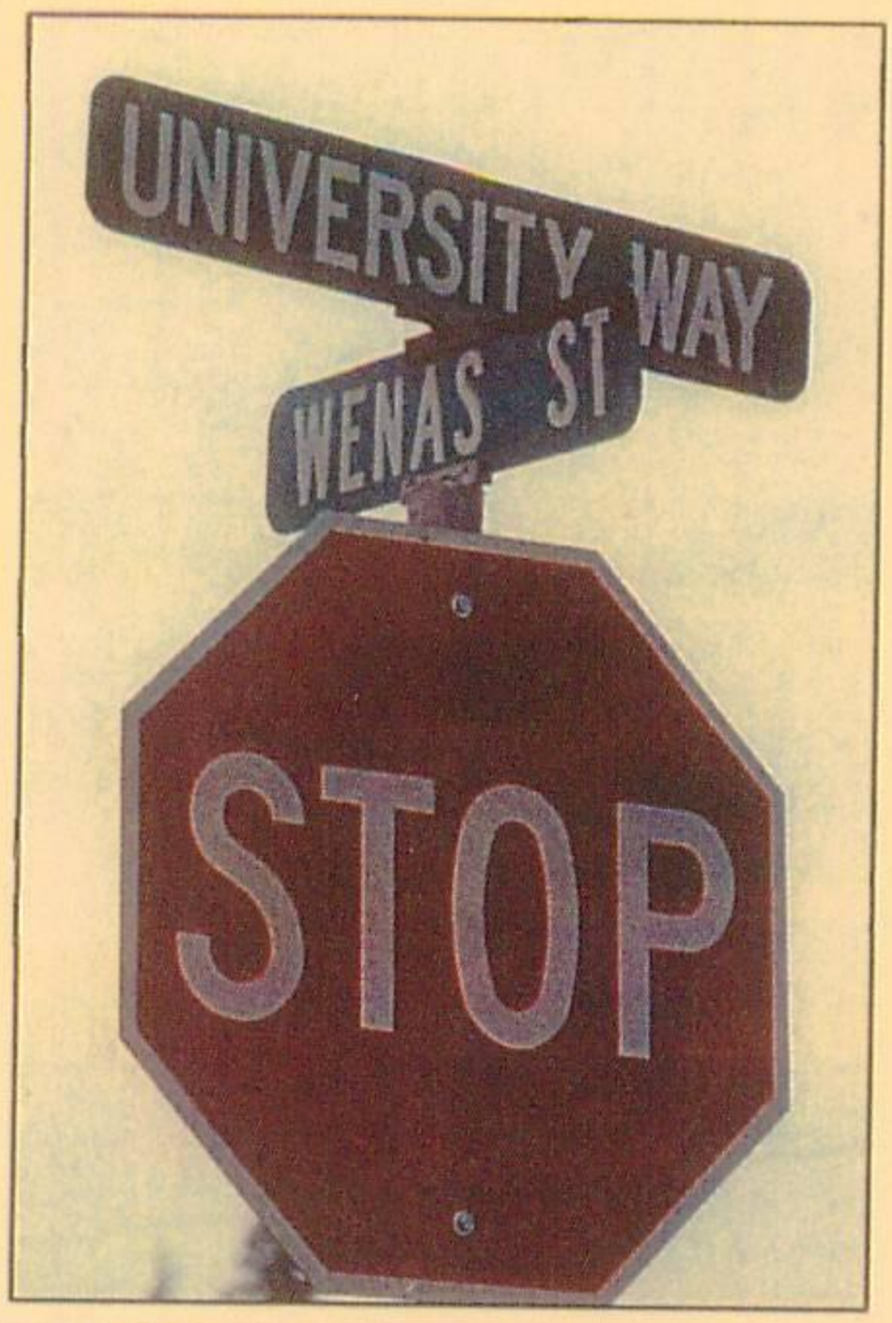

City of Ellensburg
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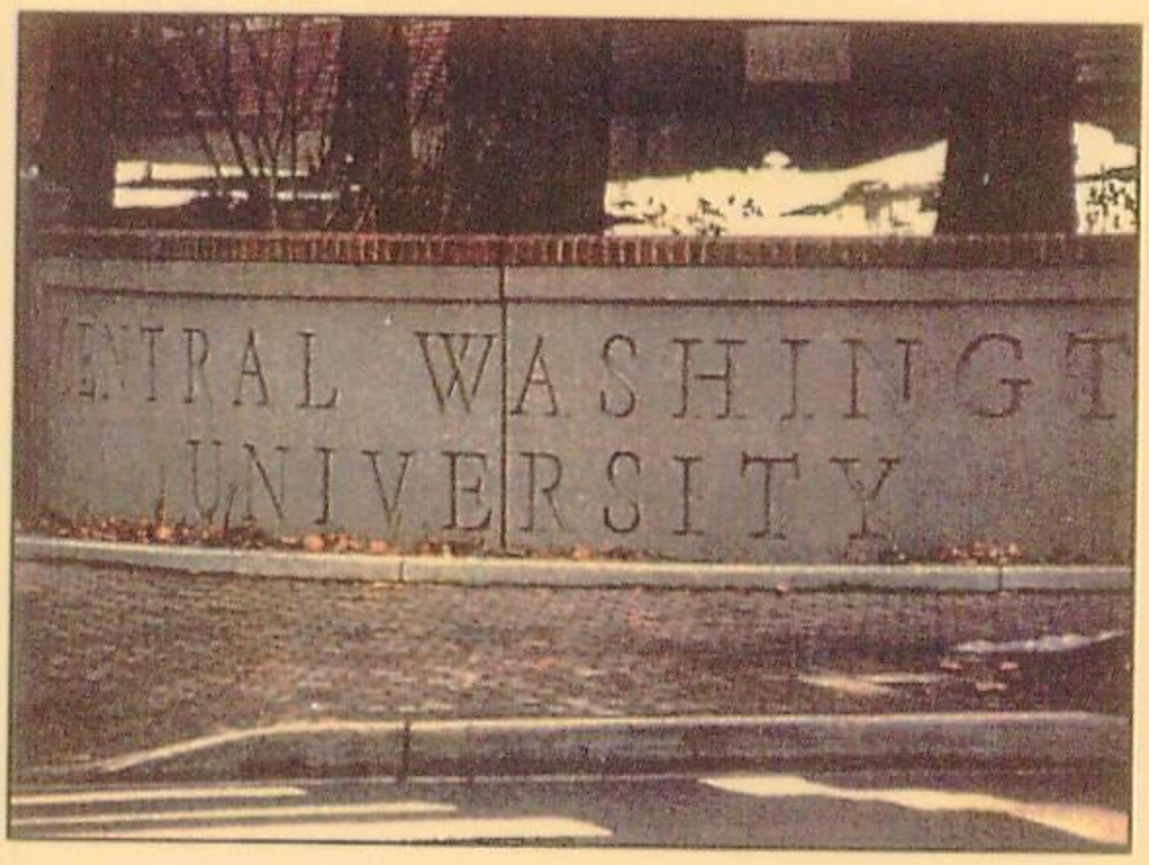
Public Works Department

UNIVERSITY WAY

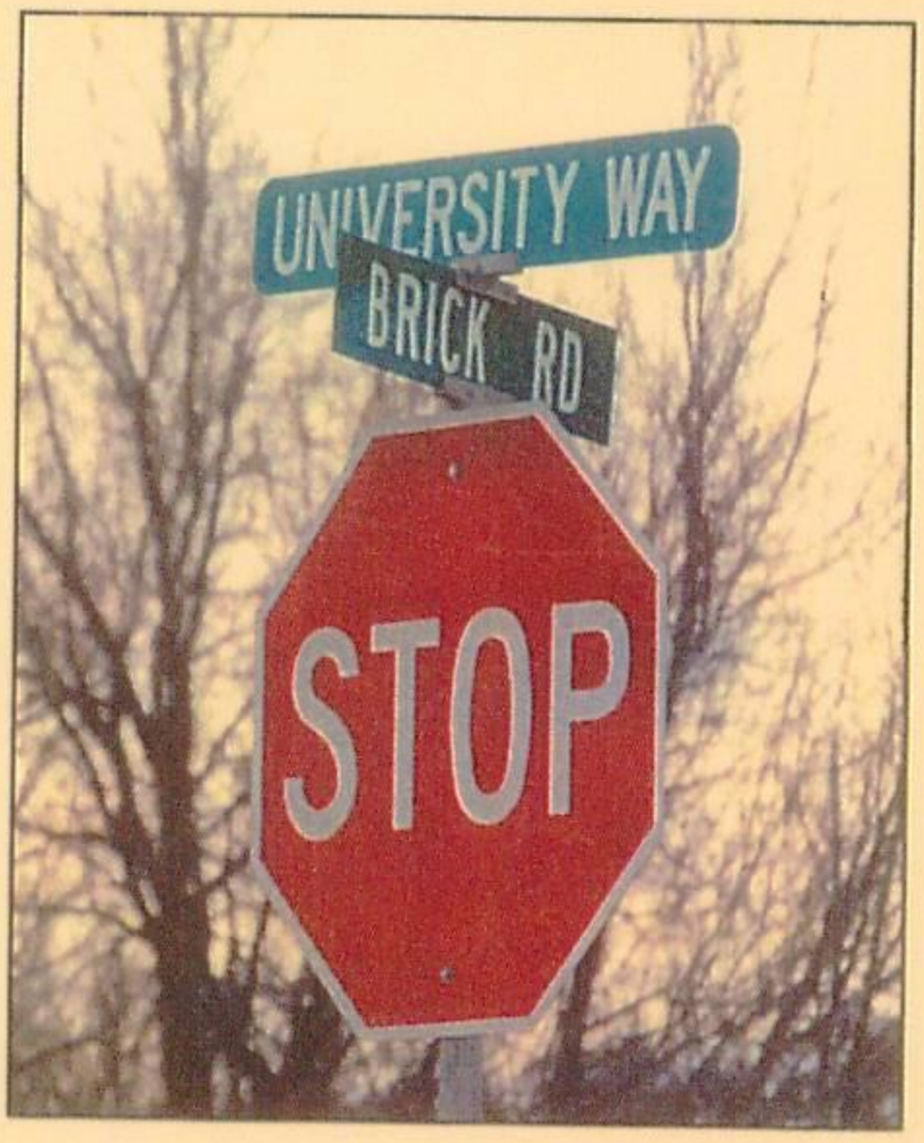
CHANNELIZATION STUDY



N. WENAS STREET

TO

BRICK ROAD



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May 2010

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I. Introduction

The City of Ellensburg commissioned a study to evaluate the viability of converting University Way from a four/five lane arterial to a three lane roadway with bike lanes on both sides between N Wenas Street and Brick Road. The intent of the proposed action is to enhance bicycle and pedestrian circulation in the University Way corridor adjacent to the Central Washington University campus in the city of Ellensburg. This project was a recommended action from the City of Ellensburg Non Motorized Transportation Plan (2008).

