflicting Peds, #/hr	0	0	0	60	0	60	60	0	60	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	0	-	0	0	-	-	80	-	-	0	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	0	0	0	0	0	0	0	2	0	0	2	0
Mvmt Flow	52	0	29	28	0	52	36	616	146	78	341	41

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	1425	-	482	1413	1419	809	442	0	0	822	0	0
Stage 1	578	-	-	821	821	-	-	-	-	-	-	-
Stage 2	847	-	-	592	598	-	-	-	-	-	-	-
Critical Hdwy	7.1	-	6.2	7.1	6.5	6.2	4.1	-	-	4.1	-	-
Critical Hdwy Stg 1	6.1	-	-	6.1	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.1	-	-	6.1	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	-	3.3	3.5	4	3.3	2.2	-	-	2.2	-	-
Pot Cap-1 Maneuver	114	0	588	117	138	384	1129	-	-	816	-	-
Stage 1	505	0	-	371	391	-	-	-	-	-	-	-
Stage 2	359	0	-	496	494	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	77	-	523	88	107	341	1064	-	-	769	-	-
Mov Cap-2 Maneuver	77	-	-	88	107	-	-	-	-	-	-	-
Stage 1	460	-	-	338	356	-	-	-	-	-	-	-
Stage 2	277	-	-	397	419	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	80.5	33.9	0.4	1.7
HCM LOS	F	D		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	EBLn2	WBLn1	WBLn2	SBL	SBT	SBR
Capacity (veh/h)	1064	-	-	77	523	88	341	769	-	-
HCM Lane V/C Ratio	0.034	-	-	0.678	0.056	0.321	0.153	0.102	-	-
HCM Control Delay (s)	8.5	-	-	118.9	12.3	64.2	17.5	10.2	-	-
HCM Lane LOS	A	-	-	F	B	F	C	B	-	-
HCM 95th %tile Q(veh)	0.1	-	-	3.1	0.2	1.2	0.5	0.3	-	-

Intersection	
Int Delay, s/veh	1.1

Movement	EBL	EBR	SET	SER	NWL	NWT
Lane Configurations						
Traffic Vol, veh/h	14	18	213	4	25	340
Future Vol, veh/h	14	18	213	4	25	340
Conflicting Peds, #/hr	60	60	0	60	60	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	100	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	15	20	232	4	27	370

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	778	354	0	0	296	0
Stage 1	294	-	-	-	-	-
Stage 2	484	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	365	690	-	-	1265	-
Stage 1	756	-	-	-	-	-
Stage 2	620	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	317	613	-	-	1193	-
Mov Cap-2 Maneuver	317	-	-	-	-	-
Stage 1	713	-	-	-	-	-
Stage 2	571	-	-	-	-	-

Approach	EB	SE	NW
HCM Control Delay, s	14	0	0.6
HCM LOS	B		

Minor Lane/Major Mvmt	NWL	NWT	EBLn1	SET	SER
Capacity (veh/h)	1193	-	435	-	-
HCM Lane V/C Ratio	0.023	-	0.08	-	-
HCM Control Delay (s)	8.1	-	14	-	-
HCM Lane LOS	A	-	B	-	-
HCM 95th %tile Q(veh)	0.1	-	0.3	-	-

Intersection	
Intersection Delay, s/veh	13.4
Intersection LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	9	40	0	45	0	19	1	638	33	4	412	1
Future Vol, veh/h	9	40	0	45	0	19	1	638	33	4	412	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	10	43	0	49	0	21	1	693	36	4	448	1
Number of Lanes	0	1	0	0	1	0	0	2	0	0	2	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	2	2
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	2	2	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	2	2	1	1
HCM Control Delay	10.3	10.4	14.8	11.9
HCM LOS	B	B	B	B

Lane	NBLn1	NBLn2	EBLn1	WBLn1	SBLn1	SBLn2
Vol Left, %	0%	0%	18%	70%	2%	0%
Vol Thru, %	100%	91%	82%	0%	98%	100%
Vol Right, %	0%	9%	0%	30%	0%	0%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	320	352	49	64	210	207
LT Vol	1	0	9	45	4	0
Through Vol	319	319	40	0	206	206
RT Vol	0	33	0	19	0	1
Lane Flow Rate	348	383	53	70	228	225
Geometry Grp	5	5	2	2	5	5
Degree of Util (X)	0.53	0.576	0.097	0.124	0.368	0.362
Departure Headway (Hd)	5.487	5.419	6.553	6.427	5.801	5.788
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes
Cap	657	666	547	558	621	623
Service Time	3.211	3.143	4.591	4.463	3.53	3.517
HCM Lane V/C Ratio	0.53	0.575	0.097	0.125	0.367	0.361
HCM Control Delay	14.3	15.3	10.3	10.4	11.9	11.8
HCM Lane LOS	B	C	B	B	B	B
HCM 95th-tile Q	3.1	3.7	0.3	0.4	1.7	1.6

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	17	811	254	191	577	12	246	2	526	18	11	35
Future Volume (vph)	17	811	254	191	577	12	246	2	526	18	11	35
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	75		0	75		0	0		0	0		0
Storage Lanes	1		0	1		0	1		1	1		0
Taper Length (ft)	150			100			73			25		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.964			0.997				0.850		0.886	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	3412	0	1770	3529	0	1770	1863	1583	1770	1650	0
Flt Permitted	0.409			0.088			0.634			0.757		
Satd. Flow (perm)	762	3412	0	164	3529	0	1181	1863	1583	1410	1650	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		42			2				181		38	
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		546			736			245			310	
Travel Time (s)		12.4			16.7			5.6			7.0	
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
Adj. Flow (vph)	18	882	276	208	627	13	267	2	572	20	12	38
Shared Lane Traffic (%)												
Lane Group Flow (vph)	18	1158	0	208	640	0	267	2	572	20	50	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	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	60		60	60		60	60		60	60		60
Number of Detectors	1	2		1	2		1	2	1	1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru	Right	Left	Thru	
Leading Detector (ft)	20	100		20	100		20	100	20	20	100	
Trailing Detector (ft)	0	0		0	0		0	0	0	0	0	
Detector 1 Position(ft)	0	0		0	0		0	0	0	0	0	
Detector 1 Size(ft)	20	6		20	6		20	6	20	20	6	
Detector 1 Type	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	
Detector 1 Queue (s)	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	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	pm+pt	NA		pm+pt	NA		pm+pt	NA	pm+ov	pm+pt	NA	
Protected Phases	7	4		3	8		5	2	3	1	6	
Permitted Phases	4			8			2		2	6		

