CITY OF MADISON

INTER-DEPARTMENTAL

CORRESPONDENCE

DATE: August 21, 2015

TO: Natalie Erdmann, Director of Planning and Community and Economic Development

FROM: David C. Dryer, P.E., CAPP City Traffic Engineer and Parking Manager

SUBJECT: **Department of Transportation Staff Review of Judge Doyle Square (JDS)**

Transportation Staff have completed its review of the current Judge Doyle Square (JDS) development proposal. The study identifies and estimates the impacts that the JDS development will have on the public surface transportation system. Trip generation rates were applied to the proposed development using the Institute of Transportation Engineers *Trip Generation Manual 9th Edition*. The manual is the nationally recognized method for estimating trip generation rates for development. The estimates developed in this review do not include additional office space that will be constructed at the existing Anchor Bank site. For purposes of this study, Phase 1 is defined as the office space developed on block 88 and Phase 2 is defined as the office expansion completed on block 105.

The City of Madison enjoys a high percentage of trips made by transit, bicycling, and walking. This is especially relevant with employment centers near the downtown core, where transit, pedestrian, and bicycle facilities are readily available. The 2009-2013 American Community Survey shows a transit/walking/bicycling mode-share of about 23% for the City of Madison. While the ITE trip generation rates likely include some alternative mode use, it is expected to be lower than 23%. To recognize this factor, the estimated trips produced from the development were reduced by 20% for purposes of review of the proposal; again this reflects the downtown's high percentage of transit, walking and bicycling trips. A successful and well thought out transportation demand management plan is a necessary and crucial component to the success of this development.

A.M. TRIP GENERATION PHASE 1								
USE	**ITE Code**	**FACTOR**	**X=**	**Equation**	**Trips**	**20% Reduction**	**ENTER**	**EXIT**
Exact Sciences Corporate Office	Single Tenant Office Building (715)	1000 SQF	273.5	T=1.67(X)+21.93	480	385	345	40
Hotel	Hotel (310)	Rooms	250	LN(T)=.85LN(X)+.12	125	100	55	45
Restaurant	High Turnover sit-down Restaurant (932)	1000 SQF	3.3	13.33(X)	45	35	20	15
TOTAL TRIPS					650	520	420	100

A.M. TRIP GENERATION PHASE 2

USE	ITE Code	FACTOR	X=	Equation	Trips	20% REDUCTION	Enter	Exit
Exact Sciences Corporate Office	Single Tenant Office Building (715)	1000 SQF	383.4	T=1.67(X)+21.93	660	530	470	60
Hotel	Hotel (310)	Rooms	250	LN(T)=.85LN(X)+.12	125	100	55	45
Restaurant	High Turnover Sit-down Restaurant (932)	1000 SQF	3.3	13.33(X)	45	35	20	15
TOTAL					830	665	545	120

P.M. TRIP GENERATION PHASE 1

Use	ITE Code	Factor	X=	Equation	Trips	20% REDUCTION	Enter	Exit
Exact Sciences Corporate Office	Single Tenant Office Building (715)	1000 SQF	273.5	T=1.52(X)+34.60	450	360	55	305
Hotel	Hotel (310)	Rooms	250	.61(x)	155	125	85	40
Restaurant	High Turnover sit-down Restaurant (932)	1000 SQF	3.3	18.49(X)	60	50	30	20
Total					665	535	170	365

P.M. TRIP GENERATION PHASE 2

USE	ITE Code	Factor	X=	Equation	Trips	20% Reduction	Enter	Exit
Exact Sciences Corporate Office	Single Tenant Office Building (715)	1000 SQF	383.4	T=1.52(X)+34.60	620	495	75	420
Hotel	Hotel (310)	Rooms	250	.61(x)	155	125	85	40
Restaurant	High Turnover sit-down Restaurant (932)	1000 SQF	3.3	18.49(X)	60	50	30	20
Total					835	670	190	480

While this review concentrates on the downtown core, it should be noted that traffic volumes will increase slightly on the major arterial corridors serving the downtown. These arterials, along with transit, bicycle and pedestrian facilities are crucial in allowing the downtown to continue to thrive as an employment, education, and entertainment center. Given the unique geography of the City of Madison, the City will continue to depend on all modes of transportation going forward--including its arterial roadways.

Ingress/ Egress Impacts

The developer has proposed two access locations onto Doty Street and one access point onto Wilson Street. Traffic Engineering staff recommend that a queue study be executed at all ingress points to ensure ticketing gates are placed in locations to prevent queuing on and blocking sidewalks and into Doty Street or Wilson Street.

The westerly access point to Doty is situated between Martin Luther King Jr. Blvd and Pinckney Street, approximately aligned with the exit from 10 East Doty. This access point has a single ingress and single egress lane. This is important as vehicles exiting the block 88 development and 10 East Doty will need to occupy the same gap in traffic from the MLK Jr. Blvd traffic signal. It is recommended this exit be signed, "right turn into near lane only", to avoid overlapping conflicts between parking garages. The additional access point will increase the difficulty for vehicles exiting 10 East Doty Street to weave across Doty Street and make the right turn onto Pinckney Street. It should be noted that the expected increase in pedestrians and increase in motor vehicle traffic associated with the development, is expected to result in additional crossing conflicts and delay developing at the Pinckney-Doty Street intersection.

The second access point to Doty Street is located between Pinckney and King Streets. This access point is currently proposed as a single ingress, single egress and an additional reversible lane. This exit point will be difficult to egress during P.M. peak hours due to traffic that queues back from the Doty-King Street traffic signal. On-street parking may need to be removed to facilitate ingress/egress from the facility at this location.

The access onto Wilson Street is located in a similar location to the existing Government East Garage. It is recommended that some parking to the east of the driveway location be removed to better facilitate ingress/egress from this location.

The applicant shall show a 10-foot vision clearance along the sidewalk for all vehicles exiting the access points including at the loading zones. This is to protect pedestrians and reduce motor vehicle and pedestrian conflicts.

AM Peak Hour Impacts

Phase 1

There are several nearby intersections that operate over capacity today and that are expected to have higher levels of congestion when Phase 1 comes online. At times with current traffic levels, the northbound left turn from John Nolen Drive to Broom Street spills back into the northbound through lanes of John Nolen Drive. The majority of traffic utilizes the right lane of the dual left turn bay. Vehicles need to be in the right lane to access Wilson Street which currently only has a single right turn lane. This unbalanced lane utilization problem is expected to increase.

Additionally, it is likely that northbound traffic turning left from John Nolen Drive to Wilson Street at Blair Street is likely to increase. Currently there is only room for approximately one vehicle to make this movement without blocking northbound John Nolen Drive. Congestion is expected to rise as additional vehicles attempt this movement. Congestion may limit options related to the reconstruction of the intersection, as federal and state funds will require quantifiable improvements in congestion necessary to secure funding.

Butler Street conveys traffic and pedestrians between East Washington Avenue and Wilson Street. Currently the intersection of Main and Butler Streets is all-way stop controlled. Heavy interactions between pedestrians and motor vehicles are present, and traffic often queues back to East Washington Avenue. As traffic increases at this intersection, pedestrians and motor vehicle conflicts are expected to increase. An increase in vehicle and pedestrian interactions at the Main Street-Hancock intersection is also likely as motorists attempt to bypass the queue on Butler Street.

Additional traffic congestion will also be experienced on Wilson Street at the Butler-King St. intersection. Current traffic volumes often extend back on Wilson Street to Franklin Street. Queues are expected to extend past this point with the addition of Phase 1 traffic.

The Doty-MLK street intersection is also expected to see traffic queues and congestion during Phase 1 of the development.

Phase 2

The intersections mentioned previously are anticipated to experience increased congestion as the additional Phase 2 office space comes online. The major impact is anticipated to occur on John Nolen Drive. It is expected that traffic will extend inbound across the John Nolen Drive Causeway as a result of the northbound left turn queue at Broom Street extending beyond the turn bay storage. This will reduce northbound John Nolen Drive to a de-facto single inbound travel lane resulting in large delay across the causeway. In addition, if motorists fail to clear the North Shore Drive intersection, intersection blockage will result.

PM Peak Hour Impacts

Phase 1

Impacts from Phase 1 of the development are limited primarily to intersections that currently operate over capacity. The East Washington and Webster Street intersection is projected to spill back to King Street as the northbound right turn onto East Washington currently has volumes which exceed capacity.

Delays at the intersection of Hamilton-Wilson-Henry are expected to increase as a result of Phase 1 development. Because there is only one westbound traffic lane on Wilson Street from Henry to Broom, queues are expected to build on Wilson Street and extend eastward past Carroll Street during the P.M. peak travel hour.

Further west, at the Broom and Wilson Street intersection, because only one lane of westbound traffic can be provided, traffic is expected to extend back to the Hamilton/Wilson intersection.

Traffic may divert and increase at the Doty-Henry intersection as motorists try to avoid the queues associated with westbound Wilson Street at Broom Street. This diversion is likely to increase pedestrian/bicycle interaction at this intersection.

Motorists on John Nolen Drive, southbound at Broom Street, are expected to experience significant additional delays as an increase of traffic accessing John Nolen Drive from Broom Street requires more green time to process. While this will increase delay on John Nolen Drive, the increase in congestion on this stretch of roadway is the least likely to cause additional issues, due to the large storage area between Broom Street and the next upstream intersection at Monona Terrace entrance.

Phase 2

In addition to the Phase 1 impacts, the increased development associated with Phase 2 brings additional traffic and impacts to the Hamilton-Wilson-Henry intersection. Traffic is projected to queue eastward from this intersection back to Pinckney Street, a distance of about 1500 feet. The model anticipates traffic queues on the Wilson Street side streets, Carroll and MLK Jr. Blvd, extending back into Doty Street. Staff believes this future is unlikely to unfold strictly as modeled, as motorists will seek alternate routes simply to avoid the congestion. As a result, we can expect additional traffic increases at the John Nolen/Wilson/Williamson/Blair intersection and on the Capitol Square Streets.

Maximum Volume to Capacity Ratio P.M.

Intersection	Existing (V/C)	Phase 1 (V/C)	Phase 2 (V/C)
Fairchild & West Washington	0.88	0.88	0.88
East Washington & Webster	1.57	1.69	1.69
Fairchild & Main	0.61	0.61	0.61
Webster & Main	0.61	0.61	0.61
Doty & Hamilton & Fairchild	0.77	0.89	0.89
Doty & MLK Jr. Blvd	0.95	0.95	0.95
Doty & King & Webster	1.11	1.19	1.22
Hamilton & Henry & Wilson	1.03	1.36	1.46
Butler & King & Wilson	0.69	0.71	0.71
Blair & John Nolen & Wilson	0.91	0.93	0.93
John Nolen & North Shore	1.21	1.26	1.28
John Nolen & Broom	0.98	1.04	1.04
Broom & Wilson	0.72	0.8	0.85
Blair & East Washington	1.18	1.18	1.18

Maximum Volume to Capacity Ratio A.M.			
Intersection	**Existing (V/C)**	**Phase 1 (V/C)**	**Phase 2 (V/C)**
Fairchild & West Washington	0.74	0.86	0.92
East Washington & Webster	0.88	0.88	0.88
Fairchild & Main	0.59	0.67	0.72
Webster & Main	0.34	0.34	0.34
Doty & Hamilton & Fairchild	0.78	0.92	0.99
Doty & MLK Jr. Blvd	0.89	1.13	1.18
Doty & King & Webster	0.63	0.63	0.63
Hamilton & Henry & Webster	0.92	0.92	0.92
Butler & King & Wilson	0.76	0.88	0.92
Blair & John Nolen & Wilson	0.78	0.81	0.81
John Nolen & North Shore	1.47	1.47	1.47
John Nolen & Broom	1.31	1.31	1.31
Broom & Wilson	0.51	0.55	0.56
Blair & East Washington	1.58	1.58	1.58

Possible Mitigation Strategies

The mitigation strategies discussed below require further and detailed engineering study. They are provided only for consideration as one possible way to address the impacts associated with the JDS development. As with any development, it is unlikely that all impacts can be mitigated. As noted previously, increased development will increase the interaction between motorists and pedestrians/bicyclists.