The purpose of this report is to:

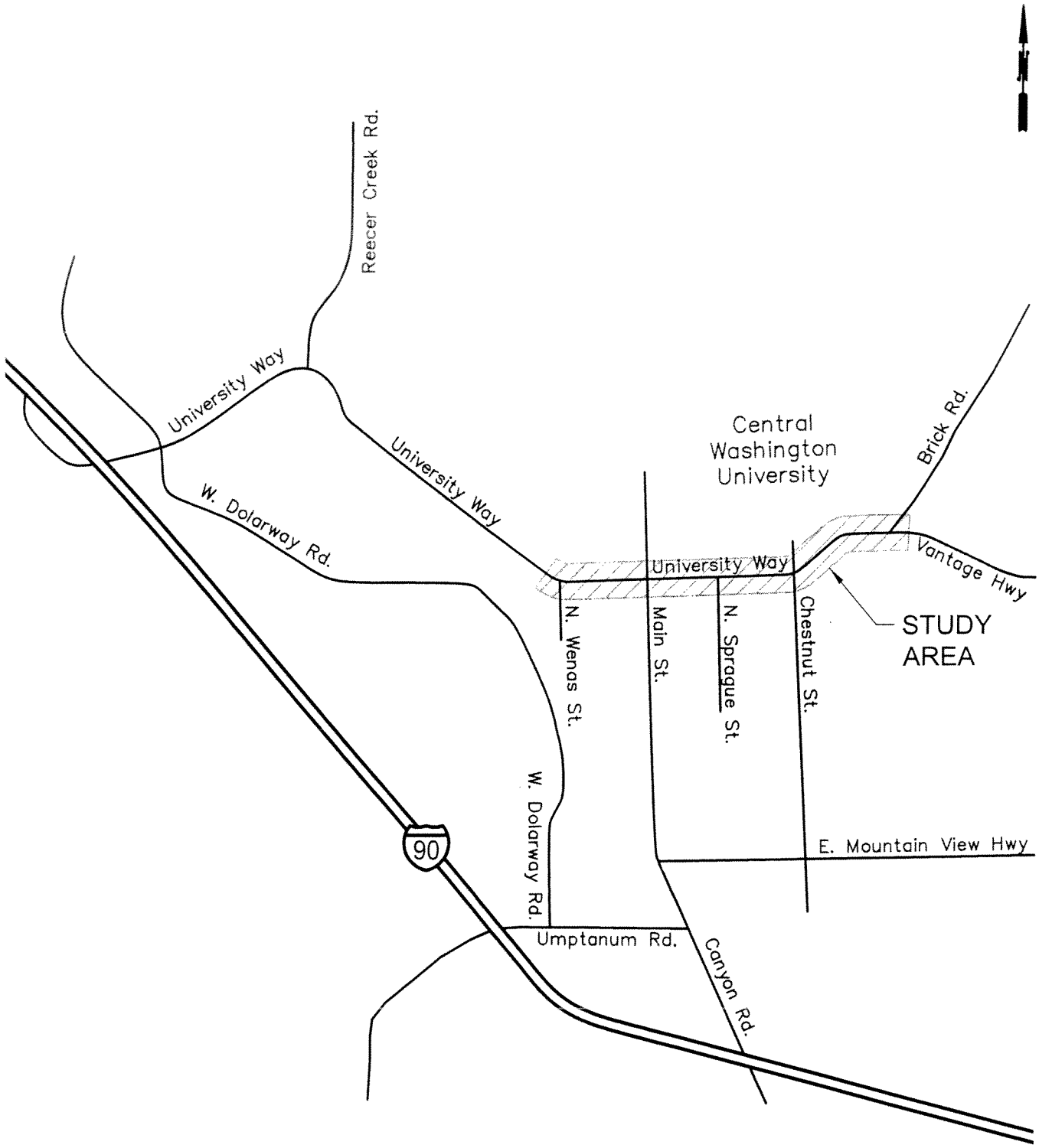
- Determine if there are any existing operational deficiencies in the University Way corridor that would be mitigated with the conversion to a three lane cross-section with a bike lane on both sides; and,
- Determine if any operational deficiencies would be created by converting the roadway to a three lane cross-section; and
- Identify necessary system changes to accommodate the proposed three lane plan; and
- Identify the estimated cost associated with converting University Way from four lanes to three lanes; and,
- Identify future development related impacts of implementing the proposed plan; and,
- Identify the longevity of the three lane concept before additional capacity in the corridor is needed to accommodate future growth.

The study area is limited to the University Way Corridor from N Wenas Street to Brick Road and includes all intersecting roadways. A vicinity map is presented in Figure 1.

This report summarizes the process, findings, conclusions and recommendations of the study. The scope of work follows the traditional format of collecting necessary data; analyzing the data; formulating conclusions about the data; and making an educated recommendation.

II. Existing Conditions

The existing conditions analysis documents the existing traffic operations in the University Way corridor. This section includes a discussion of the impacted roadways and intersections located within the study area; a summary of existing PM peak hour, daily, and weekend traffic volumes; traffic control within the corridor; existing level of service at the signalized intersections; travel speed and delay within the corridor; and the three year collision history at all intersecting streets and mid block locations.



DN TRAFFIC CONSULTANTS	VICINITY MAP FIGURE 1	UNIVERSITY WAY CHANNELIZATION STUDY

Roadways

University Way is a two lane to four lane principal arterial within the City of Ellensburg. The roadway runs generally west – east between the I-90/SR 97 interchange (Exit 106) on the west and the east City limits at approximately Brick Road on the east. On the west, the roadway becomes SR 97 in the vicinity of the Interstate 90 interchange and on east, Vantage Highway at the east City limits. The roadway was previously known as Cascade Way and East/West 8th Street. This study focuses on the section of University Way between North Wenas Street on the west and Brick Road on the east.

In the study section, University Way is currently channelized into four lanes; two in each direction. At the major signalized intersections of Main Street, Chestnut Street and Alder Street, the roadway expands to five lanes to include a designated left turn pocket.

Traffic control includes traffic signals at the following intersections:

- University Way/Water Street
- University Way/Main Street/A Street
- University Way/Pine Street (pedestrian only – east of Pine)
- University Way/D Street/Sprague Street
- University Way/E Street (pedestrian only)
- University Way/Walnut Street
- University Way/N Chestnut Street
- University Way/N Alder Street

In addition to the eight signalized crossings of University Way, there are also 19 unsignalized intersections which are controlled by stop signs on the intersecting side street. Of the 19 intersections, 18 are "T" intersections.

Traffic Volumes

The City of Ellensburg provided 2009 traffic volume data on University Way. The data included four day, 24 hour tube counts at three locations along the corridor between Wenas and Alder Street. The locations include:

- University Way/w/o Columbia Street
- University Way/e/o Anderson Street
- University Way/e/o Poplar Street

The four day counts included Tuesday, Wednesday, Saturday and Sunday. The four day, 24 hour counts were supplemented with a 12 hour Friday count between Noon and Midnight. The capacity of a four lane roadway is approximately 24,000 vehicles per day. A summary of the 24 hour count volumes is presented in Figures 2 – 4.