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase	7	4		3	8		5	2	3	1	6	
Switch Phase												
Minimum Initial (s)	3.0	5.0		5.0	5.0		5.0	5.0	5.0	5.0	5.0	
Minimum Split (s)	8.0	44.0		16.0	54.0		16.0	35.0	16.0	8.0	25.0	
Total Split (s)	10.0	44.0		20.0	54.0		20.0	36.0	20.0	10.0	26.0	
Total Split (%)	9.1%	40.0%		18.2%	49.1%		18.2%	32.7%	18.2%	9.1%	23.6%	
Maximum Green (s)	7.0	39.0		17.0	49.0		17.0	31.0	17.0	7.0	21.0	
Yellow Time (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	
All-Red Time (s)	0.0	2.0		0.0	2.0		0.0	2.0	0.0	0.0	2.0	
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)	3.0	5.0		3.0	5.0		3.0	5.0	3.0	3.0	5.0	
Lead/Lag	Lead	Lag		Lead	Lag		Lead	Lag	Lead	Lead	Lag	
Lead-Lag Optimize?	Yes	Yes		Yes	Yes		Yes	Yes	Yes	Yes	Yes	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	
Recall Mode	None	C-Max		None	C-Max		Max	Max	None	Max	Max	
Walk Time (s)		7.0			7.0			7.0			7.0	
Flash Dont Walk (s)		11.0			11.0			11.0			11.0	
Pedestrian Calls (#/hr)		0			0			0			0	
Act Effct Green (s)	50.7	42.7		61.0	55.2		43.0	31.0	49.3	30.0	21.0	
Actuated g/C Ratio	0.46	0.39		0.55	0.50		0.39	0.28	0.45	0.27	0.19	
v/c Ratio	0.04	0.86		0.73	0.36		0.48	0.00	0.71	0.05	0.14	
Control Delay	9.9	33.7		36.7	18.1		27.5	28.5	21.1	21.8	16.9	
Queue Delay	0.0	0.4		0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Total Delay	9.9	34.1		36.7	18.1		27.5	28.5	21.2	21.8	16.9	
LOS	A	C		D	B		C	C	C	C	B	
Approach Delay		33.7			22.7			23.2			18.3	
Approach LOS		C			C			C			B	
90th %ile Green (s)	6.8	39.0		17.0	49.2		17.0	31.0	17.0	7.0	21.0	
90th %ile Term Code	Gap	Coord		Max	Coord		MaxR	MaxR	Max	MaxR	MaxR	
70th %ile Green (s)	6.3	39.2		16.8	49.7		17.0	31.0	16.8	7.0	21.0	
70th %ile Term Code	Gap	Coord		Gap	Coord		MaxR	MaxR	Gap	MaxR	MaxR	
50th %ile Green (s)	0.0	42.0		14.0	59.0		17.0	31.0	14.0	7.0	21.0	
50th %ile Term Code	Skip	Coord		Gap	Coord		MaxR	MaxR	Gap	MaxR	MaxR	
30th %ile Green (s)	0.0	45.5		10.5	59.0		17.0	31.0	10.5	7.0	21.0	
30th %ile Term Code	Skip	Coord		Gap	Coord		MaxR	MaxR	Gap	MaxR	MaxR	
10th %ile Green (s)	0.0	47.6		8.4	59.0		17.0	31.0	8.4	7.0	21.0	
10th %ile Term Code	Skip	Coord		Gap	Coord		MaxR	MaxR	Gap	MaxR	MaxR	
Queue Length 50th (ft)	5	403		87	128		133	1	218	9	7	
Queue Length 95th (ft)	m11	#546		166	203		204	7	333	25	40	
Internal Link Dist (ft)		466			656			165			230	
Turn Bay Length (ft)	75			75								
Base Capacity (vph)	422	1348		339	1771		552	525	856	407	345	
Starvation Cap Reductn	0	29		0	0		0	0	7	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	0.04	0.88		0.61	0.36		0.48	0.00	0.67	0.05	0.14	

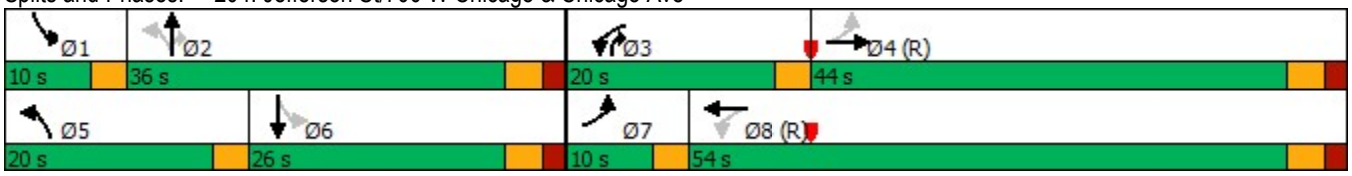
Intersection Summary

Area Type: Other

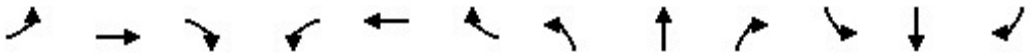
Cycle Length: 110	
Actuated Cycle Length: 110	
Offset: 18 (16%), Referenced to phase 4:EBTL and 8:WBTL, Start of Green	
Natural Cycle: 105	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.86	
Intersection Signal Delay: 27.2	Intersection LOS: C
Intersection Capacity Utilization 78.1%	ICU Level of Service D
Analysis Period (min) 15	

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

Splits and Phases: 204: Jefferson St/700 W Chicago & Chicago Ave



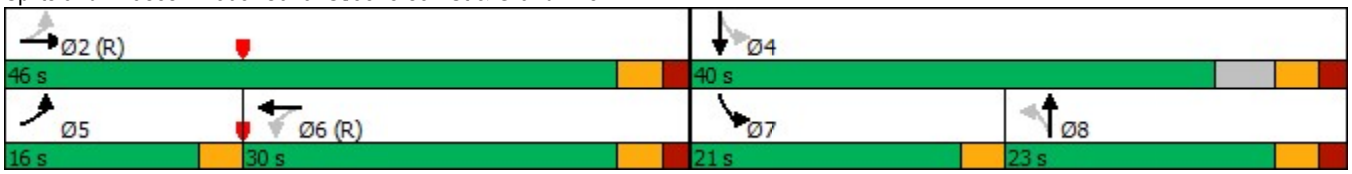
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	238	513	5	10	449	572	19	0	10	191	0	272
Future Volume (vph)	238	513	5	10	449	572	19	0	10	191	0	272
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	100		0	0		0	0		0	0		0
Storage Lanes	1		0	0		0	0		0	1		0
Taper Length (ft)	100			25			25			135		
Lane Util. Factor	1.00	0.95	0.95	0.95	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor		1.00			0.95			0.99		0.98		
Frt		0.999			0.917			0.954			0.850	
Flt Protected	0.950							0.968		0.950		
Satd. Flow (prot)	1770	3534	0	0	3073	0	0	1697	0	1770	1583	0
Flt Permitted	0.141				0.949					0.777		
Satd. Flow (perm)	263	3534	0	0	2916	0	0	1754	0	1413	1583	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		1			348			97			413	
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		375			838			269			257	
Travel Time (s)		8.5			19.0			6.1			5.8	
Confl. Peds. (#/hr)	56		17	17		56			18	18		
Confl. Bikes (#/hr)						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)	259	558	5	11	488	622	21	0	11	208	0	296
Shared Lane Traffic (%)												
Lane Group Flow (vph)	259	563	0	0	1121	0	0	32	0	208	296	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			0			0			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway 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
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (ft)	20	100		20	100		20	100		20	100	
Trailing Detector (ft)	0	0		0	0		0	0		0	0	
Detector 1 Position(ft)	0	0		0	0		0	0		0	0	
Detector 1 Size(ft)	20	6		20	6		20	6		20	6	
Detector 1 Type	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	
Detector 1 Queue (s)	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	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	