The intersection of Butler-Wilson-King Street is a bottleneck towards the east end of Wilson Street. The City Council may wish to consider the pros and cons of providing an additional southwesterly lane, for a total of two from the two-way section of Wilson Street to the one-way section of Wilson Street. This would reduce the level of delay and congestion experienced at this intersection. This would require the removal of some on-street parking along with physical reconfiguration of the existing lanes and alignment.

The Council may wish to further an engineering study of the Broom-Wilson intersection to determine whether a dual right turn lane is feasible inbound on Broom to Wilson St. This would improve the lane utilization of the northbound left turn from John Nolen Drive to Broom Street. Doing so alleviates traffic from backing up into northbound John Nolen Drive and will reduce the likelihood that traffic will queue back across the causeway. This option does eliminate the landscaped island in the southeast quadrant of the intersection, a distinct disadvantage.

The intersection of Wilson, Henry and Hamilton is an acute bottleneck. The Council may wish to consider furthering an engineering study of the feasibility of an additional egress point from downtown to John Nolen Drive. This connection could be made via Henry Street. An additional railroad crossing would require approval from the State Railroad Commission. An intersection of Henry and John Nolen Drive could be signalized and made right-turn only, with no break provided in

the landscaped John Nolen Drive median. It is recognized that additional access may not be supported by abutting property owners.

Currently, a peak hour travel lane exists on Doty Street between Hamilton and East Washington Avenue. Staff recommends the peak hour lane is used for traffic movement during the A.M. peak on Doty Street between Hamilton and King Street. This will alleviate the capacity issues at Doty-MLK as well as facilitate ingress into the new parking structure and development.

Summary

Given the substantial increased development on blocks 88 and 105, there is a significant impact on the transportation system in the downtown core. This impact is manifest even with a 20% reduction in trips used to recognize the high transit, biking, and walking modes Madison enjoys in the downtown area. It should be noted that staffs' experience is that as congestion increases, drivers become increasingly frustrated by delay and less likely to yield to pedestrians in crosswalks or share the road with bicyclists. We also find that as queues extend past upstream intersections, the chances of gridlock increase, traffic extends over crosswalks, and pedestrians cross between vehicles blocking intersections which reduce a pedestrian's ability to see and be seen.

There are several large traffic mitigation concepts that offer the potential to ameliorate traffic congestion associated with the JDS project. The Council may wish to have those options explored further for feasibility. The identified street modifications will help disperse traffic and contain congestion to locations where it is more manageable. Despite the region's high use of alternate modes of transportation, the majority of trips produced by this development will be carried by the City's surface arterial street system, including Park Street, John Nolen Drive, University Avenue, East and West Washington Avenues, Williamson Street, and the Johnson/Gorham corridor. Ultimately, it is the Council which has the difficult task of striking a balance between increased development and increased congestion and more frequent motorist-pedestrian/bicyclist interaction.

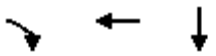
cc: George Austin, Judge Doyle Square Project Director

Lane Group	EBT	EBR	WBT	SBT	SBR
Act Effct Green (s)	32.6	32.6	32.6	19.2	19.2
Actuated g/C Ratio	0.41	0.41	0.41	0.24	0.24
v/c Ratio	0.25	0.74	0.41	0.51	0.50
Control Delay	17.0	26.8	19.9	29.6	7.7
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	17.0	26.8	19.9	29.6	7.7
LOS	B	C	B	C	A
Approach Delay	24.8		19.9	20.4	
Approach LOS	C		B	C	

Intersection Summary	
Cycle Length: 80	
Actuated Cycle Length: 80	
Offset: 63.2 (79%), Referenced to phase 2:SBTL, Start of Green	
Control Type: Pretimed	
Maximum v/c Ratio: 0.74	
Intersection Signal Delay: 22.5	Intersection LOS: C
Intersection Capacity Utilization 79.9%	ICU Level of Service D
Analysis Period (min) 15	

Lane Group	EBL	EBT	WBT	WBR	NBT	NBR
Act Effct Green (s)	36.0	36.0	36.0	36.0	18.4	18.4
Actuated g/C Ratio	0.45	0.45	0.45	0.45	0.23	0.23
v/c Ratio	0.03	0.24	0.31	0.88	0.81	0.62
Control Delay	12.8	15.3	15.6	31.6	29.8	10.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	12.8	15.3	15.6	31.6	29.8	10.4
LOS	B	B	B	C	C	B
Approach Delay		15.1	28.5		22.0	
Approach LOS		B	C		C	

Intersection Summary	
Cycle Length: 80	
Actuated Cycle Length: 80	
Offset: 12.8 (16%), Referenced to phase 2:NBTL, Start of Green	
Control Type: Pretimed	
Maximum v/c Ratio: 0.88	
Intersection Signal Delay: 25.2	Intersection LOS: C
Intersection Capacity Utilization 95.0%	ICU Level of Service F
Analysis Period (min) 15	



Lane Group	EBR	WBT	SBT
Act Effct Green (s)	19.0	19.0	50.5
Actuated g/C Ratio	0.24	0.24	0.63
v/c Ratio	0.25	0.09	0.59
Control Delay	4.5	14.7	3.0
Queue Delay	0.0	0.0	0.1
Total Delay	4.5	14.7	3.1
LOS	A	B	A
Approach Delay		14.7	3.1
Approach LOS		B	A

Intersection Summary	
Cycle Length: 80	
Actuated Cycle Length: 80	
Offset: 1 (1%), Referenced to phase 2:SBT, Start of Green	
Control Type: Pretimed	
Maximum v/c Ratio: 0.59	
Intersection Signal Delay: 3.6	Intersection LOS: A
Intersection Capacity Utilization 67.6%	ICU Level of Service C
Analysis Period (min) 15	

Lane Group	WBT	WBR	NBT
Act Effct Green (s)	19.0	19.0	50.0
Actuated g/C Ratio	0.24	0.24	0.62
v/c Ratio	0.07	0.25	0.34
Control Delay	24.4	8.5	1.7
Queue Delay	0.0	0.0	0.0
Total Delay	24.4	8.5	1.7
LOS	C	A	A
Approach Delay	12.4		1.7
Approach LOS	B		A

Intersection Summary	
Cycle Length: 80	
Actuated Cycle Length: 80	
Offset: 69 (86%), Referenced to phase 2:NBTL and 6:, Start of Green	
Control Type: Pretimed	
Maximum v/c Ratio: 0.34	
Intersection Signal Delay: 2.9	Intersection LOS: A
Intersection Capacity Utilization 41.9%	ICU Level of Service A
Analysis Period (min) 15	

Lane Group	SBL	SBR2	NEL2	NET	NER	SWL	SWR
Act Effct Green (s)	37.6	37.6	24.0	34.4	30.4	24.0	24.0
Actuated g/C Ratio	0.47	0.47	0.30	0.43	0.38	0.30	0.30
v/c Ratio	0.78	0.04	0.09	0.72	0.64	0.11	0.09
Control Delay	27.1	16.1	24.4	32.7	30.4	22.0	21.3
Queue Delay	0.2	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	27.3	16.1	24.4	32.7	30.4	22.0	21.3
LOS	C	B	C	C	C	C	C
Approach Delay	26.9			31.3			
Approach LOS	C			C			

Intersection Summary	
Cycle Length: 80	
Actuated Cycle Length: 80	
Offset: 64.4 (81%), Referenced to phase 6:SBL, Start of Green	
Control Type: Pretimed	
Maximum v/c Ratio: 0.78	
Intersection Signal Delay: 28.5	Intersection LOS: C
Intersection Capacity Utilization 82.2%	ICU Level of Service E
Analysis Period (min) 15	

Lane Group	EBT	NBT	SBT
Act Effct Green (s)	53.6	13.6	13.6
Actuated g/C Ratio	0.67	0.17	0.17
v/c Ratio	0.89	0.77	0.51
Control Delay	23.2	33.3	42.7
Queue Delay	0.0	0.0	0.0
Total Delay	23.2	33.3	42.7
LOS	C	C	D
Approach Delay	23.2	33.3	42.7
Approach LOS	C	C	D

Intersection Summary	
Cycle Length: 80	
Actuated Cycle Length: 80	
Offset: 35.2 (44%), Referenced to phase 2:EBTL, Start of Green	
Control Type: Pretimed	
Maximum v/c Ratio: 0.89	
Intersection Signal Delay: 25.6	Intersection LOS: C
Intersection Capacity Utilization 77.2%	ICU Level of Service D
Analysis Period (min) 15	

Lane Group	EBL	EBR	SEL	SET	NWT	NWR
Act Effct Green (s)	45.6	45.6	14.4	14.4	14.4	14.4
Actuated g/C Ratio	0.57	0.57	0.18	0.18	0.18	0.18
v/c Ratio	0.63	0.17	0.03	0.27	0.19	0.33
Control Delay	7.8	0.7	27.8	31.8	27.3	9.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	7.8	0.7	27.8	31.8	27.3	9.9
LOS	A	A	C	C	C	A
Approach Delay	6.7			31.5	16.8	
Approach LOS	A			C	B	

Intersection Summary	
Cycle Length: 80	
Actuated Cycle Length: 80	
Offset: 56 (70%), Referenced to phase 2:EBL, Start of Green	
Control Type: Pretimed	
Maximum v/c Ratio: 0.63	
Intersection Signal Delay: 9.5	Intersection LOS: A
Intersection Capacity Utilization 64.8%	ICU Level of Service C
Analysis Period (min) 15	

Lane Group	EBL	EBR	WBT	WBR	NBT	SBL2	SBT
Act Effct Green (s)	24.0	23.5	29.6	29.6	14.4	14.4	14.4
Actuated g/C Ratio	0.30	0.29	0.37	0.37	0.18	0.18	0.18
v/c Ratio	0.60	0.03	0.61	0.92	0.17	0.02	0.12
Control Delay	27.3	0.1	22.3	48.5	30.0	27.6	14.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	27.3	0.1	22.3	48.5	30.0	27.6	14.2
LOS	C	A	C	D	C	C	B
Approach Delay			37.7		30.0		16.0
Approach LOS			D		C		B

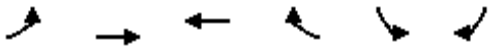
Intersection Summary	
Cycle Length: 80	
Actuated Cycle Length: 80	
Offset: 47 (59%), Referenced to phase 4:WBTL, Start of Green	
Control Type: Pretimed	
Maximum v/c Ratio: 0.92	
Intersection Signal Delay: 32.4	Intersection LOS: C
Intersection Capacity Utilization 62.6%	ICU Level of Service B
Analysis Period (min) 15	

Lane Group	WBT	WBR	SBL	SBR	SEL
Act Effct Green (s)	29.6	51.2	20.8	20.8	17.6
Actuated g/C Ratio	0.37	0.64	0.26	0.26	0.22
v/c Ratio	0.76	0.35	0.70	0.75	0.38
Control Delay	32.5	5.0	40.0	46.2	20.2
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	32.5	5.0	40.0	46.2	20.2
LOS	C	A	D	D	C
Approach Delay	22.9		42.9		20.2
Approach LOS	C		D		C

Intersection Summary	
Cycle Length: 80	
Actuated Cycle Length: 80	
Offset: 26 (33%), Referenced to phase 6:WBR and 2:SEL, Start of Green	
Control Type: Pretimed	
Maximum v/c Ratio: 0.76	
Intersection Signal Delay: 29.2	Intersection LOS: C
Intersection Capacity Utilization 61.7%	ICU Level of Service B
Analysis Period (min) 15	