Figure 2. 24 Hour Traffic Volumes West of Columbia Street

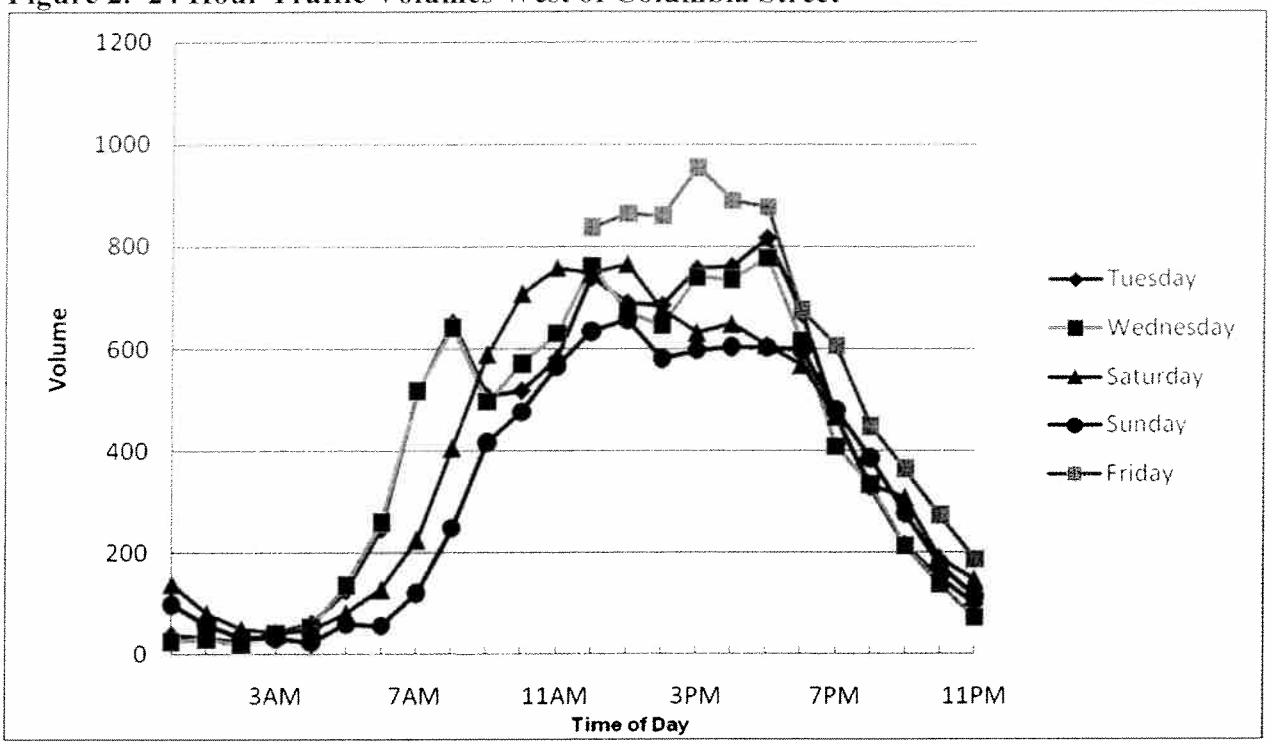


Figure 3. 24 Hour Traffic Volumes East of Anderson

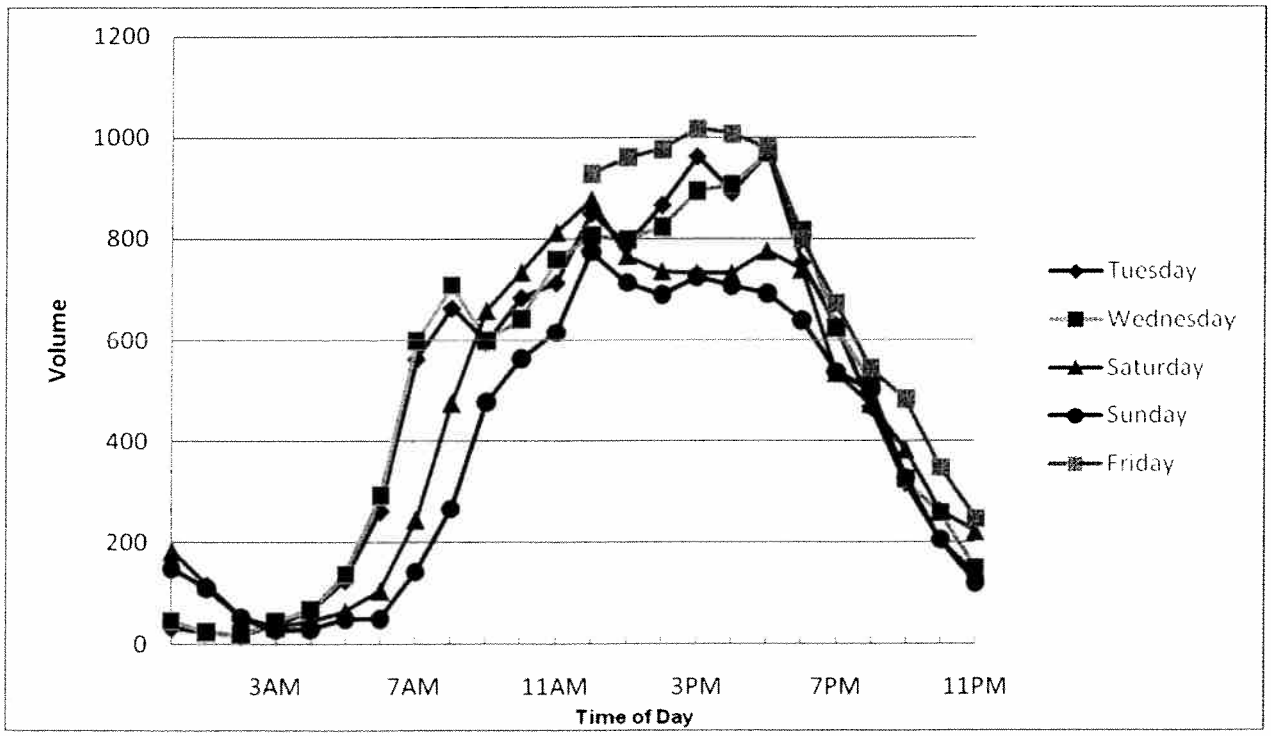
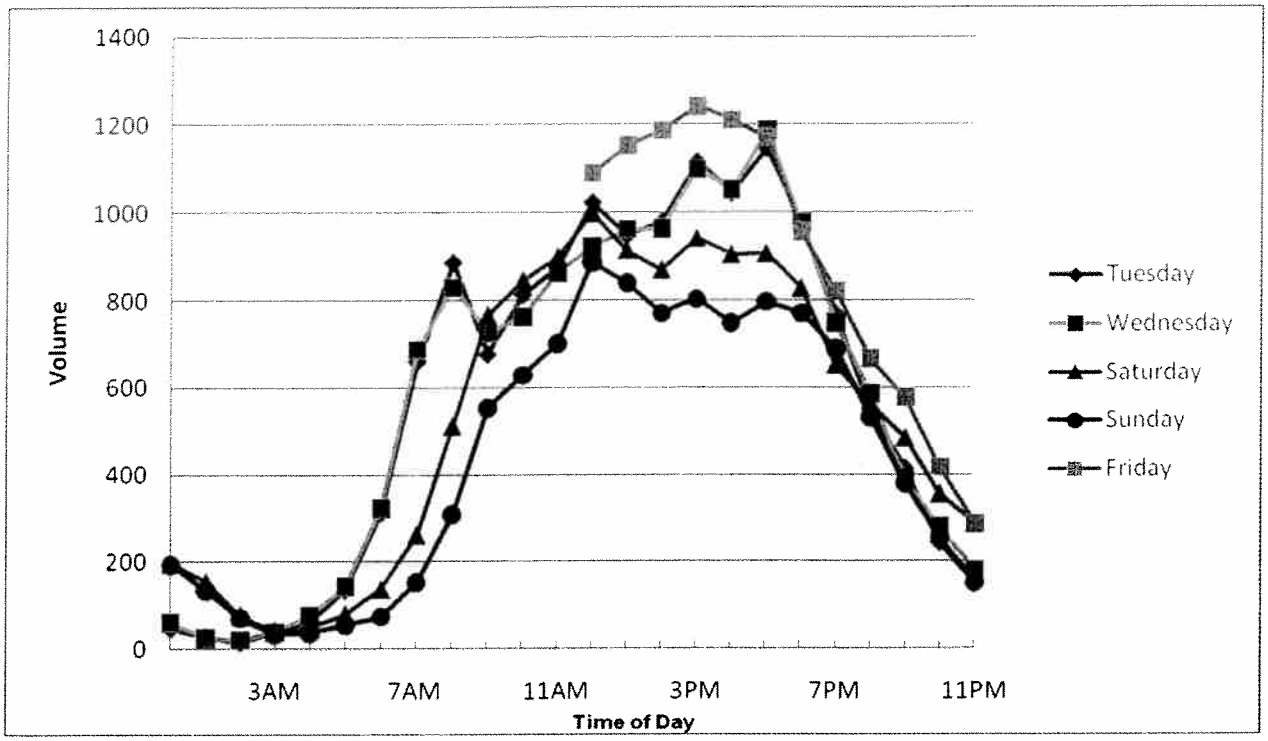


Figure 4. 24 Hour Traffic Volumes East of Poplar

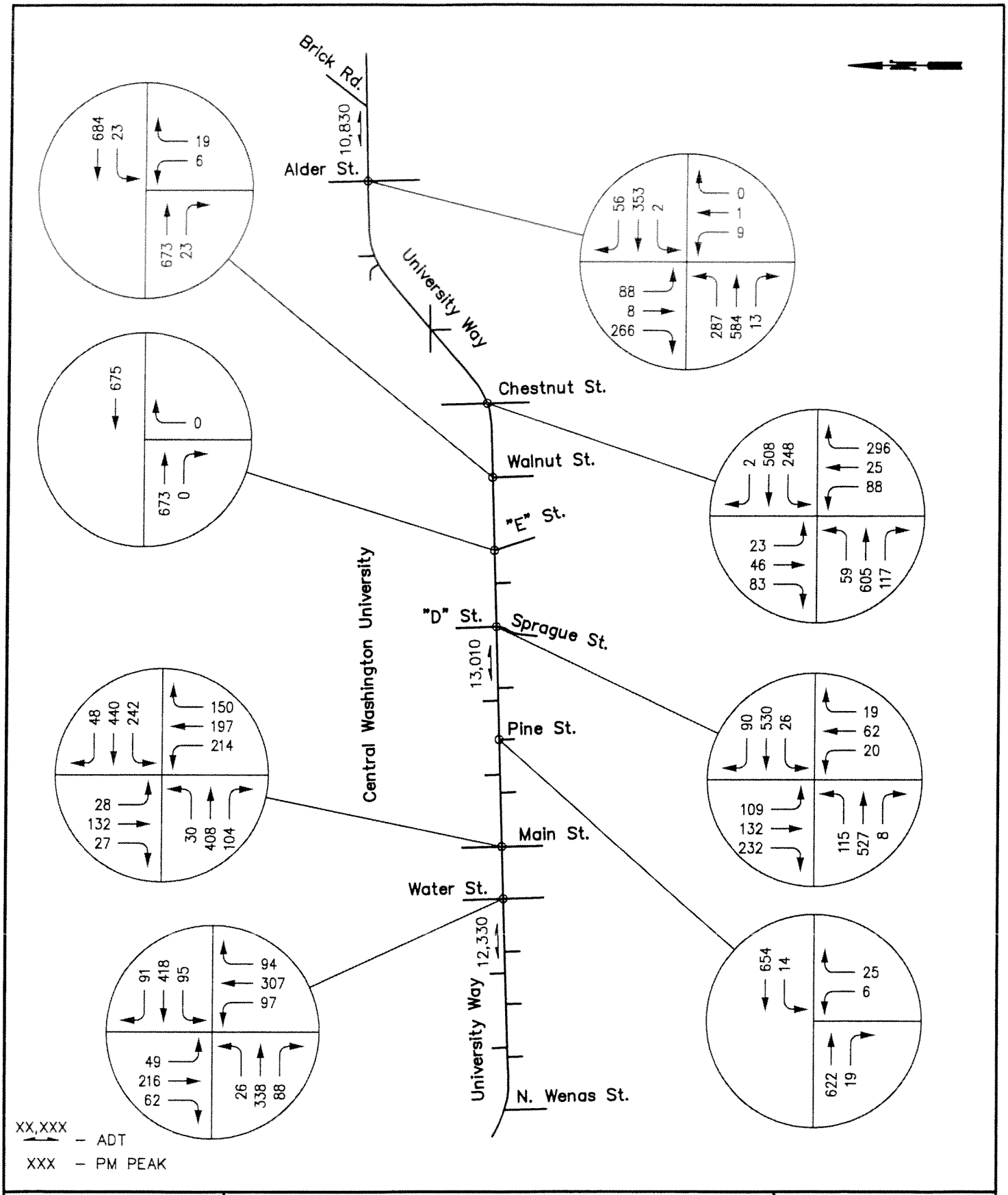


As shown in Figures 2 – 4, the traffic volume patterns along University Way are relatively consistent between the three locations. The volume however is significantly higher at Poplar Street (approximately 14,000 vehicles per day) on the east end of the corridor than it is at Columbia Street (approximately 10,000 vehicles per day) on the west end. The daily volume on University Way east of Anderson Street is approximately 12,000 vehicles per day. The capacity of a four lane roadway is approximately 24,000 vehicles per day.

The weekend volume at all three locations is approximately 1,000 vehicles per day less than it is during the week. The volume on Fridays is typically higher during the mid-day period with an earlier PM peak than the other days of the week. This may result from students leaving the campus for the weekend.

In addition to the daily volumes, PM peak period turning movement counts were collected by City staff at each of the signalized intersections during the month of October 2009. A summary of the PM peak hour turning movement volumes for each intersection are presented in Figure 5.

The counts collected in October were factored to represent an annual average traffic volume. The factor was determined through a review of annual traffic count data taken from WSDOT count stations on I-90 and SR 97. Interestingly enough, both count locations indicated October volumes were17 percent less than annual average. Therefore, the October turning movement counts were factored by 1.17 to obtain the annual average



DN TRAFFIC CONSULTANTS	PM PEAK HOUR TRAFFIC VOLUMES 2009 FIGURE 5	UNIVERSITY WAY CHANNELIZATION STUDY

PM peak volume. These volumes for the individual intersections are summarized in the Technical Appendix.

In addition to the vehicular traffic volumes, pedestrian and bicycle volumes were also observed during the average weekday PM peak period. These counts were collected for each intersection during the same day during the month of October 2009 as the intersection turning movement count. A summary of the pedestrian and bicycle volumes for each intersection are presented in Table 1.

Table 1. Pedestrian/Bicycle PM Peak Hour Volumes

	PM Peak Hour Volumes	
Intersection	**Pedestrians**	**Bicycles**
University Way/Water St	0	5
University Way/Main St	13	9
University Way/Pine St	64	16
University Way/Sprague-D St	98	14
University Way/E St	47	8
University Way/Walnut St	64	6
University Way/Chestnut St	34	2
University Way/Alder St	3	8

As shown in Table 1, the heaviest concentration of pedestrian and bicycle activity is focused around the main entrances to the University on University Way. The heaviest volumes occur at the University Way/Sprague Street/D Street intersection with a total of 98 pedestrians and 14 bicycles observed during the PM peak hour. The lowest volumes occur at the ends of the corridor; i.e. Alder Street and Water Street.