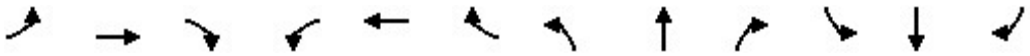
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	pm+pt	NA		Perm	NA		Perm	NA		pm+pt	NA	
Protected Phases	5	2			6			8		7	4	
Permitted Phases	2			6			8			4		
Detector Phase	5	2		6	6		8	8		7	4	
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Minimum Split (s)	10.0	23.0		23.0	23.0		23.0	23.0		10.0	23.0	
Total Split (s)	16.0	46.0		30.0	30.0		23.0	23.0		21.0	40.0	
Total Split (%)	17.8%	51.1%		33.3%	33.3%		25.6%	25.6%		23.3%	44.4%	
Maximum Green (s)	13.0	41.0		25.0	25.0		18.0	18.0		18.0	35.0	
Yellow Time (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
All-Red Time (s)	0.0	2.0		2.0	2.0		2.0	2.0		0.0	2.0	
Lost Time Adjust (s)	0.0	0.0			0.0			0.0		0.0	0.0	
Total Lost Time (s)	3.0	5.0			5.0			5.0		3.0	5.0	
Lead/Lag	Lead			Lag	Lag		Lag	Lag		Lead		
Lead-Lag Optimize?	Yes			Yes	Yes		Yes	Yes		Yes		
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	C-Max		C-Max	C-Max		None	None		None	None	
Walk Time (s)		7.0		7.0	7.0		7.0	7.0			7.0	
Flash Dont Walk (s)		11.0		11.0	11.0		11.0	11.0			11.0	
Pedestrian Calls (#/hr)		0		0	0		0	0			0	
Act Effct Green (s)	62.6	60.6			45.3			5.5		21.4	19.4	
Actuated g/C Ratio	0.70	0.67			0.50			0.06		0.24	0.22	
v/c Ratio	0.67	0.24			0.68			0.16		0.53	0.45	
Control Delay	27.2	5.8			16.6			1.8		32.8	2.5	
Queue Delay	0.0	0.0			0.0			0.0		0.0	0.0	
Total Delay	27.2	5.8			16.6			1.8		32.8	2.5	
LOS	C	A			B			A		C	A	
Approach Delay		12.5			16.6			1.8			15.0	
Approach LOS		B			B			A			B	
90th %ile Green (s)	18.6	53.5		31.9	31.9		5.5	5.5		18.0	26.5	
90th %ile Term Code	Gap	Coord		Coord	Coord		Gap	Gap		Max	Hold	
70th %ile Green (s)	14.9	53.5		35.6	35.6		5.5	5.5		18.0	26.5	
70th %ile Term Code	Gap	Coord		Coord	Coord		Gap	Gap		Max	Hold	
50th %ile Green (s)	11.7	55.3		40.6	40.6		5.5	5.5		16.2	24.7	
50th %ile Term Code	Gap	Coord		Coord	Coord		Gap	Gap		Gap	Hold	
30th %ile Green (s)	8.7	68.4		56.7	56.7		0.0	0.0		13.6	11.6	
30th %ile Term Code	Gap	Coord		Coord	Coord		Skip	Skip		Gap	Hold	
10th %ile Green (s)	7.3	72.1		61.8	61.8		0.0	0.0		9.9	7.9	
10th %ile Term Code	Gap	Coord		Coord	Coord		Skip	Skip		Gap	Hold	
Queue Length 50th (ft)	73	66			186			0		94	0	
Queue Length 95th (ft)	164	84			#362			0		152	6	
Internal Link Dist (ft)		295			758			189			177	
Turn Bay Length (ft)	100											
Base Capacity (vph)	425	2378			1641			428		447	920	
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	0.61	0.24			0.68			0.07		0.47	0.32	

Intersection Summary			
Area Type:	Other		
Cycle Length: 90			
Actuated Cycle Length: 90			
Offset: 0 (0%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green			
Natural Cycle: 75			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.68			
Intersection Signal Delay: 14.7		Intersection LOS: B	
Intersection Capacity Utilization 79.9%		ICU Level of Service D	
Analysis Period (min) 15			
# 95th percentile volume exceeds capacity, queue may be longer.			
Queue shown is maximum after two cycles.			

Splits and Phases: 305: Canal St/Jefferson St & Grand Ave



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	13	3	8	26	0	483	9	389	9	221	159	8
Future Volume (vph)	13	3	8	26	0	483	9	389	9	221	159	8
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	0		0	100		0	115		0
Storage Lanes	0		0	0		1	1		0	1		0
Taper Length (ft)	25			25			135			135		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor		0.84					0.86				0.99	
Frt		0.953				0.850		0.997			0.993	
Flt Protected		0.974			0.950		0.950			0.950		
Satd. Flow (prot)	0	1615	0	0	1805	1615	1805	1858	0	1805	1476	0
Flt Permitted		0.855					0.643			0.456		
Satd. Flow (perm)	0	1286	0	0	1900	1615	1051	1858	0	866	1476	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		9				400		2			7	
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		230			400			235			392	
Travel Time (s)		5.2			9.1			5.3			8.9	
Confl. Peds. (#/hr)	60		60				60					60
Confl. Bikes (#/hr)			10									10
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	2%	0%	0%	0%	0%	0%	0%	2%	0%	0%	2%	0%
Parking (#/hr)									100		19	
Adj. Flow (vph)	14	3	9	28	0	525	10	423	10	240	173	9
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	26	0	0	28	525	10	433	0	240	182	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			12			12	
Link Offset(ft)		0			-10			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.31	1.00
Turning Speed (mph)	15		9	60		60	15		60	60		9
Number of Detectors	1	2		1	2	1	1	2		1	2	
Detector Template	Left	Thru		Left	Thru	Right	Left	Thru		Left	Thru	
Leading Detector (ft)	20	100		20	100	20	20	100		20	100	
Trailing Detector (ft)	0	0		0	0	0	0	0		0	0	
Detector 1 Position(ft)	0	0		0	0	0	0	0		0	0	
Detector 1 Size(ft)	20	6		20	6	20	20	6		20	6	
Detector 1 Type	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	
Detector 1 Queue (s)	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	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	