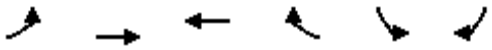
Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	NBR	SBL	SBT	SBR
Act Effct Green (s)	8.5	8.5	8.5	29.3	29.3	45.3	45.3	75.0	45.3	45.3	45.3
Actuated g/C Ratio	0.09	0.09	0.09	0.31	0.31	0.48	0.48	0.79	0.48	0.48	0.48
v/c Ratio	0.17	0.28	0.29	0.78	0.78	0.60	0.58	0.47	0.03	0.65	0.19
Control Delay	44.4	44.7	6.2	44.4	37.4	42.7	20.8	4.6	16.0	22.3	5.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	44.4	44.7	6.2	44.4	37.4	42.7	20.8	4.6	16.0	22.3	5.8
LOS	D	D	A	D	D	D	C	A	B	C	A
Approach Delay		31.9			39.7		16.8			20.4	
Approach LOS		C			D		B			C	

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 95.2	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.78	
Intersection Signal Delay: 24.8	Intersection LOS: C
Intersection Capacity Utilization 74.5%	ICU Level of Service D
Analysis Period (min) 15	



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Act Effct Green (s)	77.4	81.4	62.4	62.4	18.1	38.1
Actuated g/C Ratio	0.70	0.74	0.57	0.57	0.16	0.35
v/c Ratio	1.47	0.75	0.56	0.72	0.69	0.41
Control Delay	252.0	11.4	6.8	17.1	50.1	29.4
Queue Delay	0.0	0.0	1.3	51.1	0.0	0.0
Total Delay	252.0	11.4	8.1	68.2	50.1	29.4
LOS	F	B	A	E	D	C
Approach Delay		69.0	33.8		42.5	
Approach LOS		E	C		D	

Intersection Summary	
Cycle Length: 110	
Actuated Cycle Length: 110	
Offset: 0 (0%), Referenced to phase 1:EBWB, Start of Green	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 1.47	
Intersection Signal Delay: 52.4	Intersection LOS: D
Intersection Capacity Utilization 84.8%	ICU Level of Service E
Analysis Period (min) 15	



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Act Effct Green (s)	49.5	110.0	28.2	28.2	18.3	67.8
Actuated g/C Ratio	0.45	1.00	0.26	0.26	0.17	0.62
v/c Ratio	0.63	0.48	1.31	0.19	0.10	0.15
Control Delay	21.5	0.3	181.7	13.9	39.8	7.4
Queue Delay	0.0	0.0	0.4	0.0	0.0	0.0
Total Delay	21.5	0.3	182.1	13.9	39.8	7.5
LOS	C	A	F	B	D	A
Approach Delay		6.4	174.1		10.7	
Approach LOS		A	F		B	

Intersection Summary	
Cycle Length: 110	
Actuated Cycle Length: 110	
Offset: 0 (0%), Referenced to phase 2:WBT and 6:EBT, Start of Green	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 1.31	
Intersection Signal Delay: 74.6	Intersection LOS: E
Intersection Capacity Utilization 67.6%	ICU Level of Service C
Analysis Period (min) 15	

Lane Group	EBL	EBT	EBR	WBL	WBR	NBT	SBT
Act Effct Green (s)	10.9	10.9	10.9	10.9	10.9	13.0	13.0
Actuated g/C Ratio	0.33	0.33	0.33	0.33	0.33	0.39	0.39
v/c Ratio	0.05	0.20	0.24	0.29	0.36	0.51	0.03
Control Delay	8.6	9.6	3.6	11.2	3.8	4.9	7.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	8.6	9.6	3.6	11.2	3.8	4.9	7.1
LOS	A	A	A	B	A	A	A
Approach Delay		6.6				4.9	7.1
Approach LOS		A				A	A

Intersection Summary	
Cycle Length: 94	
Actuated Cycle Length: 33.2	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.51	
Intersection Signal Delay: 5.6	Intersection LOS: A
Intersection Capacity Utilization 54.7%	ICU Level of Service A
Analysis Period (min) 15	

Lane Group	SEL	SET	NWL	NWR	NET	SWL	SWT
Act Effct Green (s)	14.7	14.7	10.0	51.5	18.3	37.5	60.3
Actuated g/C Ratio	0.15	0.15	0.10	0.52	0.18	0.38	0.60
v/c Ratio	0.80	0.78	1.58	0.52	0.38	0.96	0.71
Control Delay	67.2	52.7	350.9	14.2	36.5	48.8	15.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	67.2	52.7	350.9	14.2	36.5	48.8	15.6
LOS	E	D	F	B	D	D	B
Approach Delay		57.5			36.5		27.6
Approach LOS		E			D		C

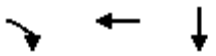
Intersection Summary	
Cycle Length: 100	
Actuated Cycle Length: 100	
Offset: 0 (0%), Referenced to phase 2:SWTL and 6:, Start of Green	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 1.58	
Intersection Signal Delay: 36.8	Intersection LOS: D
Intersection Capacity Utilization 75.7%	ICU Level of Service D
Analysis Period (min) 15	

Lane Group	EBT	EBR	WBT	SBT	SBR
Act Effct Green (s)	32.6	32.6	32.6	19.2	19.2
Actuated g/C Ratio	0.41	0.41	0.41	0.24	0.24
v/c Ratio	0.25	0.86	0.41	0.59	0.50
Control Delay	17.0	34.3	19.9	31.2	7.7
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	17.0	34.3	19.9	31.2	7.7
LOS	B	C	B	C	A
Approach Delay	31.1		19.9	22.1	
Approach LOS	C		B	C	

Intersection Summary	
Cycle Length: 80	
Actuated Cycle Length: 80	
Offset: 63.2 (79%), Referenced to phase 2:SBTL, Start of Green	
Control Type: Pretimed	
Maximum v/c Ratio: 0.86	
Intersection Signal Delay: 26.4	Intersection LOS: C
Intersection Capacity Utilization 83.4%	ICU Level of Service E
Analysis Period (min) 15	

Lane Group	EBL	EBT	WBT	WBR	NBT	NBR
Act Effct Green (s)	36.0	36.0	36.0	36.0	18.4	18.4
Actuated g/C Ratio	0.45	0.45	0.45	0.45	0.23	0.23
v/c Ratio	0.03	0.24	0.31	0.88	0.81	0.62
Control Delay	12.8	15.3	15.6	31.6	31.3	10.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	12.8	15.3	15.6	31.6	31.3	10.3
LOS	B	B	B	C	C	B
Approach Delay		15.1	28.5		22.9	
Approach LOS		B	C		C	

Intersection Summary	
Cycle Length: 80	
Actuated Cycle Length: 80	
Offset: 12.8 (16%), Referenced to phase 2:NBTL, Start of Green	
Control Type: Pretimed	
Maximum v/c Ratio: 0.88	
Intersection Signal Delay: 25.5	Intersection LOS: C
Intersection Capacity Utilization 95.0%	ICU Level of Service F
Analysis Period (min) 15	



Lane Group	EBR	WBT	SBT
Act Effct Green (s)	19.0	19.0	50.5
Actuated g/C Ratio	0.24	0.24	0.63
v/c Ratio	0.31	0.09	0.67
Control Delay	11.0	14.7	3.3
Queue Delay	0.6	0.0	0.2
Total Delay	11.6	14.7	3.5
LOS	B	B	A
Approach Delay		14.7	3.5
Approach LOS		B	A

Intersection Summary	
Cycle Length: 80	
Actuated Cycle Length: 80	
Offset: 1 (1%), Referenced to phase 2:SBT, Start of Green	
Control Type: Pretimed	
Maximum v/c Ratio: 0.67	
Intersection Signal Delay: 4.4	Intersection LOS: A
Intersection Capacity Utilization 71.9%	ICU Level of Service C
Analysis Period (min) 15	

Lane Group	WBT	WBR	NBT
Act Effct Green (s)	19.0	19.0	50.0
Actuated g/C Ratio	0.24	0.24	0.62
v/c Ratio	0.07	0.25	0.34
Control Delay	24.4	8.5	1.6
Queue Delay	0.0	0.0	0.0
Total Delay	24.4	8.5	1.6
LOS	C	A	A
Approach Delay	12.4		1.6
Approach LOS	B		A

Intersection Summary	
Cycle Length: 80	
Actuated Cycle Length: 80	
Offset: 69 (86%), Referenced to phase 2:NBTL and 6:, Start of Green	
Control Type: Pretimed	
Maximum v/c Ratio: 0.34	
Intersection Signal Delay: 2.9	Intersection LOS: A
Intersection Capacity Utilization 41.9%	ICU Level of Service A
Analysis Period (min) 15	

Lane Group	SBL	SBR2	NEL2	NET	NER	SWL	SWR
Act Effct Green (s)	37.6	37.6	24.0	34.4	30.4	24.0	24.0
Actuated g/C Ratio	0.47	0.47	0.30	0.43	0.38	0.30	0.30
v/c Ratio	0.92	0.04	0.09	0.84	0.76	0.12	0.09
Control Delay	34.8	16.2	22.0	37.6	32.8	22.2	21.3
Queue Delay	0.7	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	35.5	16.2	22.0	37.6	32.8	22.2	21.3
LOS	D	B	C	D	C	C	C
Approach Delay	35.0			34.8			
Approach LOS	D			C			

Intersection Summary	
Cycle Length: 80	
Actuated Cycle Length: 80	
Offset: 64.4 (81%), Referenced to phase 6:SBL, Start of Green	
Control Type: Pretimed	
Maximum v/c Ratio: 0.92	
Intersection Signal Delay: 34.6	Intersection LOS: C
Intersection Capacity Utilization 82.2%	ICU Level of Service E
Analysis Period (min) 15	

Lane Group	EBT	NBT	SBT
Act Effct Green (s)	53.6	13.6	13.6
Actuated g/C Ratio	0.67	0.17	0.17
v/c Ratio	1.13	0.88	0.51
Control Delay	85.7	51.0	42.7
Queue Delay	0.0	0.0	0.0
Total Delay	85.7	51.0	42.7
LOS	F	D	D
Approach Delay	85.7	51.0	42.7
Approach LOS	F	D	D

Intersection Summary	
Cycle Length: 80	
Actuated Cycle Length: 80	
Offset: 35.2 (44%), Referenced to phase 2:EBTL, Start of Green	
Control Type: Pretimed	
Maximum v/c Ratio: 1.13	
Intersection Signal Delay: 80.2	Intersection LOS: F
Intersection Capacity Utilization 82.2%	ICU Level of Service E
Analysis Period (min) 15	

Lane Group	EBL	EBR	SEL	SET	NWT	NWR
Act Effct Green (s)	45.6	45.6	14.4	14.4	14.4	14.4
Actuated g/C Ratio	0.57	0.57	0.18	0.18	0.18	0.18
v/c Ratio	0.63	0.17	0.03	0.27	0.19	0.33
Control Delay	7.0	0.5	27.8	31.8	27.2	9.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	7.0	0.5	27.8	31.8	27.2	9.8
LOS	A	A	C	C	C	A
Approach Delay	6.0			31.5	16.7	
Approach LOS	A			C	B	

Intersection Summary	
Cycle Length: 80	
Actuated Cycle Length: 80	
Offset: 56 (70%), Referenced to phase 2:EBL, Start of Green	
Control Type: Pretimed	
Maximum v/c Ratio: 0.63	
Intersection Signal Delay: 9.0	Intersection LOS: A
Intersection Capacity Utilization 64.8%	ICU Level of Service C
Analysis Period (min) 15	

Lane Group	EBL	EBR	WBT	WBR	NBT	SBL2	SBT
Act Effct Green (s)	24.0	23.5	29.6	29.6	14.4	14.4	14.4
Actuated g/C Ratio	0.30	0.29	0.37	0.37	0.18	0.18	0.18
v/c Ratio	0.72	0.03	0.61	0.92	0.17	0.02	0.12
Control Delay	30.6	0.1	21.9	47.4	30.0	27.6	14.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	30.6	0.1	21.9	47.4	30.0	27.6	14.2
LOS	C	A	C	D	C	C	B
Approach Delay			37.0		30.0		16.0
Approach LOS			D		C		B