Existing Traffic Signal Timing

The existing traffic signals on University Way between Wenas Street and Brick Road are controlled through time base coordination. The signal timing and coordination data is programmed into the traffic signal controller at each intersection. The signal timing patterns and coordination routines are changed at various times during the day to respond to prevailing traffic conditions. During the PM peak period, 2:45 PM to generally 6:00 PM, the signals typically run under Cycle Plan 5. The prevailing cycle lengths at each intersection are presented in Table 2.

Table 2. Existing PM Peak Period Cycle Length.

	CYCLE	
Intersection	**Plan**	**Length (secs)**
University Way/Water St	5	70
University Way/Main St	5	80
University Way/Pine St	5	Free[1]
University Way/Sprague-D St	5	60
University Way/E St	5	60
University Way/Walnut St	5	60
University Way/Chestnut St	5	60
University Way/Alder St	5	Free[1]

Free – Signal timing is dictated by on street traffic demand.

As shown in Table 2, under the existing signal timing during the PM peak period, the intersections of Sprague-D Street, E Street, Walnut Street, and Chestnut Street are all coordinated at a 60 second cycle. Water Street operates at a 70 second cycle and Main Street operates at an 80 second cycle. The intersections of Pine Street (pedestrian signal) and Alder Street are running in the "Free" mode which means they respond individually to the demand of prevailing traffic.

As part of the analysis, Synchro 7 was used to determine the natural and optimized cycle length for each of the signalized intersections in the corridor. The result of the cycle length analysis is shown in Table 3.

Table 3. Optimized Cycle Length with Existing Channelization

	Cycle Length[1]		
Intersection	**Existing**	**Natural**	**Optimized**
University Way/Water St	70	45	65
University Way/Main St	80	65	65
University Way/Pine St	Free	40	65
University Way/Sprague-D St	60	55	65
University Way/E St	60	40	65
University Way/Walnut St	60	45	65
University Way/Chestnut St	60	70	65
University Way/Alder St	Free	60	65

1 – in seconds

Table 3 presents the current cycle length under the three scenarios. The "Existing" scenario represents how the intersections are currently operating; the "Natural" cycle length represents the optimized cycle length for each individual intersection; and the "Optimized" cycle length represents the cycle length if all the intersections were optimized under coordination.

As shown in the table, the natural cycle lengths range from 40 seconds to 70 seconds, with 70 seconds required for Chestnut Street. Main Street is the only intersection that has a natural cycle length consistent with the optimized coordinated cycle of 65 seconds.

Normally, a large discrepancy between the natural cycle length and the optimized cycle length would create significant signal related delay at the intersection. However, as will be shown in the Level of Service discussion, the delay is relatively low. This condition is assumed to occur because the side street volumes at these intersections are relatively low.

Roadway Channelization and Traffic Control

The Consultant obtained the existing channelization of University Way between Wenas and Brick Road from the City. In addition, the Consultant conducted a field survey to document existing signing along the corridor. A summary of the existing channelization and signing is presented in Figure 6.

Level of Service

Definition

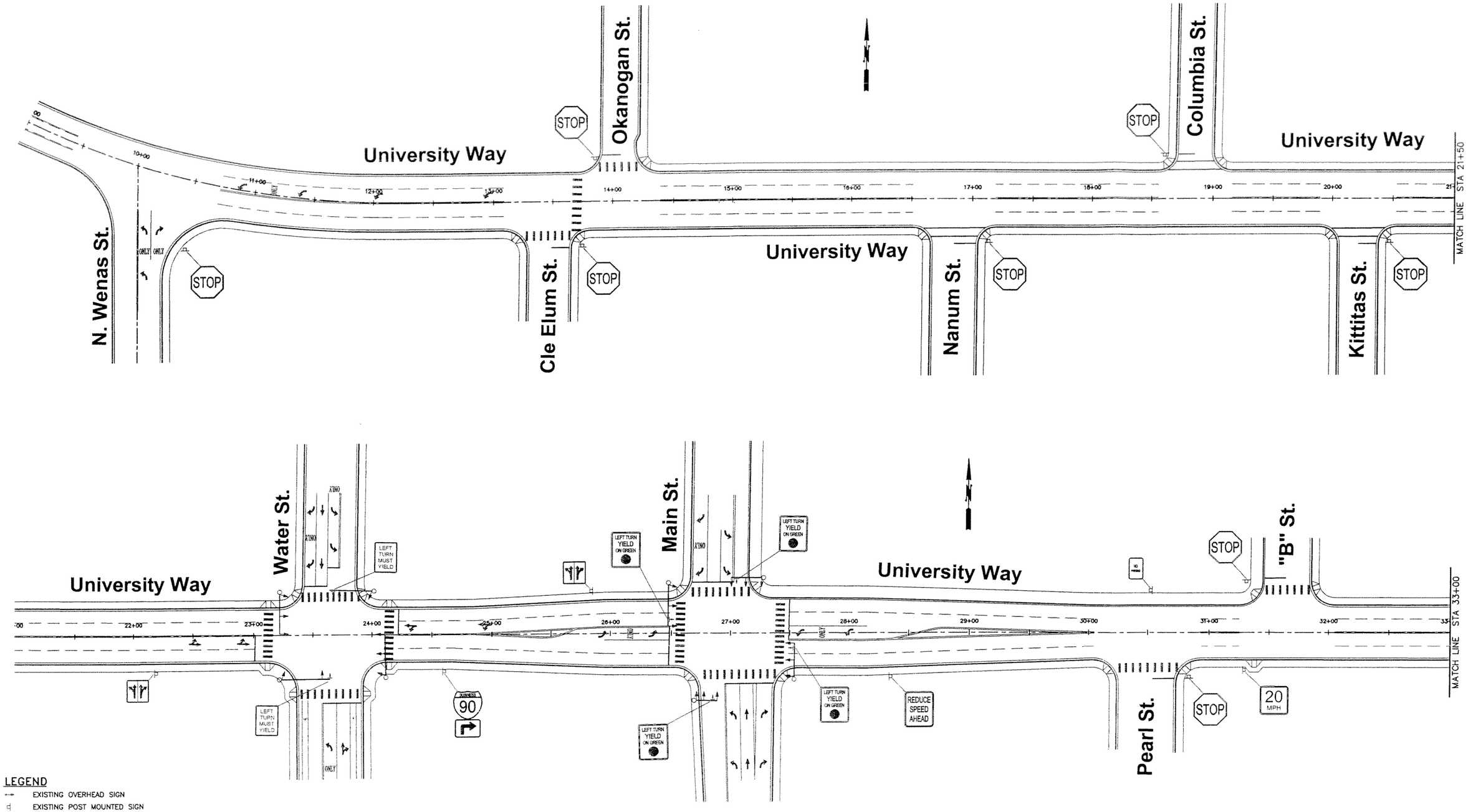
According to the Highway Capacity Manual (HCM), level of service (LOS) is used to qualify the degree of traffic congestion and driver comfort on streets or at intersections. The HCM describes the methodologies for calculating LOS on street segments and at signalized and unsignalized intersections.

According to the 2000 HCM (TRB Special Report #209), there are six levels of service by which the operational performance of the roadway system may be described. Level of service values range from LOS A, a relatively free-flowing condition, to LOS F which indicates operational breakdown.

The level of service for signalized intersections is defined in terms of average control delay per vehicle. The criterion for LOS A is an average control delay of less than or equal to 10 seconds per vehicle. The criterion for LOS F is an average control delay of greater than 80 seconds.

The City of Ellensburg has adopted a LOS standard of C for the majority of the roads and intersections within the city limits. The only exception to this standard is at the I-90 interchange intersections at Canyon Road and SR 97 where the City has adopted LOS D. Any intersection below this standard is defined as needing improvement.

The existing PM peak hour level of service (LOS) was calculated using Synchro 7.0 and the PM peak hour turning movement volumes provided by the City from PM peak period counts collected during October 2009. Synchro optimized the existing signal operation on the corridor.



Bridge Engr.	–	–			
Supervisor	–	–			
Designed By	–	–			
Checked By	G.N.	1/10			
Detailed By	R.A.	1/10			
Bridge Projects Engr.	–	–			
Preliminary Plan By	R.A.	1/10			
Architect/Specialist:	–	–	REVISIONS	BY	APPR.

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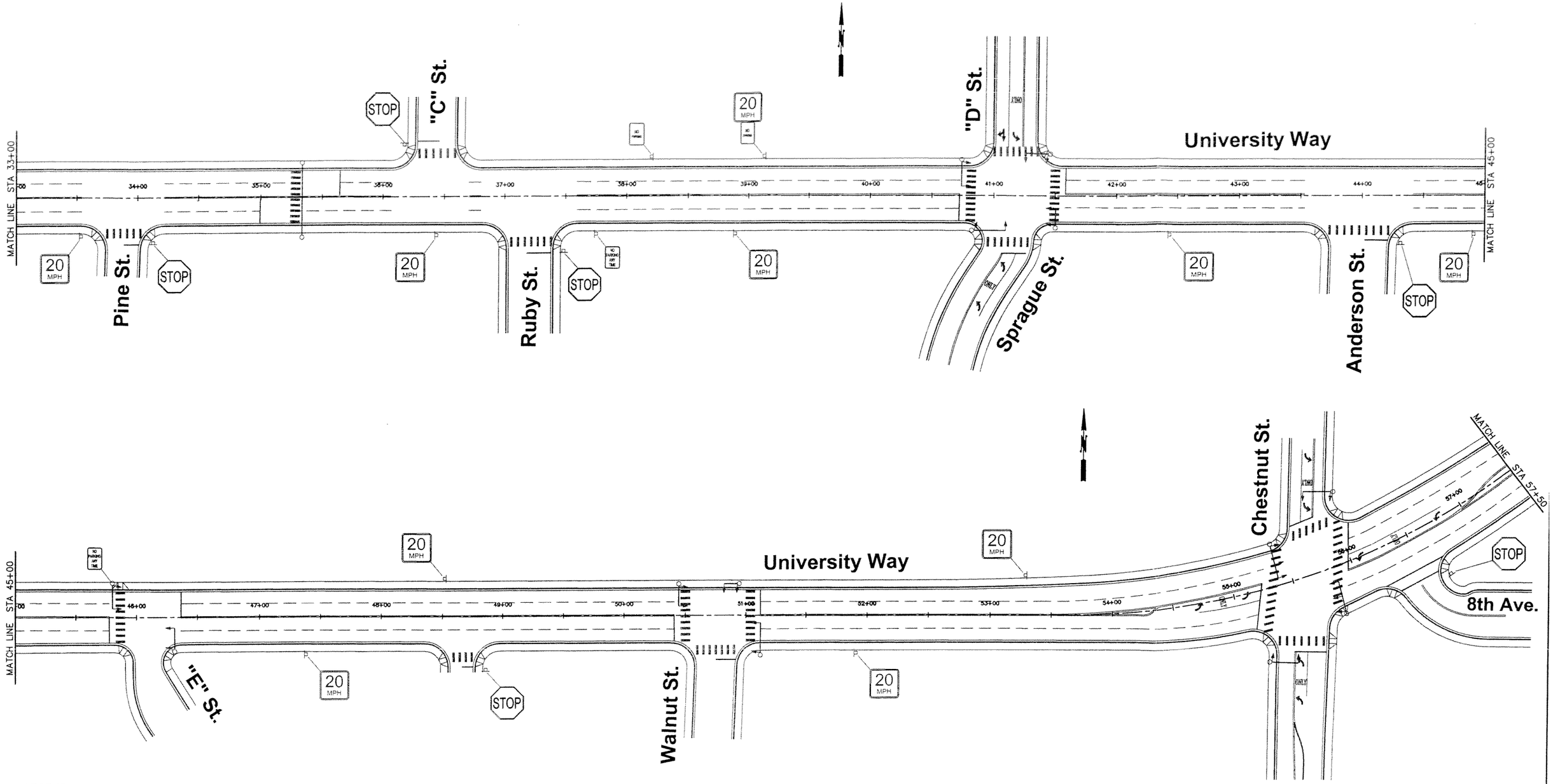
CITY OF ELLENSBURG