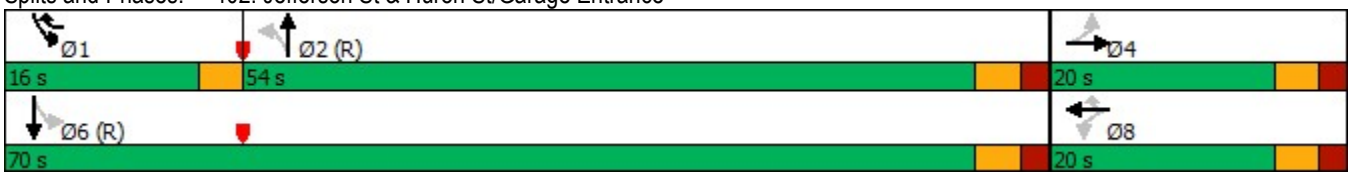


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA		Perm	NA	pm+ov	Perm	NA		pm+pt	NA	
Protected Phases		4			8	1		2		1	6	
Permitted Phases	4			8		8	2			6		
Detector Phase	4	4		8	8	1	2	2		1	6	
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0	5.0	5.0	5.0		5.0	5.0	
Minimum Split (s)	20.0	20.0		20.0	20.0	20.0	45.0	45.0		20.0	45.0	
Total Split (s)	20.0	20.0		20.0	20.0	16.0	54.0	54.0		16.0	70.0	
Total Split (%)	22.2%	22.2%		22.2%	22.2%	17.8%	60.0%	60.0%		17.8%	77.8%	
Maximum Green (s)	15.0	15.0		15.0	15.0	13.0	49.0	49.0		13.0	65.0	
Yellow Time (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0		3.0	3.0	
All-Red Time (s)	2.0	2.0		2.0	2.0	0.0	2.0	2.0		0.0	2.0	
Lost Time Adjust (s)		0.0			0.0	0.0	0.0	0.0		0.0	0.0	
Total Lost Time (s)		5.0			5.0	3.0	5.0	5.0		3.0	5.0	
Lead/Lag						Lead	Lag	Lag		Lead		
Lead-Lag Optimize?						Yes	Yes	Yes		Yes		
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Recall Mode	None	None		None	None	None	C-Max	C-Max		None	C-Max	
Walk Time (s)	4.0	4.0		4.0	4.0		4.0	4.0			4.0	
Flash Dont Walk (s)	11.0	11.0		11.0	11.0		11.0	11.0			11.0	
Pedestrian Calls (#/hr)	0	0		0	0		0	0			0	
Act Effct Green (s)		7.2			7.4	17.4	64.6	64.6		81.4	82.4	
Actuated g/C Ratio		0.08			0.08	0.19	0.72	0.72		0.90	0.92	
v/c Ratio		0.24			0.18	0.83	0.01	0.32		0.27	0.13	
Control Delay		33.4			40.3	19.3	7.4	7.5		1.8	1.6	
Queue Delay		0.0			0.0	0.0	0.0	0.0		0.0	0.0	
Total Delay		33.4			40.3	19.3	7.4	7.5		1.8	1.6	
LOS		C			D	B	A	A		A	A	
Approach Delay		33.4			20.4			7.5			1.7	
Approach LOS		C			C			A			A	
90th %ile Green (s)	9.9	9.9		9.9	9.9	18.0	49.1	49.1		18.0	70.1	
90th %ile Term Code	Hold	Hold		Gap	Gap	Gap	Coord	Coord		Gap	Coord	
70th %ile Green (s)	8.3	8.3		8.3	8.3	10.6	58.1	58.1		10.6	71.7	
70th %ile Term Code	Hold	Hold		Gap	Gap	Gap	Coord	Coord		Gap	Coord	
50th %ile Green (s)	0.0	0.0		0.0	0.0	15.4	66.6	66.6		15.4	85.0	
50th %ile Term Code	Skip	Skip		Skip	Skip	Gap	Coord	Coord		Gap	Coord	
30th %ile Green (s)	0.0	0.0		0.0	0.0	9.0	73.0	73.0		9.0	85.0	
30th %ile Term Code	Skip	Skip		Skip	Skip	Gap	Coord	Coord		Gap	Coord	
10th %ile Green (s)	0.0	0.0		0.0	0.0	5.7	76.3	76.3		5.7	85.0	
10th %ile Term Code	Skip	Skip		Skip	Skip	Gap	Coord	Coord		Gap	Coord	
Queue Length 50th (ft)		9			15	65	1	68		0	0	
Queue Length 95th (ft)		34			40	148	10	206		37	34	
Internal Link Dist (ft)		150			320			155			312	
Turn Bay Length (ft)							100			115		
Base Capacity (vph)		221			316	671	754	1334		933	1351	
Starvation Cap Reductn		0			0	0	0	0		0	0	
Spillback Cap Reductn		0			0	0	0	0		0	0	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Storage Cap Reductn		0			0	0	0	0		0	0	
Reduced v/c Ratio		0.12			0.09	0.78	0.01	0.32		0.26	0.13	

Intersection Summary			
Area Type:	Other		
Cycle Length: 90			
Actuated Cycle Length: 90			
Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green			
Natural Cycle: 85			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.83			
Intersection Signal Delay: 11.2		Intersection LOS: B	
Intersection Capacity Utilization 74.0%		ICU Level of Service D	
Analysis Period (min) 15			

Splits and Phases: 402: Jefferson St & Huron St/Garage Entrance



Intersection	
Int Delay, s/veh	6.9

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	23	0	13	34	0	63	16	693	175	94	342	20
Future Vol, veh/h	23	0	13	34	0	63	16	693	175	94	342	20
Conflicting Peds, #/hr	0	0	0	60	0	60	60	0	60	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	0	-	0	0	-	-	80	-	-	0	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	0	0	0	0	0	0	0	2	0	0	2	0
Mvmt Flow	25	0	14	37	0	68	17	753	190	102	372	22

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	1623	-	503	1596	1600	968	454	0	0	1003	0	0
Stage 1	647	-	-	942	942	-	-	-	-	-	-	-
Stage 2	976	-	-	654	658	-	-	-	-	-	-	-
Critical Hdwy	7.1	-	6.2	7.1	6.5	6.2	4.1	-	-	4.1	-	-
Critical Hdwy Stg 1	6.1	-	-	6.1	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.1	-	-	6.1	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	-	3.3	3.5	4	3.3	2.2	-	-	2.2	-	-
Pot Cap-1 Maneuver	83	0	573	87	107	311	1117	-	-	698	-	-
Stage 1	463	0	-	318	344	-	-	-	-	-	-	-
Stage 2	305	0	-	459	464	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	48	-	509	65	79	276	1053	-	-	658	-	-
Mov Cap-2 Maneuver	48	-	-	65	79	-	-	-	-	-	-	-
Stage 1	430	-	-	295	319	-	-	-	-	-	-	-
Stage 2	213	-	-	356	370	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	95.9	55.5	0.2	2.4
HCM LOS	F	F		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	EBLn2	WBLn1	WBLn2	SBL	SBT	SBR
Capacity (veh/h)	1053	-	-	48	509	65	276	658	-	-
HCM Lane V/C Ratio	0.017	-	-	0.521	0.028	0.569	0.248	0.155	-	-
HCM Control Delay (s)	8.5	-	-	143.1	12.3	116.9	22.3	11.5	-	-
HCM Lane LOS	A	-	-	F	B	F	C	B	-	-
HCM 95th %tile Q(veh)	0.1	-	-	1.9	0.1	2.4	1	0.5	-	-

Intersection	
Int Delay, s/veh	0.7

Movement	EBL	EBR	SET	SER	NWL	NWT
Lane Configurations						
Traffic Vol, veh/h	12	11	191	2	16	397
Future Vol, veh/h	12	11	191	2	16	397
Conflicting Peds, #/hr	60	60	0	60	60	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	100	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	13	12	208	2	17	432