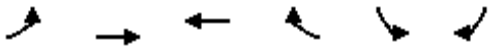
Intersection Summary	
Cycle Length: 80	
Actuated Cycle Length: 80	
Offset: 47 (59%), Referenced to phase 4:WBTL, Start of Green	
Control Type: Pretimed	
Maximum v/c Ratio: 0.92	
Intersection Signal Delay: 33.1	Intersection LOS: C
Intersection Capacity Utilization 65.8%	ICU Level of Service C
Analysis Period (min) 15	

Lane Group	WBT	WBR	SBL	SBR	SEL
Act Effct Green (s)	29.6	51.2	20.8	20.8	17.6
Actuated g/C Ratio	0.37	0.64	0.26	0.26	0.22
v/c Ratio	0.88	0.35	0.80	0.86	0.38
Control Delay	43.5	5.0	47.7	59.3	19.7
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	43.5	5.0	47.7	59.3	19.7
LOS	D	A	D	E	B
Approach Delay	31.3		53.2		19.7
Approach LOS	C		D		B

Intersection Summary	
Cycle Length: 80	
Actuated Cycle Length: 80	
Offset: 26 (33%), Referenced to phase 6:WBR and 2:SEL, Start of Green	
Control Type: Pretimed	
Maximum v/c Ratio: 0.88	
Intersection Signal Delay: 37.4	Intersection LOS: D
Intersection Capacity Utilization 65.6%	ICU Level of Service C
Analysis Period (min) 15	

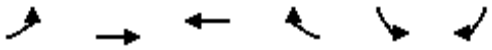
Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	NBR	SBL	SBT	SBR
Act Effct Green (s)	8.5	8.5	8.5	30.1	30.1	45.2	45.2	75.8	45.2	45.2	45.2
Actuated g/C Ratio	0.09	0.09	0.09	0.31	0.31	0.47	0.47	0.79	0.47	0.47	0.47
v/c Ratio	0.17	0.29	0.29	0.81	0.80	0.69	0.59	0.47	0.03	0.66	0.22
Control Delay	44.4	44.8	6.3	46.3	38.3	51.9	21.1	4.5	16.0	22.7	5.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	44.4	44.8	6.3	46.3	38.3	51.9	21.1	4.5	16.0	22.7	5.8
LOS	D	D	A	D	D	D	C	A	B	C	A
Approach Delay		32.0			41.0		17.7			20.5	
Approach LOS		C			D		B			C	

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 96	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.81	
Intersection Signal Delay: 25.7	Intersection LOS: C
Intersection Capacity Utilization 75.4%	ICU Level of Service D
Analysis Period (min) 15	



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Act Effct Green (s)	77.4	81.4	62.4	62.4	18.1	38.1
Actuated g/C Ratio	0.70	0.74	0.57	0.57	0.16	0.35
v/c Ratio	1.47	0.79	0.56	0.72	0.69	0.41
Control Delay	252.0	12.6	6.8	17.1	50.1	29.4
Queue Delay	0.0	0.0	1.3	51.1	0.0	0.0
Total Delay	252.0	12.6	8.1	68.2	50.1	29.4
LOS	F	B	A	E	D	C
Approach Delay		67.7	33.8		42.5	
Approach LOS		E	C		D	

Intersection Summary	
Cycle Length: 110	
Actuated Cycle Length: 110	
Offset: 0 (0%), Referenced to phase 1:EBWB, Start of Green	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 1.47	
Intersection Signal Delay: 52.1	Intersection LOS: D
Intersection Capacity Utilization 84.8%	ICU Level of Service E
Analysis Period (min) 15	



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Act Effct Green (s)	49.5	110.0	28.2	28.2	18.3	67.8
Actuated g/C Ratio	0.45	1.00	0.26	0.26	0.17	0.62
v/c Ratio	0.72	0.48	1.31	0.19	0.10	0.15
Control Delay	24.0	0.3	181.7	13.9	39.8	7.4
Queue Delay	0.0	0.0	0.4	0.0	0.0	0.0
Total Delay	24.0	0.3	182.1	13.9	39.8	7.5
LOS	C	A	F	B	D	A
Approach Delay		7.8	174.1		10.7	
Approach LOS		A	F		B	

Intersection Summary	
Cycle Length: 110	
Actuated Cycle Length: 110	
Offset: 0 (0%), Referenced to phase 2:WBT and 6:EBT, Start of Green	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 1.31	
Intersection Signal Delay: 73.9	Intersection LOS: E
Intersection Capacity Utilization 70.2%	ICU Level of Service C
Analysis Period (min) 15	

Lane Group	EBL	EBT	EBR	WBL	WBR	NBT	SBT
Act Effct Green (s)	10.9	10.9	10.9	10.9	10.9	13.9	13.9
Actuated g/C Ratio	0.32	0.32	0.32	0.32	0.32	0.41	0.41
v/c Ratio	0.05	0.21	0.24	0.30	0.36	0.55	0.03
Control Delay	9.4	10.4	3.8	12.2	4.0	4.6	6.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	9.4	10.4	3.8	12.2	4.0	4.6	6.7
LOS	A	B	A	B	A	A	A
Approach Delay		7.1				4.6	6.7
Approach LOS		A				A	A

Intersection Summary	
Cycle Length: 94	
Actuated Cycle Length: 34.2	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.55	
Intersection Signal Delay: 5.6	Intersection LOS: A
Intersection Capacity Utilization 57.7%	ICU Level of Service B
Analysis Period (min) 15	

Lane Group	SEL	SET	NWL	NWR	NET	SWL	SWT
Act Effct Green (s)	14.7	14.7	10.0	51.5	18.3	37.5	60.3
Actuated g/C Ratio	0.15	0.15	0.10	0.52	0.18	0.38	0.60
v/c Ratio	0.80	0.78	1.58	0.52	0.38	0.96	0.71
Control Delay	67.2	52.7	350.9	14.2	36.5	48.8	15.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	67.2	52.7	350.9	14.2	36.5	48.8	15.6
LOS	E	D	F	B	D	D	B
Approach Delay		57.5			36.5		27.6
Approach LOS		E			D		C

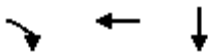
Intersection Summary	
Cycle Length: 100	
Actuated Cycle Length: 100	
Offset: 0 (0%), Referenced to phase 2:SWTL and 6:, Start of Green	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 1.58	
Intersection Signal Delay: 36.8	Intersection LOS: D
Intersection Capacity Utilization 75.7%	ICU Level of Service D
Analysis Period (min) 15	

Lane Group	EBT	EBR	WBT	SBT	SBR
Act Effct Green (s)	32.6	32.6	32.6	19.2	19.2
Actuated g/C Ratio	0.41	0.41	0.41	0.24	0.24
v/c Ratio	0.25	0.92	0.41	0.63	0.50
Control Delay	17.0	41.5	19.9	32.2	7.7
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	17.0	41.5	19.9	32.2	7.7
LOS	B	D	B	C	A
Approach Delay	37.3		19.9	23.1	
Approach LOS	D		B	C	

Intersection Summary	
Cycle Length: 80	
Actuated Cycle Length: 80	
Offset: 63.2 (79%), Referenced to phase 2:SBTL, Start of Green	
Control Type: Pretimed	
Maximum v/c Ratio: 0.92	
Intersection Signal Delay: 30.1	Intersection LOS: C
Intersection Capacity Utilization 85.3%	ICU Level of Service E
Analysis Period (min) 15	

Lane Group	EBL	EBT	WBT	WBR	NBT	NBR
Act Effct Green (s)	36.0	36.0	36.0	36.0	18.4	18.4
Actuated g/C Ratio	0.45	0.45	0.45	0.45	0.23	0.23
v/c Ratio	0.03	0.24	0.31	0.88	0.81	0.62
Control Delay	12.8	15.3	15.6	31.6	31.4	10.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	12.8	15.3	15.6	31.6	31.4	10.2
LOS	B	B	B	C	C	B
Approach Delay		15.1	28.5		22.9	
Approach LOS		B	C		C	

Intersection Summary	
Cycle Length: 80	
Actuated Cycle Length: 80	
Offset: 12.8 (16%), Referenced to phase 2:NBTL, Start of Green	
Control Type: Pretimed	
Maximum v/c Ratio: 0.88	
Intersection Signal Delay: 25.6	Intersection LOS: C
Intersection Capacity Utilization 95.0%	ICU Level of Service F
Analysis Period (min) 15	



Lane Group	EBR	WBT	SBT
Act Effct Green (s)	19.0	19.0	50.5
Actuated g/C Ratio	0.24	0.24	0.63
v/c Ratio	0.34	0.09	0.72
Control Delay	14.2	14.7	3.4
Queue Delay	0.7	0.0	0.4
Total Delay	14.9	14.7	3.8
LOS	B	B	A
Approach Delay		14.7	3.8
Approach LOS		B	A

Intersection Summary	
Cycle Length: 80	
Actuated Cycle Length: 80	
Offset: 1 (1%), Referenced to phase 2:SBT, Start of Green	
Control Type: Pretimed	
Maximum v/c Ratio: 0.72	
Intersection Signal Delay: 4.9	Intersection LOS: A
Intersection Capacity Utilization 74.2%	ICU Level of Service D
Analysis Period (min) 15	

Lane Group	WBT	WBR	NBT
Act Effct Green (s)	19.0	19.0	50.0
Actuated g/C Ratio	0.24	0.24	0.62
v/c Ratio	0.07	0.25	0.34
Control Delay	24.4	8.5	1.6
Queue Delay	0.0	0.0	0.0
Total Delay	24.4	8.5	1.6
LOS	C	A	A
Approach Delay	12.4		1.6
Approach LOS	B		A

Intersection Summary	
Cycle Length: 80	
Actuated Cycle Length: 80	
Offset: 69 (86%), Referenced to phase 2:NBTL and 6:, Start of Green	
Control Type: Pretimed	
Maximum v/c Ratio: 0.34	
Intersection Signal Delay: 2.9	Intersection LOS: A
Intersection Capacity Utilization 41.9%	ICU Level of Service A
Analysis Period (min) 15	

Lane Group	SBL	SBR2	NEL2	NET	NER	SWL	SWR
Act Effct Green (s)	37.6	37.6	24.0	34.4	30.4	24.0	24.0
Actuated g/C Ratio	0.47	0.47	0.30	0.43	0.38	0.30	0.30
v/c Ratio	0.99	0.04	0.09	0.90	0.82	0.13	0.09
Control Delay	45.7	16.5	21.2	41.7	34.8	22.4	21.3
Queue Delay	2.3	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	48.1	16.5	21.2	41.7	34.8	22.4	21.3
LOS	D	B	C	D	C	C	C
Approach Delay	47.3			37.8			
Approach LOS	D			D			

Intersection Summary	
Cycle Length: 80	
Actuated Cycle Length: 80	
Offset: 64.4 (81%), Referenced to phase 6:SBL, Start of Green	
Control Type: Pretimed	
Maximum v/c Ratio: 0.99	
Intersection Signal Delay: 42.9	Intersection LOS: D
Intersection Capacity Utilization 82.2%	ICU Level of Service E
Analysis Period (min) 15	

Lane Group	EBT	NBT	SBT
Act Effct Green (s)	53.6	13.6	13.6
Actuated g/C Ratio	0.67	0.17	0.17
v/c Ratio	1.18	0.90	0.51
Control Delay	106.7	53.4	42.7
Queue Delay	0.0	0.0	0.0
Total Delay	106.7	53.4	42.7
LOS	F	D	D
Approach Delay	106.7	53.4	42.7
Approach LOS	F	D	D