UNIVERSITY WAY CHANNELIZATION STUDY
N. Wenas Street to Brick Road

EXISTING CHANNELIZATION FIG. 6

SHT 1 OF 3



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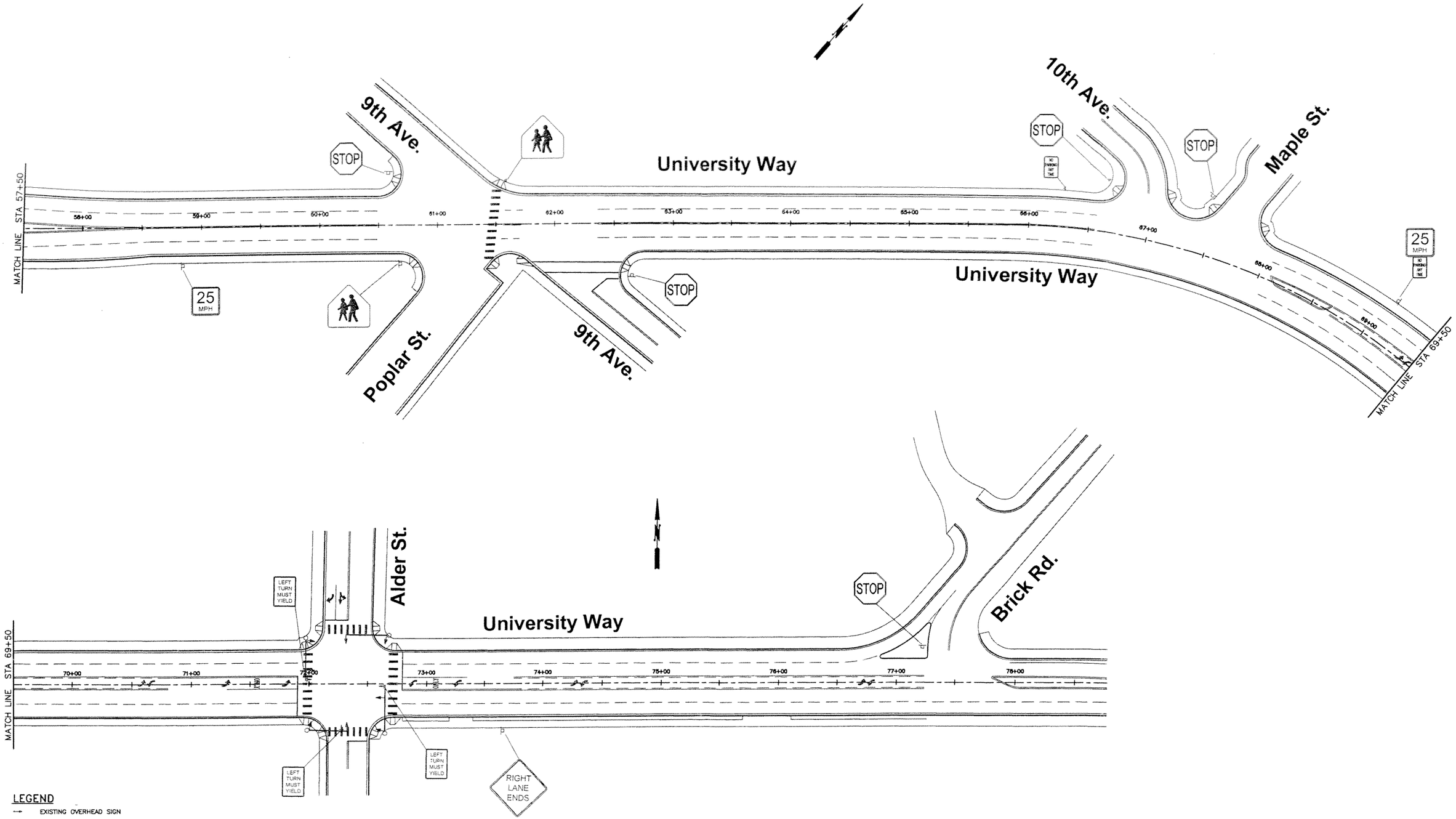
UNIVERSITY WAY
CHANNELIZATION STUDY
N. Wenas Street to Brick Road

EXISTING
CHANNELIZATION
FIG. 6

SHT 2 OF 3



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CITY OF ELLENSBURG

UNIVERSITY WAY
CHANNELIZATION STUDY
N. Wenas Street to Brick Road

EXISTING
CHANNELIZATION
FIG. 6

SHT 3 OF 3

Table 4. 2009 PM Peak Hour Level of Service

Intersection	Optimized Cycle[1]	Level of Service	LOS Standard
University Way/Water Street	65	B (14.1)	C
University Way/Main Street	65	B (12.1)	C
University Way/Pine Street	65	B(13.6)	C
University Way/D Street	65	A(8.8)	C
University Way/E Street	65	A(0.1)	C
University Way/Walnut Street	65	A(9.6)	C
University Way/Chestnut Street	65	B(15.3)	C
University Way/Alder Street	65	A(6.3)	C

1) -in seconds
(xx) – seconds of delay

As shown in Table 4, under optimized signal coordination, the existing level of service is relatively high along the corridor; LOS A and B. All intersections have a LOS which exceeds the LOS standard for these intersections of LOS C. In addition, all intersections are coordinated under a single cycle length.

Speed and Delay

A PM peak period speed and delay study was conducted on University Way during the month of November 2009. The study was conducted by traveling the corridor at the prevailing speed between Wenas Street and Brick Road. To obtain a legitimate sample, six runs were made in each direction. The study recorded overall travel time and delay occurring along the corridor. In addition, the cause of the delay was noted.

The "Running Speed" represents the time required to travel the link less the delay time encountered along the link. The "Travel Speed" represents the total time, including delay, required to travel between intersections. The "Stop Delay" is the time from the point when the brakes are applied until the prevailing speed of the corridor is obtained.

The results of the speed and delay study are presented in Table 5. The results of each travel time run are provided in the Technical Appendix.

Table 5. Speed and Delay Results

			Running Speed[1]		Travel Speed[2]		Stop Delay[3]		
Route	**Section**	**Length**	**WB**	**EB**	**WB**	**EB**	**WB**	**EB**	**Cause**
University Way	Brick – Alder	516	21	26	16	26	4.8	0	Signal
	Alder – Chestnut	1,674	22	25	19	25	8.3	0	Signal
	Chestnut – Walnut	476	14	12	11	9	7.1	7.9	Signal/Bus
	Walnut – E	474	21	23	16	14	4.8	8.4	Signal
	E – D	496	14	17	12	13	3.8	5.6	Left Turn
	D – Pine	580	17	14	17	10	0	11.1	Signal
	Pine – Main	834	19	24	13	21	14.5	3.0	Signal
	Main – Water	336	11	7	8	4	7.0	22.4	Signal/Left Turn
	Water – Wenas	1,364	28	21	28	16	0	11.9	Signal
	Average		**21**	**21**	**18**	**18**	**5.6**	**7.8**	

1) Running Speed – in mph
2) Travel Speed – in mph
3) Stop Delay – in seconds
4) Length – in feet
WB - Westbound
EB – east bound

As shown in Table 5, the average "Running Speed" on University Way is approximately 21 mph in both the east and west bound direction, whereas the average "Travel Speed" is 18 mph in both directions. The average "Stop Delay" is 5.6 seconds in the west bound direction and 7.8 seconds in the east bound direction. The majority of the delay is related to the traffic signal operation although at D Street and Water Street left turn delay is also observed.

The highest "Running Speed" (28 mph) was observed in the west bound direction between Water Street and Wenas Street and the lowest was seven mph between Water Street and Main Street in the east bound direction. The low speed results from the close proximity of the intersections such that the study vehicle was unable to obtain the prevailing speed before reaching the checkpoint.

The highest "Travel Speed" (28 mph) was also observed between Water Street and Wenas Street in the west bound direction and the lowest (4 mph) was also observed between Water Street and Main Street in the east bound direction.

The highest "Stop Delay" (22.4 seconds) was observed between Main Street and Water Street in the east bound direction. There were several links which had no "Stop Delay".

The results of this analysis suggest modifications to the existing traffic signal timing could result in travel time savings. This correlates with the findings of the Synchro analysis which suggest the signals should be coordinated at 65 seconds to reduce delay.

Collision History

The City provided the collision history on University Way between Wenas Street and Brick Road for the latest available three year period from January 1, 2006 through December 31, 2008. The collision history is summarized by intersection and mid-block locations.

There have been a total of 69 intersection collisions in the University Way corridor during the most recent three year period. Of the 69 collisions, 23 occurred in 2006, 26 in 2007 and 20 in 2008. This is an average of 23 collisions per year during the three year time period. Of the collisions, 27 were right angle (39%); 17 were rear end (25%); 11 were left turning vehicles (16%); 7 were side swipes (10%); 3 were fixed object (3%); 3 were bicycle related (3%); and 4 were pedestrian related (4%). The majority (14) of the right angle collisions occurred at Water Street. The highest number of rear end collisions occurred at Main Street (4). The remainder of the collisions was spread across the other 14 intersections experiencing collisions during the last three years. The remaining 13 intersections had no reported incidents.

A summary of the intersection collisions is presented in Table 6.

Table 6. Three Year Intersection Collision History – 2006 - 2008

	YEAR				
Intersection	**2006**	**2007**	**2008**	**Total**	**Coll Rate[1]**
University Way/Okanogan St	1	1	1	3	
University Way/Columbia St		2	1	3	
University Way/Water St	9	7	4	20	0.94
University Way/Main St	2	3	5	10	0.43
University Way/Pearl St	1	1		2	
University Way/B St	1			1	
University Way/Pine St	1			1	
University Way/Ruby St	3	2		5	
University Way/C Street		1		1	
University Way/D-Sprague St	2	6	4	12	0.76
University Way/Walnut St			1	1	0.06
University Way/Chestnut St	2		1	3	0.13
University Way/Maple St			1	1	
University Way/Alder St	1	3	2	6	0.32
TOTAL	**23**	**26**	**20**	**69**	

1) Collision Rate – Collisions per million entering vehicles.