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	795	329	0	0	270	0
Stage 1	269	-	-	-	-	-
Stage 2	526	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	357	712	-	-	1293	-
Stage 1	776	-	-	-	-	-
Stage 2	593	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	313	633	-	-	1219	-
Mov Cap-2 Maneuver	313	-	-	-	-	-
Stage 1	732	-	-	-	-	-
Stage 2	551	-	-	-	-	-

Approach	EB	SE	NW
HCM Control Delay, s	14.3	0	0.3
HCM LOS	B		

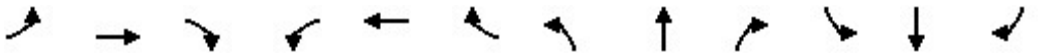
Minor Lane/Major Mvmt	NWL	NWT	EBLn1	SET	SER
Capacity (veh/h)	1219	-	413	-	-
HCM Lane V/C Ratio	0.014	-	0.061	-	-
HCM Control Delay (s)	8	-	14.3	-	-
HCM Lane LOS	A	-	B	-	-
HCM 95th %tile Q(veh)	0	-	0.2	-	-

Intersection	
Intersection Delay, s/veh	15.4
Intersection LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	12	24	0	27	0	11	1	787	20	2	434	1
Future Vol, veh/h	12	24	0	27	0	11	1	787	20	2	434	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	13	26	0	29	0	12	1	855	22	2	472	1
Number of Lanes	0	1	0	0	1	0	0	2	0	0	2	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	2	2
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	2	2	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	2	2	1	1
HCM Control Delay	10.2	10.1	17.6	12.1
HCM LOS	B	B	C	B

Lane	NBLn1	NBLn2	EBLn1	WBLn1	SBLn1	SBLn2
Vol Left, %	0%	0%	33%	71%	1%	0%
Vol Thru, %	100%	95%	67%	0%	99%	100%
Vol Right, %	0%	5%	0%	29%	0%	0%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	395	414	36	38	219	218
LT Vol	1	0	12	27	2	0
Through Vol	394	394	24	0	217	217
RT Vol	0	20	0	11	0	1
Lane Flow Rate	429	449	39	41	238	237
Geometry Grp	5	5	2	2	5	5
Degree of Util (X)	0.64	0.666	0.072	0.075	0.384	0.382
Departure Headway (Hd)	5.372	5.336	6.659	6.553	5.809	5.801
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes
Cap	678	683	539	548	621	621
Service Time	3.072	3.036	4.688	4.582	3.536	3.528
HCM Lane V/C Ratio	0.633	0.657	0.072	0.075	0.383	0.382
HCM Control Delay	17.1	18	10.2	10.1	12.1	12.1
HCM Lane LOS	C	C	B	B	B	B
HCM 95th-tile Q	4.6	5.1	0.2	0.2	1.8	1.8



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	17	860	320	241	617	12	289	2	627	18	11	35
Future Volume (vph)	17	860	320	241	617	12	289	2	627	18	11	35
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	75		0	75		0	0		0	0		0
Storage Lanes	1		0	1		0	1		1	1		0
Taper Length (ft)	150			100			73			25		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.959			0.997				0.850		0.886	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	3394	0	1770	3529	0	1770	1863	1583	1770	1650	0
Flt Permitted	0.392			0.098			0.619			0.757		
Satd. Flow (perm)	730	3394	0	183	3529	0	1153	1863	1583	1410	1650	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		52			2				178		38	
Link Speed (mph)		30			30			20			30	
Link Distance (ft)		546			736			245			310	
Travel Time (s)		12.4			16.7			8.4			7.0	
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
Adj. Flow (vph)	18	935	348	262	671	13	314	2	682	20	12	38
Shared Lane Traffic (%)												
Lane Group Flow (vph)	18	1283	0	262	684	0	314	2	682	20	50	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	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		12	15		12	15		12	15		12
Number of Detectors	1	2		1	2		1	2	1	1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru	Right	Left	Thru	
Leading Detector (ft)	20	100		20	100		20	100	20	20	100	
Trailing Detector (ft)	0	0		0	0		0	0	0	0	0	
Detector 1 Position(ft)	0	0		0	0		0	0	0	0	0	
Detector 1 Size(ft)	20	6		20	6		20	6	20	20	6	
Detector 1 Type	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	
Detector 1 Queue (s)	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	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	pm+pt	NA		pm+pt	NA		pm+pt	NA	pm+ov	pm+pt	NA	
Protected Phases	7	4		3	8		5	2	3	1	6	
Permitted Phases	4			8			2		2	6		

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase	7	4		3	8		5	2	3	1	6	
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0		5.0	5.0	5.0	5.0	5.0	
Minimum Split (s)	9.5	25.0		9.5	25.0		9.5	25.0	9.5	9.5	25.0	
Total Split (s)	10.0	41.0		23.0	54.0		20.0	36.0	23.0	10.0	26.0	
Total Split (%)	9.1%	37.3%		20.9%	49.1%		18.2%	32.7%	20.9%	9.1%	23.6%	
Maximum Green (s)	7.0	36.0		20.0	49.0		17.0	31.0	20.0	7.0	21.0	
Yellow Time (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	
All-Red Time (s)	0.0	2.0		0.0	2.0		0.0	2.0	0.0	0.0	2.0	
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)	3.0	5.0		3.0	5.0		3.0	5.0	3.0	3.0	5.0	
Lead/Lag	Lead	Lag		Lead	Lag		Lead	Lag	Lead	Lead	Lag	
Lead-Lag Optimize?	Yes	Yes		Yes	Yes		Yes		Yes		Yes	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	
Recall Mode	None	C-Min		None	C-Min		Max	Max	None	None	None	
Walk Time (s)		4.0			4.0			4.0			4.0	
Flash Dont Walk (s)		16.0			16.0			16.0			16.0	
Pedestrian Calls (#/hr)		0			0			0			0	
Act Effct Green (s)	47.7	39.7		61.0	55.2		43.0	37.1	58.4	24.6	17.9	
Actuated g/C Ratio	0.43	0.36		0.55	0.50		0.39	0.34	0.53	0.22	0.16	
v/c Ratio	0.05	1.02		0.78	0.39		0.55	0.00	0.74	0.06	0.17	
Control Delay	9.8	59.3		39.7	18.4		29.1	28.0	20.3	22.0	17.2	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0	0.8	0.0	0.0	
Total Delay	9.8	59.3		39.7	18.4		29.1	28.0	21.0	22.0	17.2	
LOS	A	E		D	B		C	C	C	C	B	
Approach Delay		58.7			24.3			23.6			18.6	
Approach LOS		E			C			C			B	
90th %ile Green (s)	6.8	36.0		20.0	49.2		17.0	31.0	20.0	7.0	21.0	
90th %ile Term Code	Gap	Coord		Max	Coord		MaxR	MaxR	Max	Max	Hold	
70th %ile Green (s)	6.3	36.0		20.0	49.7		17.0	31.3	20.0	6.7	21.0	
70th %ile Term Code	Gap	Coord		Max	Coord		MaxR	MaxR	Max	Gap	Hold	
50th %ile Green (s)	0.0	37.9		18.1	59.0		17.0	41.0	18.1	0.0	21.0	
50th %ile Term Code	Skip	Coord		Gap	Coord		MaxR	MaxR	Gap	Skip	Hold	
30th %ile Green (s)	0.0	42.2		13.8	59.0		17.0	41.0	13.8	0.0	21.0	
30th %ile Term Code	Skip	Coord		Gap	Coord		MaxR	MaxR	Gap	Skip	Hold	
10th %ile Green (s)	0.0	46.2		9.8	59.0		43.0	41.0	9.8	0.0	0.0	
10th %ile Term Code	Skip	Coord		Gap	Coord		Hold	MaxR	Gap	Skip	Skip	
Queue Length 50th (ft)	5	~518		120	139		162	1	232	9	7	
Queue Length 95th (ft)	m11	#680		210	219		243	7	449	25	40	
Internal Link Dist (ft)		466			656			165			230	
Turn Bay Length (ft)	75			75								
Base Capacity (vph)	388	1256		390	1771		575	627	971	348	345	
Starvation Cap Reductn	0	0		0	0		0	0	90	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	0.05	1.02		0.67	0.39		0.55	0.00	0.77	0.06	0.14	