Intersection Summary	
Cycle Length: 80	
Actuated Cycle Length: 80	
Offset: 35.2 (44%), Referenced to phase 2:EBTL, Start of Green	
Control Type: Pretimed	
Maximum v/c Ratio: 1.18	
Intersection Signal Delay: 98.6	Intersection LOS: F
Intersection Capacity Utilization 84.2%	ICU Level of Service E
Analysis Period (min) 15	

Lane Group	EBL	EBR	SEL	SET	NWT	NWR
Act Effct Green (s)	45.6	45.6	14.4	14.4	14.4	14.4
Actuated g/C Ratio	0.57	0.57	0.18	0.18	0.18	0.18
v/c Ratio	0.63	0.17	0.03	0.27	0.19	0.33
Control Delay	6.9	0.5	27.8	31.8	27.2	9.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	6.9	0.5	27.8	31.8	27.2	9.8
LOS	A	A	C	C	C	A
Approach Delay	5.9			31.5	16.7	
Approach LOS	A			C	B	

Intersection Summary	
Cycle Length: 80	
Actuated Cycle Length: 80	
Offset: 56 (70%), Referenced to phase 2:EBL, Start of Green	
Control Type: Pretimed	
Maximum v/c Ratio: 0.63	
Intersection Signal Delay: 8.9	Intersection LOS: A
Intersection Capacity Utilization 64.8%	ICU Level of Service C
Analysis Period (min) 15	

Lane Group	EBL	EBR	WBT	WBR	NBT	SBL2	SBT
Act Effct Green (s)	24.0	23.5	29.6	29.6	14.4	14.4	14.4
Actuated g/C Ratio	0.30	0.29	0.37	0.37	0.18	0.18	0.18
v/c Ratio	0.79	0.03	0.61	0.92	0.17	0.02	0.12
Control Delay	33.4	0.1	21.8	47.1	30.0	27.6	14.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	33.4	0.1	21.8	47.1	30.0	27.6	14.2
LOS	C	A	C	D	C	C	B
Approach Delay			36.7		30.0		16.0
Approach LOS			D		C		B

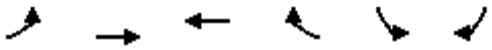
Intersection Summary	
Cycle Length: 80	
Actuated Cycle Length: 80	
Offset: 47 (59%), Referenced to phase 4:WBTL, Start of Green	
Control Type: Pretimed	
Maximum v/c Ratio: 0.92	
Intersection Signal Delay: 34.2	Intersection LOS: C
Intersection Capacity Utilization 67.4%	ICU Level of Service C
Analysis Period (min) 15	

Lane Group	WBT	WBR	SBL	SBR	SEL
Act Effct Green (s)	29.6	51.2	20.8	20.8	17.6
Actuated g/C Ratio	0.37	0.64	0.26	0.26	0.22
v/c Ratio	0.92	0.35	0.83	0.90	0.38
Control Delay	49.1	5.0	50.5	65.7	19.8
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	49.1	5.0	50.5	65.7	19.8
LOS	D	A	D	E	B
Approach Delay	35.6		57.7		19.8
Approach LOS	D		E		B

Intersection Summary	
Cycle Length: 80	
Actuated Cycle Length: 80	
Offset: 26 (33%), Referenced to phase 6:WBR and 2:SEL, Start of Green	
Control Type: Pretimed	
Maximum v/c Ratio: 0.92	
Intersection Signal Delay: 41.3	Intersection LOS: D
Intersection Capacity Utilization 66.8%	ICU Level of Service C
Analysis Period (min) 15	

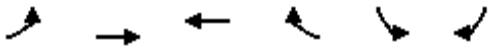
Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	NBR	SBL	SBT	SBR
Act Effct Green (s)	8.5	8.5	8.5	30.1	30.1	45.2	45.2	75.8	45.2	45.2	45.2
Actuated g/C Ratio	0.09	0.09	0.09	0.31	0.31	0.47	0.47	0.79	0.47	0.47	0.47
v/c Ratio	0.17	0.29	0.29	0.81	0.81	0.69	0.59	0.47	0.03	0.66	0.22
Control Delay	44.4	44.8	6.3	46.3	38.7	52.7	21.1	4.5	16.0	22.7	5.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	44.4	44.8	6.3	46.3	38.7	52.7	21.1	4.5	16.0	22.7	5.7
LOS	D	D	A	D	D	D	C	A	B	C	A
Approach Delay		32.0			41.2		17.8			20.5	
Approach LOS		C			D		B			C	

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 96	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.81	
Intersection Signal Delay: 25.8	Intersection LOS: C
Intersection Capacity Utilization 75.6%	ICU Level of Service D
Analysis Period (min) 15	



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Act Effct Green (s)	77.4	81.4	62.4	62.4	18.1	38.1
Actuated g/C Ratio	0.70	0.74	0.57	0.57	0.16	0.35
v/c Ratio	1.47	0.80	0.56	0.72	0.69	0.41
Control Delay	252.0	13.0	6.8	17.1	50.1	29.4
Queue Delay	0.0	0.0	1.3	51.1	0.0	0.0
Total Delay	252.0	13.0	8.1	68.2	50.1	29.4
LOS	F	B	A	E	D	C
Approach Delay		67.4	33.8		42.5	
Approach LOS		E	C		D	

Intersection Summary	
Cycle Length: 110	
Actuated Cycle Length: 110	
Offset: 0 (0%), Referenced to phase 1:EBWB, Start of Green	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 1.47	
Intersection Signal Delay: 52.1	Intersection LOS: D
Intersection Capacity Utilization 84.8%	ICU Level of Service E
Analysis Period (min) 15	



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Act Effct Green (s)	49.5	110.0	28.2	28.2	18.3	67.8
Actuated g/C Ratio	0.45	1.00	0.26	0.26	0.17	0.62
v/c Ratio	0.75	0.48	1.31	0.19	0.10	0.15
Control Delay	24.8	0.3	181.7	13.9	39.8	7.4
Queue Delay	0.0	0.0	0.4	0.0	0.0	0.0
Total Delay	24.8	0.3	182.1	13.9	39.8	7.5
LOS	C	A	F	B	D	A
Approach Delay		8.2	174.1		10.7	
Approach LOS		A	F		B	

Intersection Summary	
Cycle Length: 110	
Actuated Cycle Length: 110	
Offset: 0 (0%), Referenced to phase 2:WBT and 6:EBT, Start of Green	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 1.31	
Intersection Signal Delay: 73.7	Intersection LOS: E
Intersection Capacity Utilization 70.9%	ICU Level of Service C
Analysis Period (min) 15	

Lane Group	EBL	EBT	EBR	WBL	WBR	NBT	SBT
Act Effct Green (s)	10.7	10.7	10.7	10.7	10.7	14.2	14.2
Actuated g/C Ratio	0.31	0.31	0.31	0.31	0.31	0.41	0.41
v/c Ratio	0.05	0.21	0.25	0.30	0.37	0.56	0.03
Control Delay	9.8	10.8	4.0	12.6	4.2	4.4	6.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	9.8	10.8	4.0	12.6	4.2	4.4	6.5
LOS	A	B	A	B	A	A	A
Approach Delay		7.4				4.4	6.5
Approach LOS		A				A	A

Intersection Summary	
Cycle Length: 94	
Actuated Cycle Length: 34.3	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.56	
Intersection Signal Delay: 5.6	Intersection LOS: A
Intersection Capacity Utilization 58.5%	ICU Level of Service B
Analysis Period (min) 15	

Lane Group	SEL	SET	NWL	NWR	NET	SWL	SWT
Act Effct Green (s)	14.7	14.7	10.0	51.5	18.3	37.5	60.3
Actuated g/C Ratio	0.15	0.15	0.10	0.52	0.18	0.38	0.60
v/c Ratio	0.80	0.78	1.58	0.52	0.38	0.96	0.71
Control Delay	67.2	52.7	350.9	14.2	36.5	48.8	15.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	67.2	52.7	350.9	14.2	36.5	48.8	15.6
LOS	E	D	F	B	D	D	B
Approach Delay		57.5			36.5		27.6
Approach LOS		E			D		C

Intersection Summary	
Cycle Length: 100	
Actuated Cycle Length: 100	
Offset: 0 (0%), Referenced to phase 2:SWTL and 6:, Start of Green	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 1.58	
Intersection Signal Delay: 36.8	Intersection LOS: D
Intersection Capacity Utilization 75.7%	ICU Level of Service D
Analysis Period (min) 15	

Lane Group	EBT	EBR	WBT	SBT	SBR
Act Effct Green (s)	26.4	26.4	26.4	22.4	22.4
Actuated g/C Ratio	0.33	0.33	0.33	0.28	0.28
v/c Ratio	0.36	0.88	0.46	0.57	0.67
Control Delay	23.0	42.1	25.7	28.2	8.0
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	23.0	42.1	25.7	28.2	8.0
LOS	C	D	C	C	A
Approach Delay	37.3		25.7	17.8	
Approach LOS	D		C	B	

Intersection Summary	
Cycle Length: 80	
Actuated Cycle Length: 80	
Offset: 39.2 (49%), Referenced to phase 2:SBTL, Start of Green	
Control Type: Pretimed	
Maximum v/c Ratio: 0.88	
Intersection Signal Delay: 26.7	Intersection LOS: C
Intersection Capacity Utilization 75.5%	ICU Level of Service D
Analysis Period (min) 15	

Lane Group	EBL	EBT	WBT	WBR	NBT	NBR
Act Effct Green (s)	23.2	23.2	23.2	23.2	31.2	31.2
Actuated g/C Ratio	0.29	0.29	0.29	0.29	0.39	0.39
v/c Ratio	0.05	0.91	0.30	0.80	0.69	1.57
Control Delay	21.4	64.6	24.3	37.0	19.4	282.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	21.4	64.6	24.3	37.0	19.4	282.7
LOS	C	E	C	D	B	F
Approach Delay		62.9	34.4		157.1	
Approach LOS		E	C		F	

Intersection Summary	
Cycle Length: 80	
Actuated Cycle Length: 80	
Offset: 35.2 (44%), Referenced to phase 2:NBTL, Start of Green	
Control Type: Pretimed	
Maximum v/c Ratio: 1.57	
Intersection Signal Delay: 110.8	Intersection LOS: F
Intersection Capacity Utilization 80.1%	ICU Level of Service D
Analysis Period (min) 15	

Lane Group	SBL	SBR2	NEL2	NET	NER	SWL	SWR
Act Effct Green (s)	43.2	43.2	28.8	28.8	28.8	18.4	18.4
Actuated g/C Ratio	0.54	0.54	0.36	0.36	0.36	0.23	0.23
v/c Ratio	0.77	0.19	0.01	0.57	0.44	0.14	0.24
Control Delay	10.0	4.5	32.2	43.0	38.9	26.6	28.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	10.0	4.5	32.2	43.0	38.9	26.6	28.3
LOS	B	A	C	D	D	C	C
Approach Delay	9.4			41.0			
Approach LOS	A			D			

Intersection Summary	
Cycle Length: 80	
Actuated Cycle Length: 80	
Offset: 67.2 (84%), Referenced to phase 6:SBL, Start of Green	
Control Type: Pretimed	
Maximum v/c Ratio: 0.77	
Intersection Signal Delay: 18.0	Intersection LOS: B
Intersection Capacity Utilization 77.5%	ICU Level of Service D
Analysis Period (min) 15	

Lane Group	EBT	NBT	SBT
Act Effct Green (s)	45.6	21.6	21.6
Actuated g/C Ratio	0.57	0.27	0.27
v/c Ratio	0.95	0.29	0.29
Control Delay	26.8	9.1	26.7
Queue Delay	0.0	0.0	0.0
Total Delay	26.8	9.1	26.7
LOS	C	A	C
Approach Delay	26.8	9.1	26.7
Approach LOS	C	A	C