The collision rate was calculated for those intersections which had complete volumes. The daily volume at each intersection was factored from the PM peak hour turning movement count. As shown in Table 6, Water Street has the highest collision rate at 0.94 collisions per million entering vehicles. Even so, this rate is below the statewide average of 1.0 collisions per million entering vehicles for similar intersections. The remaining intersections had significantly lower collision rates.

There have been a total of 15 reported mid-block collisions during the latest available three year period from January 1, 2006 to December 31, 2008. A review of the available data for the 2009 reporting period indicated a significant increase in mid block collisions over what had been reported during the previous three year period. In fact, the total mid block collisions summarized in the available 2009 data indicated the number during 2009 was almost equal to the total reported during the previous three year period (15 versus 13) for a total three plus year summary of 28 mid block collisions.

A summary of the mid block collisions is presented in Table 7.

Table 7. Three Year (Plus) Mid Block Collision History – 2006 - 2009

	YEAR				
Intersection	**2006**	**2007**	**2008**	**2009**	**Total**
Bicycle			1	2	3
Rear End	3	2	1	1	7
Driveway	1	1		3	5
Side Swipe	3		1	5	9
Fixed Object		1	1	1	3
Head On				1	1
TOTAL	**7**	**4**	**4**	**13**	**28**

As shown in Table 7, forty six percent (13/28 = 0.46) of the mid block collisions occurred during the 2009 reporting period; twenty five percent (7/28 = 0.25) during the 2006 reporting period; and fourteen percent (4/28 = 0.14) during the 2007 and 2008 periods.

Of the total mid block collisions, nine (9) were "side swipe" (32 %); seven (7) were "rear end" (25 %); five (5) were driveway related (18 %); there were three (3) "fixed object" and "bicycle" related collisions (0.17 %); and one (1) was a "head on" collision (4 %).

The "side swipe" collisions are related to vehicles crossing the centerline and colliding with an adjacent vehicle. The "rear end" collisions are related to vehicles striking a stopped or stopping vehicle waiting to make a left turn.

The highest volume of mid block collisions occurred in the section between Chestnut Street and Alder Street (6) with the next highest located between Chestnut and Alder Street (5). The remaining collisions were spread randomly across the corridor with no other mid block section recording more than two (2).

A summary of the mid block and intersection related collisions by type and location and the collision rate calculations are presented in the Technical Appendix.

III. Analysis of the Proposed Three Lane Section

University Way is the only east-west corridor extending all the way through the City. As stated in the City of Ellensburg Nonmotorized Transportation Plan, *December 2008*, "It has been a goal of the City for many years, and is re-iterated in the 2007 Comprehensive Plan to increase pedestrian traffic across University Way between the University and the downtown. Traffic is heavy along the route and no feasible options exist for rerouting it".

The Nonmotorized Plan recommended (#6) as a short-term option for improving pedestrian movement across University Way:

> *"Study and then implement a "road diet" if warranted. A road diet involves restriping a 4 lane street to 3 (two driving, one turning, and bike lanes). A 3 lane configuration is easier to cross because the pedestrian only has to see one oncoming lane at a time, and the middle turn lane provides some refuge. The extra space for striped bike lanes will improve safety for bicyclists. A road diet on University Way may create traffic congestion, increasing wait times at signals, causing the level of service to decrease, though other communities have found the impact to be very little. If the street becomes congested, drivers may choose other routes to avoid it, diverting traffic to other east-west streets less capable of absorbing it. Concerns about potential collisions due to the off-set side streets have been expressed."*

The intent of this study is to determine if a "road diet" is warranted. It is this Consultant's understanding that conversion of University Way from a four lane section to a three lane section would be beneficial to pedestrians and bicycles if it can be demonstrated that University Way can provide efficient movement for all modes.

Although the Nonmotorized Transportation Plan suggests drivers may divert to other east-west routes, it should be noted that as stated above, "University Way is the only east-west corridor extending all the way through the city." Therefore, there may be no other viable routes to accommodate the overflow.

In this section, the report summarizes the impact of the proposed three lane configuration on corridor traffic operations. The analysis includes and evaluation of the following:

- Proposed traffic control
- Level of service
- Queuing
- Measures of Effectiveness
- Collision history
- Impact of future growth

- Proposed plan
- Cost Estimate to implement

It is with this background the analysis was conducted.

Traffic Control

The first step in the evaluation was to determine an effective traffic signal operation plan. This was generated by using Synchro 7.0 to determine appropriate traffic signal coordination and timing under the three lane configuration. The result of the optimization process is shown in Table 8.

Table 8. Optimized Cycle Length with Three Lane Configuration

	Cycle Length[1]			
	Existing Channelization		Three Lane Channelization	
Intersection	Existing Timing	Optimized	Natural	Optimized
University Way/Water St	70	65	45	70
University Way/Main St	80	65	80	70
University Way/Pine St	Free	65	55	90
University Way/Sprague-D St	60	65	60	90
University Way/E St	60	65	50	90
University Way/Walnut St	60	65	60	90
University Way/Chestnut St	60	65	90	90
University Way/Alder St	Free	65	60	90

1) in seconds

As shown in Table 8, under the three lane channelization option, the optimized signal timing includes coordination of University Way/Water Street and University Way/Main Street with a 70 second cycle and the remainder of the intersections with a 90 second cycle. The close proximity of the Water Street and Main Street intersections dictates the lower cycle length.

The natural cycle length is significantly lower than the optimized cycle length at six of eight the signalized intersections. The intersection of Main Street has a natural cycle length higher than the optimized cycle in coordination with Water Street. The optimized cycle length and the natural cycle length are the same at Chestnut Street.

The optimized 90 second cycle length to provide coordination may not be tolerable to side street traffic.

Level of Service

Level of service (LOS) for the three lane configuration was analyzed using Synchro 7.0. The same baseline signal data employed in the "existing condition" analysis was used in the three lane analysis along with the optimized cycle length for the three lane configuration.

The result of the LOS analysis is presented in Table 9.

Table 9. 2009 PM Peak Hour Level of Service with Three Lane Configuration

	Level of Service		
Intersection	**Existing**	**w/3 Lanes**	**Standard**
University Way/Water Street	B (14.1)	B (14.1)	C
University Way/Main Street	B (12.1)	C (32.1)	C
University Way/Pine Street	B(13.6)	B (13.8)	C
University Way/D Street	A(8.8)	B (16.7)	C
University Way/E Street	A(0.1)	A (2.4)	C
University Way/Walnut Street	A(9.6)	B (11.3)	C
University Way/Chestnut Street	B(15.3)	B (17.5)	C
University Way/Alder Street	A(6.3)	A (8.3)	C

As shown in Table 9, all intersections operate at an acceptable LOS under the three lane channelization configuration. However, it should be noted that several intersections have a lower level of service than under the existing four lane configuration. The intersections of Main, D, and Walnut all drop one level of service. In addition, there is a 45 percent increase in signal delay resulting from the conversion.

The City of Ellensburg as part of the development review process requires proposed development to evaluate the level of service impact of the development on each leg of the intersection and not just the total intersection. Therefore, consistency requires the City evaluate the impact of proposed project on each approach leg. A summary of the level of service for each leg of the intersection is presented in Table 10.

Table 10. 2009 PM Peak Hour Approach Level of Service

	Level of Service				
Intersection	**East Bound**	**North Bound**	**South Bound**	**West Bound**	**Standard**
University Way/Water Street	C(22.1)	B(12.5)	B(10.1)	A(7.4)	C
University Way/Main Street	C(30.3)	B(19.9)	B(16.2)	**D(39.5)**	C
University Way/D Street	A(4.7)	C(25.2)	**D(35.4)**	A(5.7)	C
University Way/E Street	A(4.7)	A(0.0)	-	A(2.8)	C
University Way/Walnut Street	B(12.8)	C(26.8)	A(0.0)	A(8.5)	C
University Way/Chestnut Street	A(3.8)	C(28.2)	C(26.0)	C(28.9)	C
University Way/Alder Street	A(3.9)	C(33.7)	**D(36.0)**	A(3.7)	C

(xx) – seconds of delay
Bold – indicates below City standard

As shown in Table 10, there are three intersections which currently have approach levels of service which fall below the City's LOS standard of C. These intersections include Main Street (west bound); D/Sprague Street (south bound) and Alder Street (south bound). In addition, all of the intersections have at least one approach which is at LOS C. As a result, there is very little additional capacity in the corridor under the three lane concept to address future growth without side street capacity improvements.

The analysis considered what measures were necessary to provide an acceptable level of service on the sub-standard side street approach to insure consistency with City policy.

Main Street
After considerable evaluation of alternatives, it was determined that elimination of the side street deficiency was impossible without improvements which would necessitate widening of Main Street. As a result, it was concluded that if the policy regarding side street level of service was applied, then it would not be possible to apply the three lane cross-section at this location and the five lane section should be maintained in the current configuration.

Alder Street
The Alder Street side street level of service deficiency was eliminated by simply allowing the intersection to operate as a stand alone intersection rather than coordinated with the other intersections in the corridor.

D Street/Sprague Street
To achieve an acceptable level of service for the side street approaches, it is necessary to allow the D Street/Sprague Street intersection to operate as a stand alone intersection as well. Under this operation, all approaches have an acceptable level of service.

Under this scenario, Water Street, Main Street, Pine Street, D Street/Sprague Street, E Street, and Walnut Street will all operate under a coordinated 80 second cycle length while Chestnut and Alder will operate in a "Free" mode.

Queuing

With the increase in signal delay, it is expected that queuing in the corridor will increase. A comparison of the queuing with the existing channelization and the proposed three lane configuration is presented in Table 11. The queuing of concern in this application is the designated left turn pocket. The only left turn pockets on University Way occur at Main Street, Chestnut Street, Alder Street, and Wenas Street.

Table 11. Queuing Results

	95th Percentile Queue[1]							
	Existing Channelization				Three Lane Channelization			
Intersection	**NBLT**	**SBLT**	**WBLT**	**EBLT**	**NBLT**	**SBLT**	**WBLT**	**EBLT**
Water St	53	30	na	na	60	35	2	22
Main St	94	22	51	25	105	25	152	13
Pine St	Na	na	na	na	na	na	na	na
D St	19	63	na	na	28	90	23	67
E St	Na	na	na	na	na	na	na	na
Walnut St	Na	na	na	na	na	na	8	na
Chestnut St	57	21	229	8	88	33	308	5
Alder St	Na	na	2	91	na	na	2	77

1) in feet

As shown in Table 11, the queuing increases significantly under the three lane configuration, as expected. The 95th percentile queues are easily accommodated on University Way under the three lane configuration by simply extending the pocket. The City may also allow the intersection queues to extend into the two way left turn lane.

The condition on the side street however is not the same. Queues will extend beyond the existing pocket at the following intersections: Water Street (NBLT and SBLT); Main Street (NBLT); D Street (SBLT); and Chestnut Street (NBLT) and (SBLT). If the City decides to proceed with implementation of the three lane channelization, the storage length at these intersections will need to be addressed.