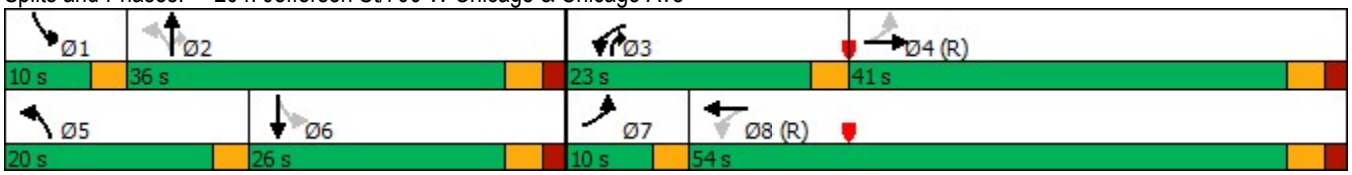
Intersection Summary

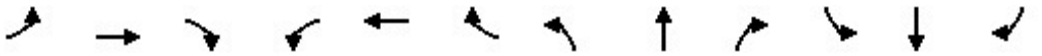
Area Type: Other

Cycle Length: 110	
Actuated Cycle Length: 110	
Offset: 21 (19%), Referenced to phase 4:EBTL and 8:WBTL, Start of Green	
Natural Cycle: 90	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 1.02	
Intersection Signal Delay: 37.5	Intersection LOS: D
Intersection Capacity Utilization 87.8%	ICU Level of Service E
Analysis Period (min) 15	

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

Splits and Phases: 204: Jefferson St/700 W Chicago & Chicago Ave





Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	297	485	5	11	399	722	20	0	10	225	0	319
Future Volume (vph)	297	485	5	11	399	722	20	0	10	225	0	319
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	100		0	0		0	0		0	0		0
Storage Lanes	1		0	0		0	0		0	1		0
Taper Length (ft)	100			25			25			135		
Lane Util. Factor	1.00	0.95	0.95	0.95	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor		1.00			0.99							
Frt		0.999			0.904			0.955			0.850	
Flt Protected	0.950							0.968		0.950		
Satd. Flow (prot)	1770	3535	0	0	3159	0	0	1722	0	1770	1583	0
Flt Permitted	0.094				0.949					0.778		
Satd. Flow (perm)	175	3535	0	0	2998	0	0	1779	0	1449	1583	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		1			496			97			495	
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		375			838			269			257	
Travel Time (s)		8.5			19.0			6.1			5.8	
Confl. Bikes (#/hr)			6			10						
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)	323	527	5	12	434	785	22	0	11	245	0	347
Shared Lane Traffic (%)												
Lane Group Flow (vph)	323	532	0	0	1231	0	0	33	0	245	347	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			0			0			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway 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
Turning Speed (mph)	15		12	15		12	15		12	15		12
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (ft)	20	100		20	100		20	100		20	100	
Trailing Detector (ft)	0	0		0	0		0	0		0	0	
Detector 1 Position(ft)	0	0		0	0		0	0		0	0	
Detector 1 Size(ft)	20	6		20	6		20	6		20	6	
Detector 1 Type	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	
Detector 1 Queue (s)	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	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	pm+pt	NA		Perm	NA		Perm	NA		pm+pt	NA	

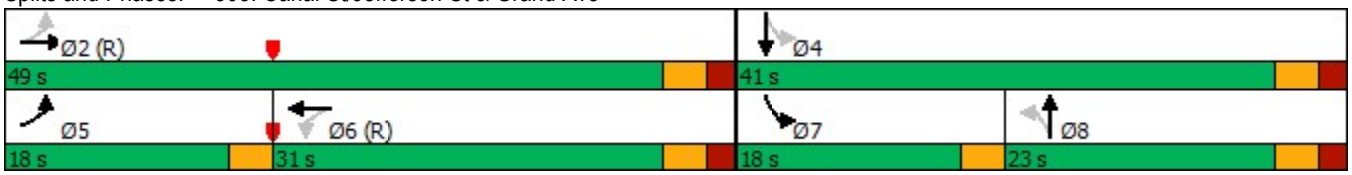
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Protected Phases	5	2			6			8		7	4	
Permitted Phases	2			6			8			4		
Detector Phase	5	2		6	6		8	8		7	4	
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Minimum Split (s)	10.0	30.0		30.0	30.0		23.0	23.0		10.0	30.0	
Total Split (s)	18.0	49.0		31.0	31.0		23.0	23.0		18.0	41.0	
Total Split (%)	20.0%	54.4%		34.4%	34.4%		25.6%	25.6%		20.0%	45.6%	
Maximum Green (s)	15.0	44.0		26.0	26.0		18.0	18.0		15.0	36.0	
Yellow Time (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
All-Red Time (s)	0.0	2.0		2.0	2.0		2.0	2.0		0.0	2.0	
Lost Time Adjust (s)	0.0	0.0			0.0			0.0		0.0	0.0	
Total Lost Time (s)	3.0	5.0			5.0			5.0		3.0	5.0	
Lead/Lag	Lead			Lag	Lag		Lag	Lag		Lead		
Lead-Lag Optimize?	Yes			Yes	Yes		Yes	Yes		Yes		
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	C-Max		C-Max	C-Max		None	None		None	None	
Walk Time (s)		7.0		7.0	7.0		7.0	7.0			7.0	
Flash Dont Walk (s)		11.0		11.0	11.0		11.0	11.0			11.0	
Pedestrian Calls (#/hr)		0		0	0		0	0			0	
Act Effct Green (s)	63.4	61.4			42.7			5.5		20.6	18.6	
Actuated g/C Ratio	0.70	0.68			0.47			0.06		0.23	0.21	
v/c Ratio	0.81	0.22			0.73			0.17		0.64	0.48	
Control Delay	33.3	5.1			16.3			1.8		38.1	2.4	
Queue Delay	0.0	0.0			0.0			0.0		0.0	0.0	
Total Delay	33.3	5.1			16.3			1.8		38.1	2.4	
LOS	C	A			B			A		D	A	
Approach Delay		15.7			16.3			1.8			17.1	
Approach LOS		B			B			A			B	
90th %ile Green (s)	22.8	56.5		30.7	30.7		5.5	5.5		15.0	23.5	
90th %ile Term Code	Gap	Coord		Coord	Coord		Gap	Gap		Max	Hold	
70th %ile Green (s)	19.3	56.5		34.2	34.2		5.5	5.5		15.0	23.5	
70th %ile Term Code	Gap	Coord		Coord	Coord		Gap	Gap		Max	Hold	
50th %ile Green (s)	16.3	56.5		37.2	37.2		5.5	5.5		15.0	23.5	
50th %ile Term Code	Gap	Coord		Coord	Coord		Gap	Gap		Max	Hold	
30th %ile Green (s)	11.1	67.0		52.9	52.9		0.0	0.0		15.0	13.0	
30th %ile Term Code	Gap	Coord		Coord	Coord		Skip	Skip		Max	Hold	
10th %ile Green (s)	9.0	70.7		58.7	58.7		0.0	0.0		11.3	9.3	
10th %ile Term Code	Gap	Coord		Coord	Coord		Skip	Skip		Gap	Hold	
Queue Length 50th (ft)	93	61			195			0		115	0	
Queue Length 95th (ft)	200	63			#372			0		188	0	
Internal Link Dist (ft)		295			758			189			177	
Turn Bay Length (ft)	100											
Base Capacity (vph)	436	2413			1684			433		396	930	
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	0.74	0.22			0.73			0.08		0.62	0.37	