Intersection Summary	
Cycle Length: 80	
Actuated Cycle Length: 80	
Offset: 7.2 (9%), Referenced to phase 2:EBTL, Start of Green	
Control Type: Pretimed	
Maximum v/c Ratio: 0.95	
Intersection Signal Delay: 25.9	Intersection LOS: C
Intersection Capacity Utilization 60.6%	ICU Level of Service B
Analysis Period (min) 15	

Lane Group	EBL	SEL	SET	NWT	NWR
Act Effct Green (s)	46.4	14.4	14.4	14.4	14.4
Actuated g/C Ratio	0.58	0.18	0.18	0.18	0.18
v/c Ratio	1.11	0.17	0.57	0.19	0.23
Control Delay	68.3	30.9	40.2	30.4	8.3
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	68.3	30.9	40.2	30.4	8.3
LOS	E	C	D	C	A
Approach Delay	68.3		38.7	19.3	
Approach LOS	E		D	B	

Intersection Summary	
Cycle Length: 80	
Actuated Cycle Length: 80	
Offset: 14.4 (18%), Referenced to phase 2:EBL, Start of Green	
Control Type: Pretimed	
Maximum v/c Ratio: 1.11	
Intersection Signal Delay: 63.2	Intersection LOS: E
Intersection Capacity Utilization 64.1%	ICU Level of Service C
Analysis Period (min) 15	

Lane Group	EBL	EBR	WBT	WBR	NBT	SBL2	SBT
Act Effct Green (s)	17.6	17.6	36.0	36.0	14.4	14.4	14.4
Actuated g/C Ratio	0.22	0.22	0.45	0.45	0.18	0.18	0.18
v/c Ratio	0.47	0.09	1.03	0.79	0.15	0.05	0.09
Control Delay	30.1	0.6	73.1	33.3	29.7	28.1	0.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	30.1	0.6	73.1	33.3	29.7	28.1	0.3
LOS	C	A	E	C	C	C	A
Approach Delay			56.3		29.7		5.0
Approach LOS			E		C		A

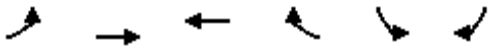
Intersection Summary	
Cycle Length: 80	
Actuated Cycle Length: 80	
Offset: 16 (20%), Referenced to phase 4:WBTL, Start of Green	
Control Type: Pretimed	
Maximum v/c Ratio: 1.03	
Intersection Signal Delay: 46.8	Intersection LOS: D
Intersection Capacity Utilization 75.4%	ICU Level of Service D
Analysis Period (min) 15	

Lane Group	WBT	WBR	SBL	SBR	SEL
Act Effct Green (s)	17.6	51.2	20.8	20.8	29.6
Actuated g/C Ratio	0.22	0.64	0.26	0.26	0.37
v/c Ratio	0.69	0.20	0.66	0.50	0.67
Control Delay	40.7	4.5	36.7	32.6	17.0
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	40.7	4.5	36.7	32.6	17.0
LOS	D	A	D	C	B
Approach Delay	27.4		35.2		17.0
Approach LOS	C		D		B

Intersection Summary	
Cycle Length: 80	
Actuated Cycle Length: 80	
Offset: 55 (69%), Referenced to phase 6:WBR and 2:SEL, Start of Green	
Control Type: Pretimed	
Maximum v/c Ratio: 0.69	
Intersection Signal Delay: 25.0	Intersection LOS: C
Intersection Capacity Utilization 57.1%	ICU Level of Service B
Analysis Period (min) 15	

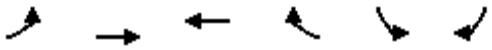
Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	NBR	SBL	SBT	SBR
Act Effct Green (s)	16.9	16.9	16.9	30.1	30.1	44.9	44.9	75.4	44.9	44.9	44.9
Actuated g/C Ratio	0.16	0.16	0.16	0.28	0.28	0.42	0.42	0.71	0.42	0.42	0.42
v/c Ratio	0.30	0.63	0.54	0.81	0.68	0.40	0.83	0.91	0.40	0.66	0.08
Control Delay	42.4	47.8	22.6	52.3	39.0	34.7	34.6	29.4	45.0	28.2	5.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	42.4	47.8	22.6	52.3	39.0	34.7	34.6	29.4	45.0	28.2	5.3
LOS	D	D	C	D	D	C	C	C	D	C	A
Approach Delay		40.7			43.9		32.5			27.5	
Approach LOS		D			D		C			C	

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 106.9	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.91	
Intersection Signal Delay: 34.7	Intersection LOS: C
Intersection Capacity Utilization 94.1%	ICU Level of Service F
Analysis Period (min) 15	



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Act Effct Green (s)	72.5	72.0	55.0	55.0	27.5	45.5
Actuated g/C Ratio	0.66	0.65	0.50	0.50	0.25	0.41
v/c Ratio	0.83	0.67	1.21	0.57	1.02	0.56
Control Delay	63.7	13.5	118.6	1.2	76.6	28.8
Queue Delay	0.0	0.0	0.4	1.0	0.0	0.0
Total Delay	63.7	13.5	119.0	2.2	76.6	28.8
LOS	E	B	F	A	E	C
Approach Delay		19.9	94.7		62.5	
Approach LOS		B	F		E	

Intersection Summary	
Cycle Length: 110	
Actuated Cycle Length: 110	
Offset: 0 (0%), Referenced to phase 1:WBT, Start of Green	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 1.21	
Intersection Signal Delay: 64.5	Intersection LOS: E
Intersection Capacity Utilization 98.2%	ICU Level of Service F
Analysis Period (min) 15	



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Act Effct Green (s)	25.5	110.0	41.0	41.0	29.5	55.0
Actuated g/C Ratio	0.23	1.00	0.37	0.37	0.27	0.50
v/c Ratio	0.35	0.60	0.98	0.18	0.41	0.68
Control Delay	34.3	0.5	51.1	8.2	36.5	20.4
Queue Delay	0.0	0.0	41.7	0.0	0.0	0.0
Total Delay	34.3	0.5	92.7	8.2	36.5	20.4
LOS	C	A	F	A	D	C
Approach Delay		4.4	87.9		23.4	
Approach LOS		A	F		C	

Intersection Summary	
Cycle Length: 110	
Actuated Cycle Length: 110	
Offset: 11 (10%), Referenced to phase 2:WBT and 6:EBT, Start of Green	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.98	
Intersection Signal Delay: 38.3	Intersection LOS: D
Intersection Capacity Utilization 73.2%	ICU Level of Service D
Analysis Period (min) 15	

Lane Group	EBL	EBT	EBR	WBL	WBR	NBT	SBT
Act Effct Green (s)	29.4	29.4	29.4	29.4	29.4	13.3	13.3
Actuated g/C Ratio	0.56	0.56	0.56	0.56	0.56	0.25	0.25
v/c Ratio	0.06	0.19	0.37	0.72	0.24	0.46	0.28
Control Delay	5.4	6.1	2.0	16.4	1.7	13.7	18.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	5.4	6.1	2.0	16.4	1.7	13.7	18.8
LOS	A	A	A	B	A	B	B
Approach Delay		3.6				13.7	18.8
Approach LOS		A				B	B

Intersection Summary	
Cycle Length: 84	
Actuated Cycle Length: 52.2	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.72	
Intersection Signal Delay: 10.3	Intersection LOS: B
Intersection Capacity Utilization 64.0%	ICU Level of Service C
Analysis Period (min) 15	

Lane Group	SEL	SET	NWL	NWR	NET	SWL	SWT
Act Effct Green (s)	20.0	20.0	12.0	33.5	30.5	17.5	52.5
Actuated g/C Ratio	0.20	0.20	0.12	0.34	0.30	0.18	0.52
v/c Ratio	1.10	1.05dl	0.56	1.07	1.05	1.18	0.35
Control Delay	119.4	48.9	52.9	81.6	72.0	135.9	14.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	119.4	48.9	52.9	81.6	72.0	135.9	14.3
LOS	F	D	D	F	E	F	B
Approach Delay		77.3			72.0		66.9
Approach LOS		E			E		E

Intersection Summary	
Cycle Length: 100	
Actuated Cycle Length: 100	
Offset: 0 (0%), Referenced to phase 2:SWTL and 6:, Start of Green	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 1.18	
Intersection Signal Delay: 72.8	Intersection LOS: E
Intersection Capacity Utilization 92.1%	ICU Level of Service F
Analysis Period (min) 15	

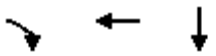
dl Defacto Left Lane. Recode with 1 though lane as a left lane.

Lane Group	EBT	EBR	WBT	SBT	SBR
Act Effct Green (s)	26.4	26.4	26.4	22.4	22.4
Actuated g/C Ratio	0.33	0.33	0.33	0.28	0.28
v/c Ratio	0.36	0.88	0.46	0.57	0.67
Control Delay	23.0	42.1	25.7	28.2	8.0
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	23.0	42.1	25.7	28.2	8.0
LOS	C	D	C	C	A
Approach Delay	37.3		25.7	17.8	
Approach LOS	D		C	B	

Intersection Summary	
Cycle Length: 80	
Actuated Cycle Length: 80	
Offset: 39.2 (49%), Referenced to phase 2:SBTL, Start of Green	
Control Type: Pretimed	
Maximum v/c Ratio: 0.88	
Intersection Signal Delay: 26.7	Intersection LOS: C
Intersection Capacity Utilization 75.5%	ICU Level of Service D
Analysis Period (min) 15	

Lane Group	EBL	EBT	WBT	WBR	NBT	NBR
Act Effct Green (s)	23.2	23.2	23.2	23.2	31.2	31.2
Actuated g/C Ratio	0.29	0.29	0.29	0.29	0.39	0.39
v/c Ratio	0.05	0.91	0.30	0.80	0.74	1.69
Control Delay	21.4	64.6	24.3	37.0	21.5	337.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	21.4	64.6	24.3	37.0	21.5	337.8
LOS	C	E	C	D	C	F
Approach Delay		62.9	34.4		187.3	
Approach LOS		E	C		F	

Intersection Summary	
Cycle Length: 80	
Actuated Cycle Length: 80	
Offset: 35.2 (44%), Referenced to phase 2:NBTL, Start of Green	
Control Type: Pretimed	
Maximum v/c Ratio: 1.69	
Intersection Signal Delay: 131.2	Intersection LOS: F
Intersection Capacity Utilization 81.8%	ICU Level of Service D
Analysis Period (min) 15	



Lane Group	EBR	WBT	SBT
Act Effct Green (s)	21.0	21.0	50.5
Actuated g/C Ratio	0.26	0.26	0.63
v/c Ratio	0.46	0.08	0.61
Control Delay	12.6	13.7	2.5
Queue Delay	1.9	0.0	0.1
Total Delay	14.5	13.7	2.7
LOS	B	B	A
Approach Delay		13.7	2.7
Approach LOS		B	A

Intersection Summary	
Cycle Length: 80	
Actuated Cycle Length: 80	
Offset: 50 (63%), Referenced to phase 2:SBT and 6:, Start of Green	
Control Type: Pretimed	
Maximum v/c Ratio: 0.61	
Intersection Signal Delay: 4.6	Intersection LOS: A
Intersection Capacity Utilization 68.1%	ICU Level of Service C
Analysis Period (min) 15	

Lane Group	WBT	WBR	NBT
Act Effct Green (s)	20.0	20.0	49.0
Actuated g/C Ratio	0.25	0.25	0.61
v/c Ratio	0.03	0.26	0.61
Control Delay	23.0	16.4	1.2
Queue Delay	0.0	0.0	0.7
Total Delay	23.0	16.4	1.9
LOS	C	B	A
Approach Delay	17.2		1.9
Approach LOS	B		A

Intersection Summary	
Cycle Length: 80	
Actuated Cycle Length: 80	
Offset: 23 (29%), Referenced to phase 2:NBTL and 6:, Start of Green	
Control Type: Pretimed	
Maximum v/c Ratio: 0.61	
Intersection Signal Delay: 2.8	Intersection LOS: A
Intersection Capacity Utilization 54.5%	ICU Level of Service A
Analysis Period (min) 15	