Measures of Effectiveness

The overall effectiveness of the proposed three lane section in terms of corridor congestion was compared against the existing four lane configuration. The result of the comparison is presented in Table 12.

Table 12. Measures of Effectiveness

Measure	Existing Channelization	Three Lane Channelization
Control Delay (sec/veh)	11	15
Queue Delay (sec/veh)	0	1
Total Delay (sec/veh)	11	16
Total Delay (hr)	40	59
Stops/Veh	0.42	0.46
Stops (#)	5643	6172
Average Speed (mph)	15	13
Total Travel Time (hr)	124	143
Fuel Consumed (gal)	137	152
Unserved Vehicles (#)	0	0
Vehicles in dilemma zone (#)	0	0
Performance Index	55.5	75.8

As shown in Table 12, the operational efficiency of University Way is significantly impacted with the conversion from a four lane section to a three lane section. The most significant impact is in terms of Total Delay during the PM peak hour. The delay is estimated to increase by approximately 48 percent between the existing and three lane alternative. Naturally, this has an impact on fuel economy and air quality resulting in an overall increase in travel cost.

Collision History

One of the questions to be addressed as part of the three lane evaluation is the impact on collision history in the University Way corridor. Traditionally, the conversion of a four lane section to a three lane section has been documented as an effective measure to reduce corridor accidents when volumes are below a certain threshold. Typically, the reduction is observed in rear-end collisions which occur when left turning vehicles wait on the inside lane for an acceptable gap in opposing traffic. With a three lane section, the left turning vehicles wait in the designated turn lane and are not in conflict with through traffic.

The major collision occurrence in the University Way corridor has been "right angle" collisions. The predominant location of the right angle collisions was at Water Street, a signalized intersection. Following corrective action by the City, the frequency of "right angle" collisions at this intersection was significantly reduced in 2008.

The implementation of a three lane cross-section should help to reduce the frequency of "right angle" collisions at other intersections as the number of conflicts encountered when turning onto University Way or attempting to cross will be reduced.

There have also been a significant number of "rear end" collisions in the corridor which should be reduced with the implementation of a designated left turn pocket at the non signalized intersections and the minor signalized intersections of Water Street, D Street, and Walnut Street which currently do not have designated left turn lanes.

Although there isn't a significant history of pedestrian or bicycle related collisions, it is believed that through the provision of a designated bike path and the reduction of the exposure a pedestrian experiences when crossing University Way, pedestrian and bicycle safety should improve.

Overall, it is anticipated that implementation of the three lane section will improve the collision history in the corridor.

Speed and Delay

The results of the "speed and delay" analysis indicated that the majority of the existing delay in the corridor is the result of the existing PM peak period signal timing. This fact was also confirmed through the signal timing optimization under the 2009 annual average volume scenario. Even so, the current delay is not a critical factor in the overall evaluation of the effectiveness of the current channelization and signal operation.

Converting the corridor to a three lane cross section will have a dramatic impact on corridor delay. According to the LOS analysis, signal delay under the three lane cross-section is estimated to increase by 45 percent above what would be experienced under an optimized four lane cross-section.

Corridor Speed Analysis

As part of the evaluation, the Consultant was asked to consider the effect of raising the posted speed on the corridor from 20/25 mph to 35 mph. As a first step in this evaluation, a free flow speed study was conducted to determine driver response to the elimination of the posted speed. This study was conducted during the month of November 2009. A summary of the "speed study" results are presented in Table 13.

Table 13. Results of Spot Speed Survey

		Speed	
Location	**Direction**	**85th Percentile**	**Legal Limit**
University Way e/o Chestnut St	WB	27	25
University Way e/o Chestnut St	EB	27	25
University Way @ "C" St	WB	24	20
University Way @ C St	EB	24	20

WB – west bound
EB – east bound

As shown in Table 13, motorists in the University Way corridor appear comfortable with the posted speeds currently in place. At both locations observed, University Way @ "C" Street and University Way east of Chestnut Street, 85th percentile speeds were consistent with the posted speed limit.

To evaluate the impact of changing the posted speed to 35 mph throughout the corridor, a Synchro 7 analysis was conducted under the three lane channelization configuration. The results of the evaluation are presented in Table 14.

Table 14. Impact of Raising Posted Speed to 35 mph.

Measure of Effectiveness	Existing Posted Speed	Proposed 35 mph
Control Delay (sec/veh)	15	15
Queue Delay (sec/veh)	1	1
Total Delay (sec/veh)	16	15
Total Delay (hr)	59	58
Stops/Veh	0.46	0.44
Stops (#)	6172	5991
Average Speed (mph)	13	16
Total Travel Time (hr)	143	118
Fuel Consumed (gal)	152	156
Vehicles in dilemma zone (#)	0	350
Performance Index	75.8	74.7

Sec/veh – seconds per vehicle
Hr - hours
- number
Gal - gallons

As shown in Table 14, there is a notable difference in the measures of effectiveness between the existing speed limits on the corridor and the proposed 35 mph. Specifically, the delay per vehicle and total corridor delay are reduced under the proposed 35 mph speed. This results from a reduction in the number of stops that occur. As might be expected, the average speed increases from 13 mph to 16 mph with the speed limit change which results in a significant reduction in the total travel time. One aspect of the comparison that would be of concern is the high number (350) vehicles caught in the dilemma zone. The dilemma zone is that distance from the intersection where a motorist is unable to decide whether they should proceed or come to a stop under a yellow signal indication. With this high number there is likely to be a significant increase in the number of "rear end" collisions observed in the corridor.

Future Growth

The analysis has focused on evaluation of three lane proposal using existing traffic conditions. Of specific concern is the long term viability of the three lane concept. It is already known through the development of the Long Range Transportation Plan that growth in the areas north of the city will generate a significant increase in traffic on University Way necessitating major capacity improvements through the corridor.

The Long Range Plan looked at a 20 year growth scenario. To evaluate the longevity of converting to a three lane cross-section, an evaluation was made of the volume scenario

in the five and ten year time horizons. To make this assessment, the 2009 PM peak hour annual average volumes were factored by a compounded 2.5 percent per year for five years and ten years. The resultant PM peak hour volumes are presented in Figure 7 and summarized in the Technical Appendix.

The results of the level of service analysis are presented in Table 15.

Table 15. 2014 and 2019 PM Peak Hour Level of Service

	PM Peak Hour Level of Service				
	2009		2014	2019	
Intersection	**Existing**	**w/3 Lane**	**w/3 Lane**	**w/3 Lane**	**Standard**
University Way/Water Street	B	B	B	B	C
University Way/Main Street	B	C	**D**	**E**	C
University Way/D Street	B	B	B	C	C
University Way/E Street	A	B	A	A	C
University Way/Walnut Street	A	A	A	B	C
University Way/Chestnut Street	A	B	**D**	**F**	C
University Way/Alder Street	B	B	B	B	C

Bold – indicates below City standard

As shown in Table 15, the University Way/Main Street intersection and University Way/Chestnut Street intersection will operate at LOS D in the 2014 time horizon whereas those same intersections will operate at LOS E and LOS F respectively in the 2019 time horizon. At that point, the City will by necessity need to reevaluate the level of service policy or provide major reconstruction of these intersections. The remaining intersections will operate within the City's adopted LOS standard during the next 10 years.

As stated in the Long Range Transportation Plan, major widening improvements will be required in the University Way corridor in the 20 year time horizon

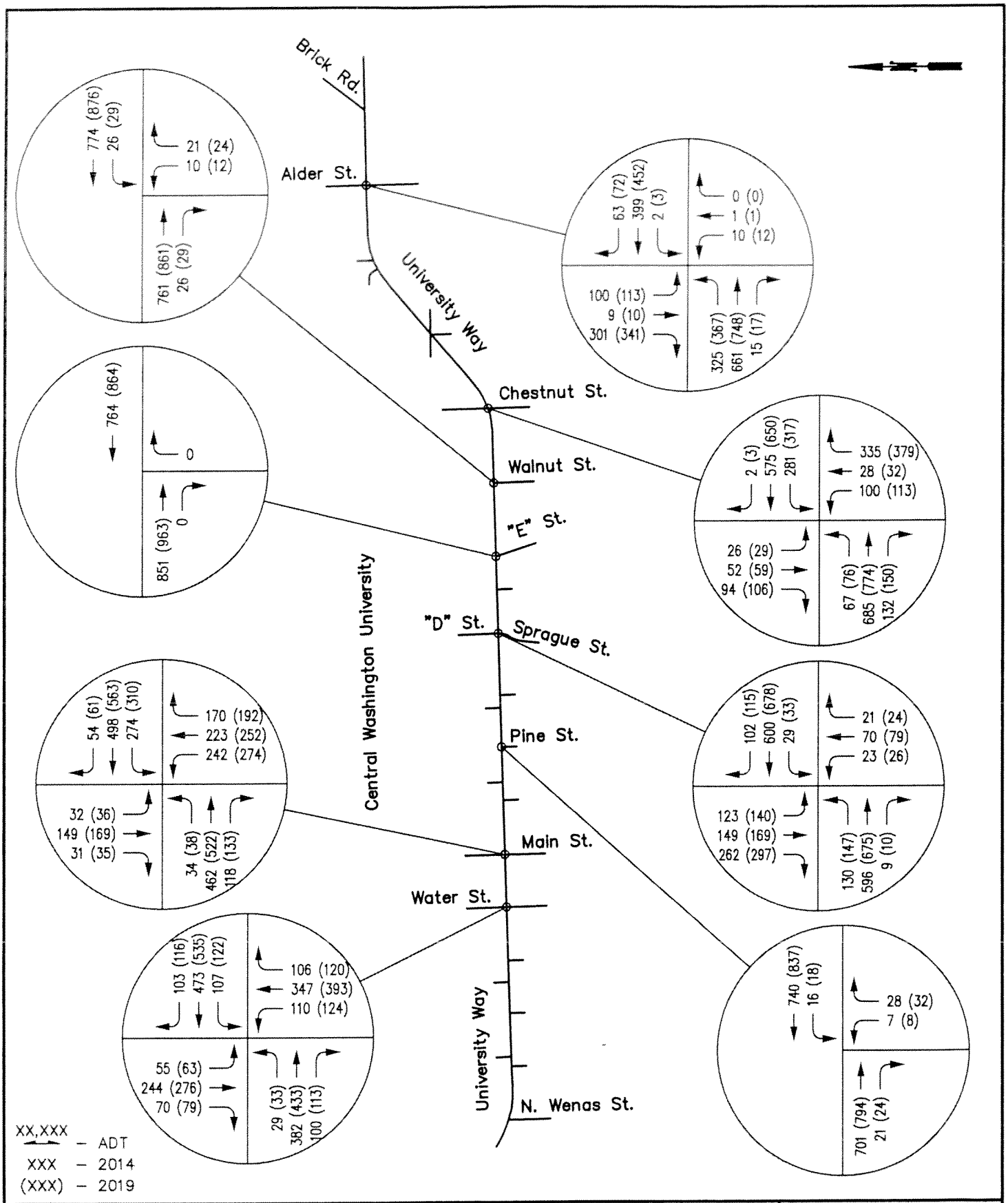
Proposed Plan

The proposed plan includes both the channelization plan and the traffic control plan for the three lane section.