Intersection Summary

Area Type:	Other		
Cycle Length: 90			
Actuated Cycle Length: 90			
Offset: 0 (0%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green			
Natural Cycle: 80			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.81			
Intersection Signal Delay: 16.1		Intersection LOS: B	
Intersection Capacity Utilization 83.3%		ICU Level of Service E	
Analysis Period (min) 15			

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 305: Canal St/Jefferson St & Grand Ave



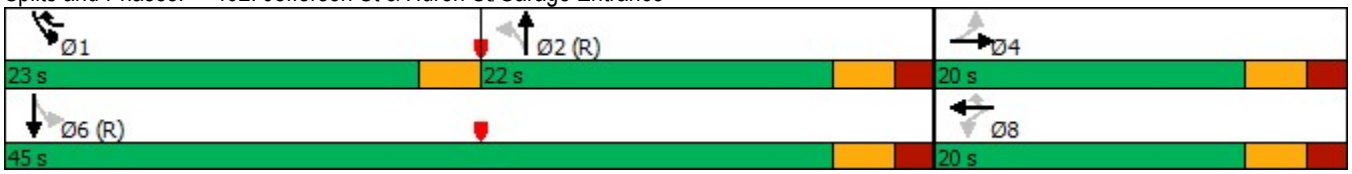
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	15	4	8	31	0	571	9	481	12	284	191	8
Future Volume (vph)	15	4	8	31	0	571	9	481	12	284	191	8
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	0		0	100		0	115		0
Storage Lanes	0		0	0		1	1		0	1		0
Taper Length (ft)	25			25			135			135		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor		0.88					0.90				0.99	
Frt		0.958				0.850		0.996			0.994	
Flt Protected		0.973			0.950		0.950			0.950		
Satd. Flow (prot)	0	1649	0	0	1805	1615	1770	1856	0	1805	1435	0
Flt Permitted		0.887					0.622			0.218		
Satd. Flow (perm)	0	1393	0	0	1900	1615	1047	1856	0	414	1435	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		9				76		2			6	
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		230			400			235			392	
Travel Time (s)		5.2			9.1			5.3			8.9	
Confl. Peds. (#/hr)	60		60				60					60
Confl. Bikes (#/hr)			10									10
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	2%	0%	2%	0%	0%	0%	2%	2%	0%	0%	2%	2%
Parking (#/hr)									100		24	
Adj. Flow (vph)	16	4	9	34	0	621	10	523	13	309	208	9
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	29	0	0	34	621	10	536	0	309	217	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			12			12	
Link Offset(ft)		0			-10			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.37	1.00
Turning Speed (mph)	15		12	60		60	15		60	60		12
Number of Detectors	1	2		1	2	1	1	2		1	2	
Detector Template	Left	Thru		Left	Thru	Right	Left	Thru		Left	Thru	
Leading Detector (ft)	20	100		20	100	20	20	100		20	100	
Trailing Detector (ft)	0	0		0	0	0	0	0		0	0	
Detector 1 Position(ft)	0	0		0	0	0	0	0		0	0	
Detector 1 Size(ft)	20	6		20	6	20	20	6		20	6	
Detector 1 Type	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	
Detector 1 Queue (s)	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	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA		Perm	NA	pm+ov	Perm	NA		pm+pt	NA	
Protected Phases		4			8	1		2		1	6	
Permitted Phases	4			8		8	2			6		
Detector Phase	4	4		8	8	1	2	2		1	6	
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0	5.0	5.0	5.0		5.0	5.0	
Minimum Split (s)	20.0	20.0		20.0	20.0	21.0	22.0	22.0		21.0	25.0	
Total Split (s)	20.0	20.0		20.0	20.0	23.0	22.0	22.0		23.0	45.0	
Total Split (%)	30.8%	30.8%		30.8%	30.8%	35.4%	33.8%	33.8%		35.4%	69.2%	
Maximum Green (s)	15.0	15.0		15.0	15.0	20.0	17.0	17.0		20.0	40.0	
Yellow Time (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0		3.0	3.0	
All-Red Time (s)	2.0	2.0		2.0	2.0	0.0	2.0	2.0		0.0	2.0	
Lost Time Adjust (s)		0.0			0.0	0.0	0.0	0.0		0.0	0.0	
Total Lost Time (s)		5.0			5.0	3.0	5.0	5.0		3.0	5.0	
Lead/Lag						Lead	Lag	Lag		Lead		
Lead-Lag Optimize?						Yes	Yes	Yes		Yes		
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Recall Mode	None	None		None	None	None	C-Max	C-Max		None	C-Max	
Walk Time (s)	4.0	4.0		4.0	4.0	4.0	4.0	4.0		4.0	4.0	
Flash Dont Walk (s)	10.0	10.0		10.0	10.0	10.0	12.0	12.0		10.0	11.0	
Pedestrian Calls (#/hr)	0	0		0	0	0	0	0		0	0	
Act Effct Green (s)		7.0			7.2	28.9	28.1	28.1		56.5	57.5	
Actuated g/C Ratio		0.11			0.11	0.44	0.43	0.43		0.87	0.88	
v/c Ratio		0.18			0.16	0.82	0.02	0.67		0.36	0.17	
Control Delay		22.7			27.2	22.0	16.6	25.8		3.3	2.3	
Queue Delay		0.0			0.0	0.0	0.0	0.0		0.0	0.0	
Total Delay		22.7			27.2	22.0	16.6	25.8		3.3	2.3	
LOS		C			C	C	B	C		A	A	
Approach Delay		22.7			22.3			25.7			2.9	
Approach LOS		C			C			C			A	
90th %ile Green (s)	9.5	9.5		9.5	9.5	25.5	17.0	17.0		25.5	45.5	
90th %ile Term Code	Hold	Hold		Gap	Gap	Max	Coord	Coord		Max	Coord	
70th %ile Green (s)	8.0	8.0		8.0	8.0	24.5	19.5	19.5		24.5	47.0	
70th %ile Term Code	Hold	Hold		Gap	Gap	Gap	Coord	Coord		Gap	Coord	
50th %ile Green (s)	0.0	0.0		0.0	0.0	25.6	31.4	31.4		25.6	60.0	
50th %ile Term Code	Skip	Skip		Skip	Skip	Gap	Coord	Coord		Gap	Coord	
30th %ile Green (s)	0.0	0.0		0.0	0.0	23.5	33.5	33.5		23.5	60.0	
30th %ile Term Code	Skip	Skip		Skip	Skip	Gap	Coord	Coord		Gap	Coord	
10th %ile Green (s)	0.0	0.0		0.0	0.0	18.0	39.0	39.0		18.0	60.0	
10th %ile Term Code	Skip	Skip		Skip	Skip	Gap	Coord	Coord		Gap	Coord	
Queue Length 50th (ft)		7			13	201	2	144		0	0	
Queue Length 95th (ft)		28			34	201	13	#425		63	44	
Internal Link Dist (ft)		150			320			155			312	
Turn Bay Length (ft)							100			115		
Base Capacity (vph)		328			438	770	452	802		869	1270	
Starvation Cap Reductn		0			0	0	0	0		0	0	
Spillback Cap Reductn		0			0	0	0	0		0	0	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Storage Cap Reductn		0			0	0	0	0		0	0	
Reduced v/c Ratio		0.09			0.08	0.81	0.02	0.67		0.36	0.17	