Lane Group	SBL	SBR2	NEL2	NET	NER	SWL	SWR
Act Effct Green (s)	43.2	43.2	18.4	18.4	28.8	18.4	18.4
Actuated g/C Ratio	0.54	0.54	0.23	0.23	0.36	0.23	0.23
v/c Ratio	0.77	0.19	0.02	0.89	0.44	0.18	0.24
Control Delay	25.9	14.4	13.0	55.4	12.6	28.6	28.3
Queue Delay	7.3	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	33.3	14.4	13.0	55.4	12.6	28.6	28.3
LOS	C	B	B	E	B	C	C
Approach Delay	31.1			35.1			
Approach LOS	C			D			

Intersection Summary	
Cycle Length: 80	
Actuated Cycle Length: 80	
Offset: 19.8 (25%), Referenced to phase 6:SBL, Start of Green	
Control Type: Pretimed	
Maximum v/c Ratio: 0.89	
Intersection Signal Delay: 32.0	Intersection LOS: C
Intersection Capacity Utilization 77.5%	ICU Level of Service D
Analysis Period (min) 15	

Lane Group	EBT	NBT	SBT
Act Effct Green (s)	45.6	21.6	21.6
Actuated g/C Ratio	0.57	0.27	0.27
v/c Ratio	0.95	0.29	0.29
Control Delay	29.8	10.1	26.7
Queue Delay	0.0	0.0	0.0
Total Delay	29.8	10.1	26.7
LOS	C	B	C
Approach Delay	29.8	10.1	26.7
Approach LOS	C	B	C

Intersection Summary	
Cycle Length: 80	
Actuated Cycle Length: 80	
Offset: 7.2 (9%), Referenced to phase 2:EBTL, Start of Green	
Control Type: Pretimed	
Maximum v/c Ratio: 0.95	
Intersection Signal Delay: 28.7	Intersection LOS: C
Intersection Capacity Utilization 60.6%	ICU Level of Service B
Analysis Period (min) 15	

Lane Group	EBL	SEL	SET	NWT	NWR
Act Effct Green (s)	46.4	14.4	14.4	14.4	14.4
Actuated g/C Ratio	0.58	0.18	0.18	0.18	0.18
v/c Ratio	1.19	0.17	0.57	0.19	0.23
Control Delay	105.5	30.9	40.2	30.4	8.3
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	105.5	30.9	40.2	30.4	8.3
LOS	F	C	D	C	A
Approach Delay	105.5		38.7	19.3	
Approach LOS	F		D	B	

Intersection Summary	
Cycle Length: 80	
Actuated Cycle Length: 80	
Offset: 14.4 (18%), Referenced to phase 2:EBL, Start of Green	
Control Type: Pretimed	
Maximum v/c Ratio: 1.19	
Intersection Signal Delay: 96.0	Intersection LOS: F
Intersection Capacity Utilization 64.5%	ICU Level of Service C
Analysis Period (min) 15	

Lane Group	EBL	EBR	WBT	WBR	NBT	SBL2	SBT
Act Effct Green (s)	17.6	17.6	36.0	36.0	14.4	14.4	14.4
Actuated g/C Ratio	0.22	0.22	0.45	0.45	0.18	0.18	0.18
v/c Ratio	0.47	0.09	1.36	0.99	0.15	0.05	0.09
Control Delay	30.1	0.6	196.6	60.5	29.7	28.1	0.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	30.1	0.6	196.6	60.5	29.7	28.1	0.3
LOS	C	A	F	E	C	C	A
Approach Delay			141.0		29.7		5.0
Approach LOS			F		C		A

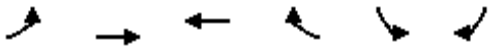
Intersection Summary	
Cycle Length: 80	
Actuated Cycle Length: 80	
Offset: 13 (16%), Referenced to phase 4:WBTL, Start of Green	
Control Type: Pretimed	
Maximum v/c Ratio: 1.36	
Intersection Signal Delay: 112.0	Intersection LOS: F
Intersection Capacity Utilization 85.4%	ICU Level of Service E
Analysis Period (min) 15	

Lane Group	WBT	WBR	SBL	SBR	SEL
Act Effct Green (s)	17.6	51.2	20.8	20.8	29.6
Actuated g/C Ratio	0.22	0.64	0.26	0.26	0.37
v/c Ratio	0.69	0.20	0.66	0.50	0.71
Control Delay	40.7	4.5	36.7	32.6	17.0
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	40.7	4.5	36.7	32.6	17.0
LOS	D	A	D	C	B
Approach Delay	27.4		35.2		17.0
Approach LOS	C		D		B

Intersection Summary	
Cycle Length: 80	
Actuated Cycle Length: 80	
Offset: 55 (69%), Referenced to phase 6:WBR and 2:SEL, Start of Green	
Control Type: Pretimed	
Maximum v/c Ratio: 0.71	
Intersection Signal Delay: 24.8	Intersection LOS: C
Intersection Capacity Utilization 58.3%	ICU Level of Service B
Analysis Period (min) 15	

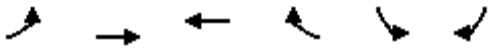
Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	NBR	SBL	SBT	SBR
Act Effct Green (s)	18.6	18.6	18.6	30.0	30.0	44.9	44.9	75.5	44.9	44.9	44.9
Actuated g/C Ratio	0.17	0.17	0.17	0.28	0.28	0.41	0.41	0.70	0.41	0.41	0.41
v/c Ratio	0.28	0.66	0.51	0.82	0.69	0.42	0.85	0.93	0.41	0.67	0.08
Control Delay	41.2	47.9	21.3	54.6	40.3	36.8	36.2	32.4	47.3	29.4	5.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	41.2	47.9	21.3	54.6	40.3	36.8	36.2	32.4	47.3	29.4	5.5
LOS	D	D	C	D	D	D	D	C	D	C	A
Approach Delay		40.8			45.6		34.6			28.6	
Approach LOS		D			D		C			C	

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 108.6	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.93	
Intersection Signal Delay: 36.3	Intersection LOS: D
Intersection Capacity Utilization 94.2%	ICU Level of Service F
Analysis Period (min) 15	



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Act Effct Green (s)	72.5	72.0	55.0	55.0	27.5	45.5
Actuated g/C Ratio	0.66	0.65	0.50	0.50	0.25	0.41
v/c Ratio	0.83	0.67	1.26	0.58	1.02	0.56
Control Delay	63.7	13.5	144.3	0.9	76.6	28.8
Queue Delay	0.0	0.0	0.3	0.8	0.0	0.0
Total Delay	63.7	13.5	144.7	1.8	76.6	28.8
LOS	E	B	F	A	E	C
Approach Delay		19.9	116.0		62.5	
Approach LOS		B	F		E	

Intersection Summary	
Cycle Length: 110	
Actuated Cycle Length: 110	
Offset: 0 (0%), Referenced to phase 1:WBT, Start of Green	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 1.26	
Intersection Signal Delay: 75.3	Intersection LOS: E
Intersection Capacity Utilization 100.7%	ICU Level of Service G
Analysis Period (min) 15	



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Act Effct Green (s)	25.5	110.0	41.0	41.0	29.5	55.0
Actuated g/C Ratio	0.23	1.00	0.37	0.37	0.27	0.50
v/c Ratio	0.35	0.60	1.04	0.19	0.47	0.64
Control Delay	34.3	0.5	68.0	9.2	37.7	18.3
Queue Delay	0.0	0.0	24.6	0.0	0.0	0.0
Total Delay	34.3	0.5	92.6	9.2	37.7	18.3
LOS	C	A	F	A	D	B
Approach Delay		4.4	88.3		21.9	
Approach LOS		A	F		C	

Intersection Summary	
Cycle Length: 110	
Actuated Cycle Length: 110	
Offset: 11 (10%), Referenced to phase 2:WBT and 6:EBT, Start of Green	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 1.04	
Intersection Signal Delay: 37.8	Intersection LOS: D
Intersection Capacity Utilization 73.3%	ICU Level of Service D
Analysis Period (min) 15	

Lane Group	EBL	EBT	EBR	WBL	WBR	NBT	SBT
Act Effct Green (s)	40.1	40.1	40.1	40.1	40.1	13.1	13.1
Actuated g/C Ratio	0.64	0.64	0.64	0.64	0.64	0.21	0.21
v/c Ratio	0.05	0.17	0.34	0.80	0.27	0.54	0.34
Control Delay	5.1	5.5	1.8	21.3	1.6	16.5	22.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	5.1	5.5	1.8	21.3	1.6	16.5	22.0
LOS	A	A	A	C	A	B	C
Approach Delay		3.3				16.5	22.0
Approach LOS		A				B	C

Intersection Summary	
Cycle Length: 84	
Actuated Cycle Length: 62.2	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.80	
Intersection Signal Delay: 12.5	Intersection LOS: B
Intersection Capacity Utilization 70.2%	ICU Level of Service C
Analysis Period (min) 15	

Lane Group	SEL	SET	NWL	NWR	NET	SWL	SWT
Act Effct Green (s)	20.0	20.0	12.0	33.5	30.5	17.5	52.5
Actuated g/C Ratio	0.20	0.20	0.12	0.34	0.30	0.18	0.52
v/c Ratio	1.10	1.05dl	0.56	1.07	1.09	1.18	0.35
Control Delay	119.4	48.9	52.9	81.6	87.1	135.9	14.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	119.4	48.9	52.9	81.6	87.1	135.9	14.3
LOS	F	D	D	F	F	F	B
Approach Delay		77.3			87.1		66.9
Approach LOS		E			F		E

Intersection Summary	
Cycle Length: 100	
Actuated Cycle Length: 100	
Offset: 0 (0%), Referenced to phase 2:SWTL and 6:, Start of Green	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 1.18	
Intersection Signal Delay: 77.5	Intersection LOS: E
Intersection Capacity Utilization 93.3%	ICU Level of Service F
Analysis Period (min) 15	

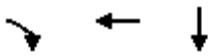
dl Defacto Left Lane. Recode with 1 though lane as a left lane.

Lane Group	EBT	EBR	WBT	SBT	SBR
Act Effct Green (s)	26.4	26.4	26.4	22.4	22.4
Actuated g/C Ratio	0.33	0.33	0.33	0.28	0.28
v/c Ratio	0.36	0.88	0.46	0.57	0.67
Control Delay	23.0	42.1	25.7	28.2	8.0
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	23.0	42.1	25.7	28.2	8.0
LOS	C	D	C	C	A
Approach Delay	37.3		25.7	17.8	
Approach LOS	D		C	B	

Intersection Summary	
Cycle Length: 80	
Actuated Cycle Length: 80	
Offset: 39.2 (49%), Referenced to phase 2:SBTL, Start of Green	
Control Type: Pretimed	
Maximum v/c Ratio: 0.88	
Intersection Signal Delay: 26.7	Intersection LOS: C
Intersection Capacity Utilization 75.5%	ICU Level of Service D
Analysis Period (min) 15	

Lane Group	EBL	EBT	WBT	WBR	NBT	NBR
Act Effct Green (s)	23.2	23.2	23.2	23.2	31.2	31.2
Actuated g/C Ratio	0.29	0.29	0.29	0.29	0.39	0.39
v/c Ratio	0.05	0.91	0.30	0.80	0.74	1.69
Control Delay	21.4	64.6	24.3	37.0	21.7	339.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	21.4	64.6	24.3	37.0	21.7	339.7
LOS	C	E	C	D	C	F
Approach Delay		62.9	34.4		188.2	
Approach LOS		E	C		F	

Intersection Summary	
Cycle Length: 80	
Actuated Cycle Length: 80	
Offset: 35.2 (44%), Referenced to phase 2:NBTL, Start of Green	
Control Type: Pretimed	
Maximum v/c Ratio: 1.69	
Intersection Signal Delay: 131.9	Intersection LOS: F
Intersection Capacity Utilization 81.9%	ICU Level of Service D
Analysis Period (min) 15	



Lane Group	EBR	WBT	SBT
Act Effct Green (s)	21.0	21.0	50.5
Actuated g/C Ratio	0.26	0.26	0.63
v/c Ratio	0.46	0.08	0.61
Control Delay	12.6	13.7	2.5
Queue Delay	1.9	0.0	0.1
Total Delay	14.5	13.7	2.7
LOS	B	B	A
Approach Delay		13.7	2.7
Approach LOS		B	A

Intersection Summary	
Cycle Length: 80	
Actuated Cycle Length: 80	
Offset: 50 (63%), Referenced to phase 2:SBT and 6:, Start of Green	
Control Type: Pretimed	
Maximum v/c Ratio: 0.61	
Intersection Signal Delay: 4.6	Intersection LOS: A
Intersection Capacity Utilization 68.1%	ICU Level of Service C
Analysis Period (min) 15	

Lane Group	WBT	WBR	NBT
Act Effct Green (s)	20.0	20.0	49.0
Actuated g/C Ratio	0.25	0.25	0.61
v/c Ratio	0.03	0.26	0.61
Control Delay	23.0	16.7	1.1
Queue Delay	0.0	0.0	0.8
Total Delay	23.0	16.7	1.9
LOS	C	B	A
Approach Delay	17.4		1.9
Approach LOS	B		A

Intersection Summary	
Cycle Length: 80	
Actuated Cycle Length: 80	
Offset: 23 (29%), Referenced to phase 2:NBTL and 6:, Start of Green	
Control Type: Pretimed	
Maximum v/c Ratio: 0.61	
Intersection Signal Delay: 2.8	Intersection LOS: A
Intersection Capacity Utilization 54.6%	ICU Level of Service A
Analysis Period (min) 15	

Lane Group	SBL	SBR2	NEL2	NET	NER	SWL	SWR
Act Effct Green (s)	43.2	43.2	18.4	18.4	18.4	18.4	18.4
Actuated g/C Ratio	0.54	0.54	0.23	0.23	0.23	0.23	0.23
v/c Ratio	0.77	0.19	0.02	0.89	0.69	0.18	0.24
Control Delay	25.9	14.4	13.0	55.0	32.2	28.6	28.3
Queue Delay	7.3	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	33.3	14.4	13.0	55.0	32.2	28.6	28.3
LOS	C	B	B	D	C	C	C
Approach Delay	31.1			44.0			
Approach LOS	C			D			

Intersection Summary	
Cycle Length: 80	
Actuated Cycle Length: 80	
Offset: 67 (84%), Referenced to phase 10:Ped, Start of Green	
Control Type: Pretimed	
Maximum v/c Ratio: 0.89	
Intersection Signal Delay: 34.1	Intersection LOS: C
Intersection Capacity Utilization 77.5%	ICU Level of Service D
Analysis Period (min) 15	

Lane Group	EBT	NBT	SBT
Act Effct Green (s)	45.6	21.6	21.6
Actuated g/C Ratio	0.57	0.27	0.27
v/c Ratio	0.95	0.29	0.29
Control Delay	28.4	10.1	26.7
Queue Delay	0.0	0.0	0.0
Total Delay	28.4	10.1	26.7
LOS	C	B	C
Approach Delay	28.4	10.1	26.7
Approach LOS	C	B	C

Intersection Summary	
Cycle Length: 80	
Actuated Cycle Length: 80	
Offset: 7.2 (9%), Referenced to phase 2:EBTL, Start of Green	
Control Type: Pretimed	
Maximum v/c Ratio: 0.95	
Intersection Signal Delay: 27.4	Intersection LOS: C
Intersection Capacity Utilization 60.6%	ICU Level of Service B
Analysis Period (min) 15	

Lane Group	EBL	SEL	SET	NWT	NWR
Act Effct Green (s)	46.4	14.4	14.4	14.4	14.4
Actuated g/C Ratio	0.58	0.18	0.18	0.18	0.18
v/c Ratio	1.22	0.17	0.57	0.19	0.23
Control Delay	119.3	30.9	40.2	30.4	8.3
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	119.3	30.9	40.2	30.4	8.3
LOS	F	C	D	C	A
Approach Delay	119.3		38.7	19.3	
Approach LOS	F		D	B	

Intersection Summary	
Cycle Length: 80	
Actuated Cycle Length: 80	
Offset: 14.4 (18%), Referenced to phase 2:EBL, Start of Green	
Control Type: Pretimed	
Maximum v/c Ratio: 1.22	
Intersection Signal Delay: 108.2	Intersection LOS: F
Intersection Capacity Utilization 65.5%	ICU Level of Service C
Analysis Period (min) 15	

Lane Group	EBL	EBR	WBT	WBR	NBT	SBL2	SBT
Act Effct Green (s)	17.6	17.6	36.0	36.0	14.4	14.4	14.4
Actuated g/C Ratio	0.22	0.22	0.45	0.45	0.18	0.18	0.18
v/c Ratio	0.47	0.09	1.46	1.04	0.15	0.05	0.10
Control Delay	30.1	0.6	240.0	75.8	29.7	28.1	0.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	30.1	0.6	240.0	75.8	29.7	28.1	0.3
LOS	C	A	F	E	C	C	A
Approach Delay			173.4		29.7		5.0
Approach LOS			F		C		A

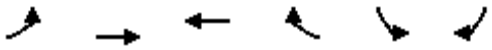
Intersection Summary	
Cycle Length: 80	
Actuated Cycle Length: 80	
Offset: 13 (16%), Referenced to phase 4:WBTL, Start of Green	
Control Type: Pretimed	
Maximum v/c Ratio: 1.46	
Intersection Signal Delay: 138.2	Intersection LOS: F
Intersection Capacity Utilization 88.4%	ICU Level of Service E
Analysis Period (min) 15	

Lane Group	WBT	WBR	SBL	SBR	SEL
Act Effct Green (s)	17.6	51.2	20.8	20.8	29.6
Actuated g/C Ratio	0.22	0.64	0.26	0.26	0.37
v/c Ratio	0.69	0.20	0.66	0.50	0.71
Control Delay	40.7	4.5	36.7	32.6	16.9
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	40.7	4.5	36.7	32.6	16.9
LOS	D	A	D	C	B
Approach Delay	27.4		35.2		16.9
Approach LOS	C		D		B

Intersection Summary	
Cycle Length: 80	
Actuated Cycle Length: 80	
Offset: 55 (69%), Referenced to phase 6:WBR and 2:SEL, Start of Green	
Control Type: Pretimed	
Maximum v/c Ratio: 0.71	
Intersection Signal Delay: 24.7	Intersection LOS: C
Intersection Capacity Utilization 58.3%	ICU Level of Service B
Analysis Period (min) 15	

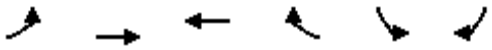
Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	NBR	SBL	SBT	SBR
Act Effct Green (s)	19.0	19.0	19.0	30.1	30.1	45.0	45.0	75.5	45.0	45.0	45.0
Actuated g/C Ratio	0.17	0.17	0.17	0.28	0.28	0.41	0.41	0.69	0.41	0.41	0.41
v/c Ratio	0.28	0.67	0.50	0.82	0.70	0.42	0.85	0.93	0.41	0.67	0.08
Control Delay	41.0	48.1	20.9	55.2	40.7	37.4	36.6	33.3	47.6	29.7	5.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	41.0	48.1	20.9	55.2	40.7	37.4	36.6	33.3	47.6	29.7	5.5
LOS	D	D	C	E	D	D	D	C	D	C	A
Approach Delay		41.0			46.0		35.3			28.9	
Approach LOS		D			D		D			C	

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 109.1	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.93	
Intersection Signal Delay: 36.8	Intersection LOS: D
Intersection Capacity Utilization 94.2%	ICU Level of Service F
Analysis Period (min) 15	



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Act Effct Green (s)	72.5	72.0	55.0	55.0	27.5	45.5
Actuated g/C Ratio	0.66	0.65	0.50	0.50	0.25	0.41
v/c Ratio	0.83	0.67	1.28	0.58	1.02	0.56
Control Delay	63.7	13.5	152.1	0.8	76.6	28.8
Queue Delay	0.0	0.0	0.4	1.0	0.0	0.0
Total Delay	63.7	13.5	152.5	1.8	76.6	28.8
LOS	E	B	F	A	E	C
Approach Delay		19.9	122.6		62.5	
Approach LOS		B	F		E	

Intersection Summary	
Cycle Length: 110	
Actuated Cycle Length: 110	
Offset: 0 (0%), Referenced to phase 1:WBT, Start of Green	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 1.28	
Intersection Signal Delay: 78.7	Intersection LOS: E
Intersection Capacity Utilization 101.5%	ICU Level of Service G
Analysis Period (min) 15	



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Act Effct Green (s)	25.5	110.0	41.0	41.0	29.5	55.0
Actuated g/C Ratio	0.23	1.00	0.37	0.37	0.27	0.50
v/c Ratio	0.35	0.60	1.04	0.19	0.48	0.79
Control Delay	34.3	0.5	68.0	9.2	38.1	24.4
Queue Delay	0.0	0.0	24.7	0.0	0.0	0.0
Total Delay	34.3	0.5	92.8	9.2	38.1	24.4
LOS	C	A	F	A	D	C
Approach Delay		4.4	88.5		27.0	
Approach LOS		A	F		C	

Intersection Summary	
Cycle Length: 110	
Actuated Cycle Length: 110	
Offset: 11 (10%), Referenced to phase 2:WBT and 6:EBT, Start of Green	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 1.04	
Intersection Signal Delay: 38.9	Intersection LOS: D
Intersection Capacity Utilization 76.8%	ICU Level of Service D
Analysis Period (min) 15	

Lane Group	EBL	EBT	EBR	WBL	WBR	NBT	SBT
Act Effct Green (s)	40.1	40.1	40.1	40.1	40.1	13.1	13.1
Actuated g/C Ratio	0.64	0.64	0.64	0.64	0.64	0.21	0.21
v/c Ratio	0.05	0.17	0.34	0.85	0.29	0.54	0.34
Control Delay	5.1	5.5	1.8	25.6	1.6	16.5	22.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	5.1	5.5	1.8	25.6	1.6	16.5	22.0
LOS	A	A	A	C	A	B	C
Approach Delay		3.3				16.5	22.0
Approach LOS		A				B	C

Intersection Summary	
Cycle Length: 84	
Actuated Cycle Length: 62.2	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.85	
Intersection Signal Delay: 13.8	Intersection LOS: B
Intersection Capacity Utilization 72.1%	ICU Level of Service C
Analysis Period (min) 15	

Lane Group	SEL	SET	NWL	NWR	NET	SWL	SWT
Act Effct Green (s)	20.0	20.0	12.0	33.5	30.5	17.5	52.5
Actuated g/C Ratio	0.20	0.20	0.12	0.34	0.30	0.18	0.52
v/c Ratio	1.10	1.05dl	0.56	1.07	1.09	1.18	0.35
Control Delay	119.4	48.9	52.9	81.6	87.6	135.9	14.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	119.4	48.9	52.9	81.6	87.6	135.9	14.3
LOS	F	D	D	F	F	F	B
Approach Delay		77.3			87.6		66.9
Approach LOS		E			F		E

Intersection Summary	
Cycle Length: 100	
Actuated Cycle Length: 100	
Offset: 0 (0%), Referenced to phase 2:SWTL and 6:, Start of Green	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 1.18	
Intersection Signal Delay: 77.7	Intersection LOS: E
Intersection Capacity Utilization 93.4%	ICU Level of Service F
Analysis Period (min) 15	

dl Defacto Left Lane. Recode with 1 though lane as a left lane.