Intersection Summary			
Area Type:	Other		
Cycle Length: 65			
Actuated Cycle Length: 65			
Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green			
Natural Cycle: 65			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.82			
Intersection Signal Delay: 17.5		Intersection LOS: B	
Intersection Capacity Utilization 83.7%		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.			

Splits and Phases: 402: Jefferson St & Huron St/Garage Entrance



Intersection	
Int Delay, s/veh	15.5

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	17	0	10	41	0	77	18	826	223	119	432	21
Future Vol, veh/h	17	0	10	41	0	77	18	826	223	119	432	21
Conflicting Peds, #/hr	0	0	0	60	0	60	60	0	60	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	0	-	0	0	-	-	80	-	-	0	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	0	0	0	0	0	0	0	2	0	0	2	0
Mvmt Flow	18	0	11	45	0	84	20	898	242	129	470	23

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	1961	-	602	1924	1930	1139	553	0	0	1200	0	0
Stage 1	800	-	-	1119	1119	-	-	-	-	-	-	-
Stage 2	1161	-	-	805	811	-	-	-	-	-	-	-
Critical Hdwy	7.1	-	6.2	7.1	6.5	6.2	4.1	-	-	4.1	-	-
Critical Hdwy Stg 1	6.1	-	-	6.1	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.1	-	-	6.1	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	-	3.3	3.5	4	3.3	2.2	-	-	2.2	-	-
Pot Cap-1 Maneuver	48	0	503	51	67	247	1027	-	-	589	-	-
Stage 1	382	0	-	253	285	-	-	-	-	-	-	-
Stage 2	240	0	-	379	396	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	21	-	447	~ 36	45	220	968	-	-	555	-	-
Mov Cap-2 Maneuver	21	-	-	~ 36	45	-	-	-	-	-	-	-
Stage 1	353	-	-	234	263	-	-	-	-	-	-	-
Stage 2	137	-	-	268	287	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	263.9	159.5	0.1	2.8
HCM LOS	F	F		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	EBLn2	WBLn1	WBLn2	SBL	SBT	SBR
Capacity (veh/h)	968	-	-	21	447	36	220	555	-	-
HCM Lane V/C Ratio	0.02	-	-	0.88	0.024	1.238	0.38	0.233	-	-
HCM Control Delay (s)	8.8	-	-	$ 411.3	13.3	$ 400.6	31.1	13.4	-	-
HCM Lane LOS	A	-	-	F	B	F	D	B	-	-
HCM 95th %tile Q(veh)	0.1	-	-	2.5	0.1	4.7	1.7	0.9	-	-

Notes			
~: Volume exceeds capacity	$: Delay exceeds 300s	+: Computation Not Defined	*: All major volume in platoon

Intersection	
Int Delay, s/veh	0.8

Movement	EBL	EBR	SET	SER	NWL	NWT
Lane Configurations						
Traffic Vol, veh/h	14	12	227	3	17	493
Future Vol, veh/h	14	12	227	3	17	493
Conflicting Peds, #/hr	60	60	0	60	60	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	100	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	15	13	247	3	18	536

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	941	369	0	0	310	0
Stage 1	309	-	-	-	-	-
Stage 2	632	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	292	677	-	-	1250	-
Stage 1	745	-	-	-	-	-
Stage 2	530	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	256	602	-	-	1179	-
Mov Cap-2 Maneuver	256	-	-	-	-	-
Stage 1	703	-	-	-	-	-
Stage 2	492	-	-	-	-	-

Approach	EB	SE	NW
HCM Control Delay, s	16.3	0	0.3
HCM LOS	C		

Minor Lane/Major Mvmt	NWL	NWT	EBLn1	SET	SER
Capacity (veh/h)	1179	-	348	-	-
HCM Lane V/C Ratio	0.016	-	0.081	-	-
HCM Control Delay (s)	8.1	-	16.3	-	-
HCM Lane LOS	A	-	C	-	-
HCM 95th %tile Q(veh)	0	-	0.3	-	-

Intersection	
Intersection Delay, s/veh	25.4
Intersection LOS	D

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	15	26	0	28	0	12	1	994	21	3	513	1
Future Vol, veh/h	15	26	0	28	0	12	1	994	21	3	513	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	16	28	0	30	0	13	1	1080	23	3	558	1
Number of Lanes	0	1	0	0	1	0	0	2	0	0	2	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	2	2
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	2	2	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	2	2	1	1
HCM Control Delay	10.7	10.6	31.9	14.8
HCM LOS	B	B	D	B

Lane	NBLn1	NBLn2	EBLn1	WBLn1	SBLn1	SBLn2
Vol Left, %	0%	0%	37%	70%	1%	0%
Vol Thru, %	100%	96%	63%	0%	99%	100%
Vol Right, %	0%	4%	0%	30%	0%	0%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	498	518	41	40	260	258
LT Vol	1	0	15	28	3	0
Through Vol	497	497	26	0	257	257
RT Vol	0	21	0	12	0	1
Lane Flow Rate	541	563	45	43	282	280
Geometry Grp	5	5	2	2	5	5
Degree of Util (X)	0.836	0.865	0.087	0.083	0.487	0.483
Departure Headway (Hd)	5.562	5.533	7.005	6.895	6.217	6.209
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes
Cap	650	653	513	520	578	579
Service Time	3.291	3.261	5.036	4.929	3.96	3.951
HCM Lane V/C Ratio	0.832	0.862	0.088	0.083	0.488	0.484
HCM Control Delay	30.3	33.4	10.7	10.6	14.8	14.7
HCM Lane LOS	D	D	B	B	B	B
HCM 95th-tile Q	9.1	10	0.3	0.3	2.7	2.6