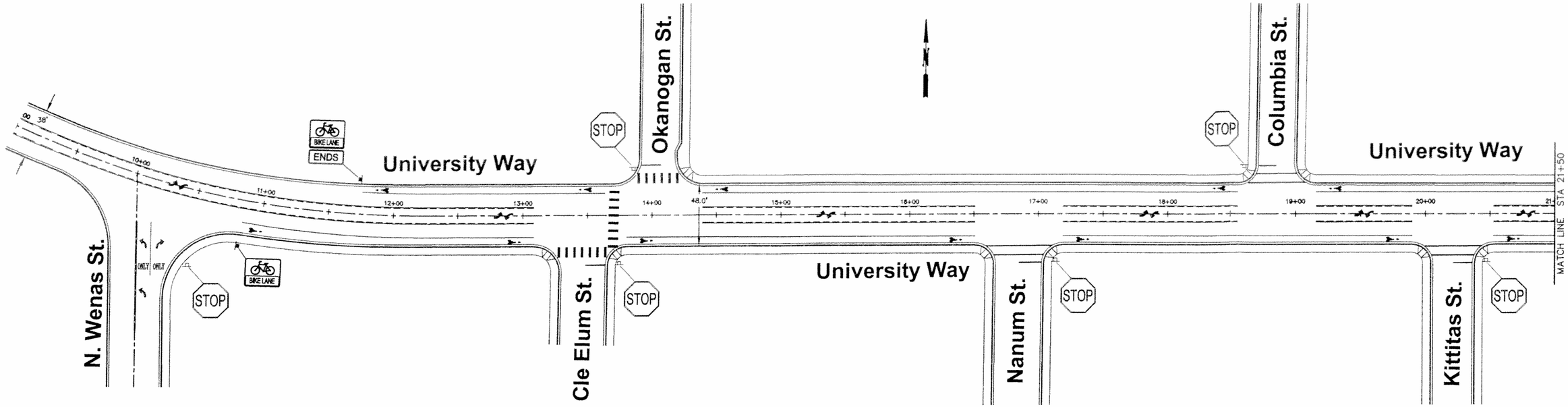
Channelization Plan

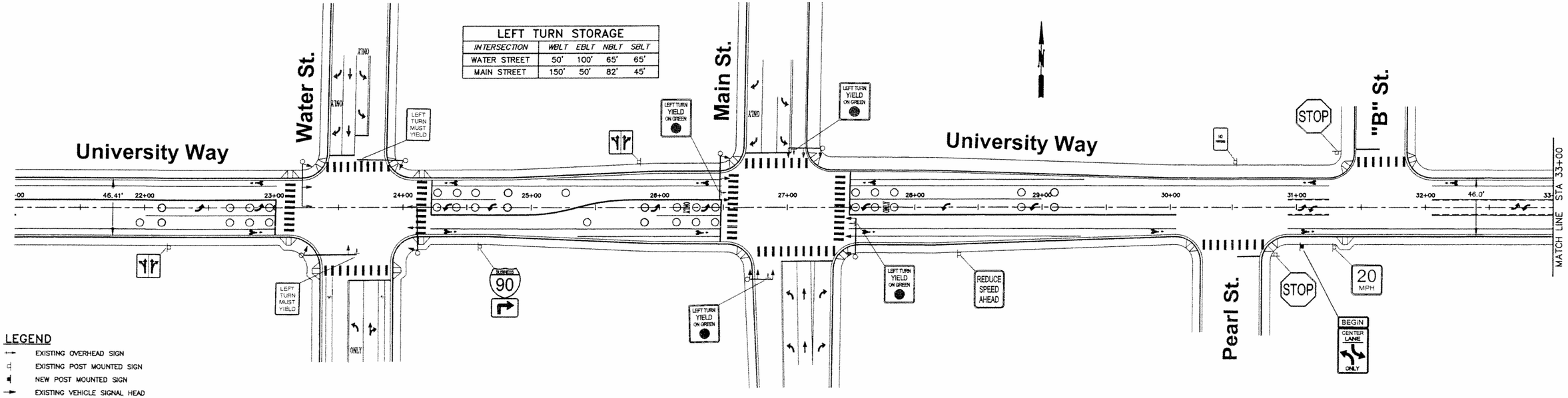
The proposed channelization plan for the three lane configuration is presented in Figure 8. The Washington State Department of Transportation striping detail for a three lane section with a bicycle lane was used as the template for the channelization layout.

The "cross-section" provides for a 12 foot two way left turn left lane which becomes a designated turn pocket at the signalized intersections; two 11 foot travel lanes, one in each direction; and two five (5) foot bike lanes, one in each direction. The designated left turn pockets at the signalized intersections have been sized to accommodate the 95 percentile queues obtained from the level of service analysis discussed above.



DN TRAFFIC CONSULTANTS	FUTURE YEAR TRAFFIC FIGURE 7	UNIVERSITY WAY CHANNELIZATION STUDY





LEFT TURN STORAGE				
INTERSECTION	WBLT	EBLT	NBLT	SBLT
WATER STREET	50'	100'	65'	65'
MAIN STREET	150'	50'	82'	45'

LEGEND

- EXISTING OVERHEAD SIGN
- EXISTING POST MOUNTED SIGN
- NEW POST MOUNTED SIGN
- EXISTING VEHICLE SIGNAL HEAD
- EXISTING SIGNAL POLE
- NEW 6' DIAM. VEHICLE LOOP DETECTOR
- NEW BICYCLE LANE SYMBOL

SCALE: 1" = 40'

Engr.	-	-			
Supervisor	-	-			
Designed By	-	-			
Checked By	G.N.	1/10			
Detailed By	R.A.	1/10			
Project Engr.	-	-			
Preliminary Plan By	R.A.	1/10			
Architect/Specialist:	-	-	REVISIONS	BY	APPR.

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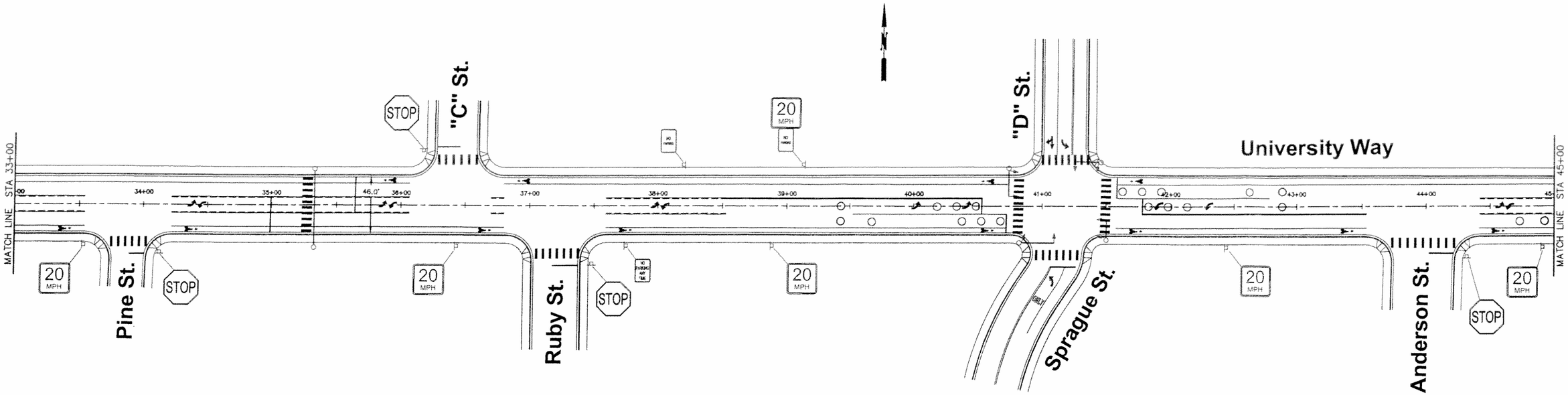
P.O. Box 547 Preston, WA 98050

CITY OF ELLENSBURG

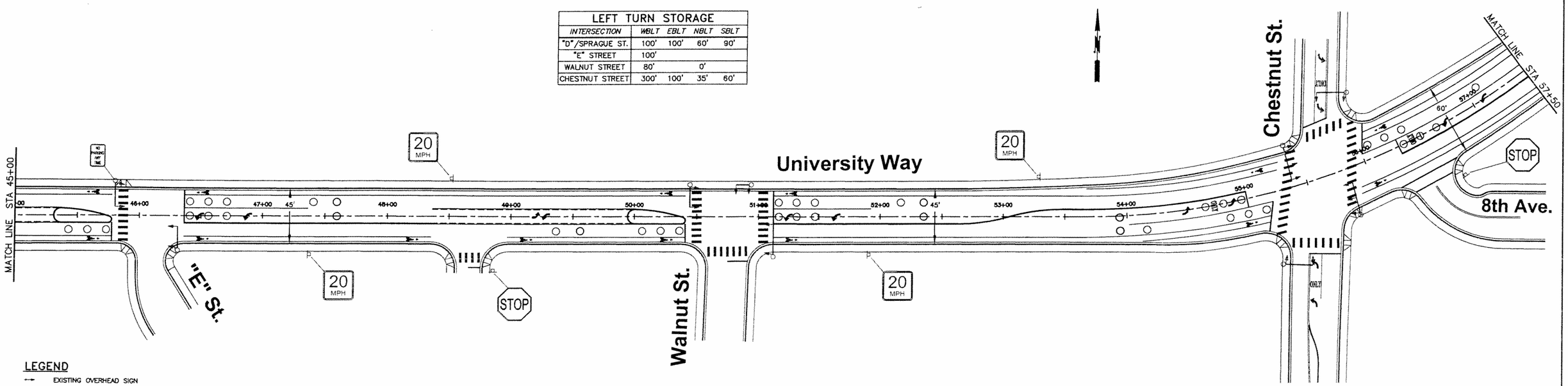
UNIVERSITY WAY CHANNELIZATION STUDY
N. Wenas Street to Brick Road

PROPOSED CHANNELIZATION FIG. 8

SHT 1 OF 3



LEFT TURN STORAGE				
INTERSECTION	WBLT	EBLT	NBLT	SBLT
"D"/SPRAGUE ST.	100'	100'	60'	90'
"E" STREET	100'			
WALNUT STREET	80'		0'	
CHESTNUT STREET	300'	100'	35'	60'



LEGEND

- EXISTING OVERHEAD SIGN
- EXISTING POST MOUNTED SIGN
- NEW POST MOUNTED SIGN
- EXISTING VEHICLE SIGNAL HEAD
- EXISTING SIGNAL POLE
- NEW 6' DIAM. VEHICLE LOOP DETECTOR
- NEW BICYCLE LANE SYMBOL

SCALE: 1" = 40'

20 0 40 80

Bridge Engr.	–	–			
Supervisor	–	–			
Designed By	–	–			
Checked By	G.N.	1/10			
Detailed By	R.A.	1/10			
Bridge Projects Engr.	–	–			
Preliminary Plan By	R.A.	1/10			
Architect/Specialist:	–	–	REVISIONS	BY	APPR.

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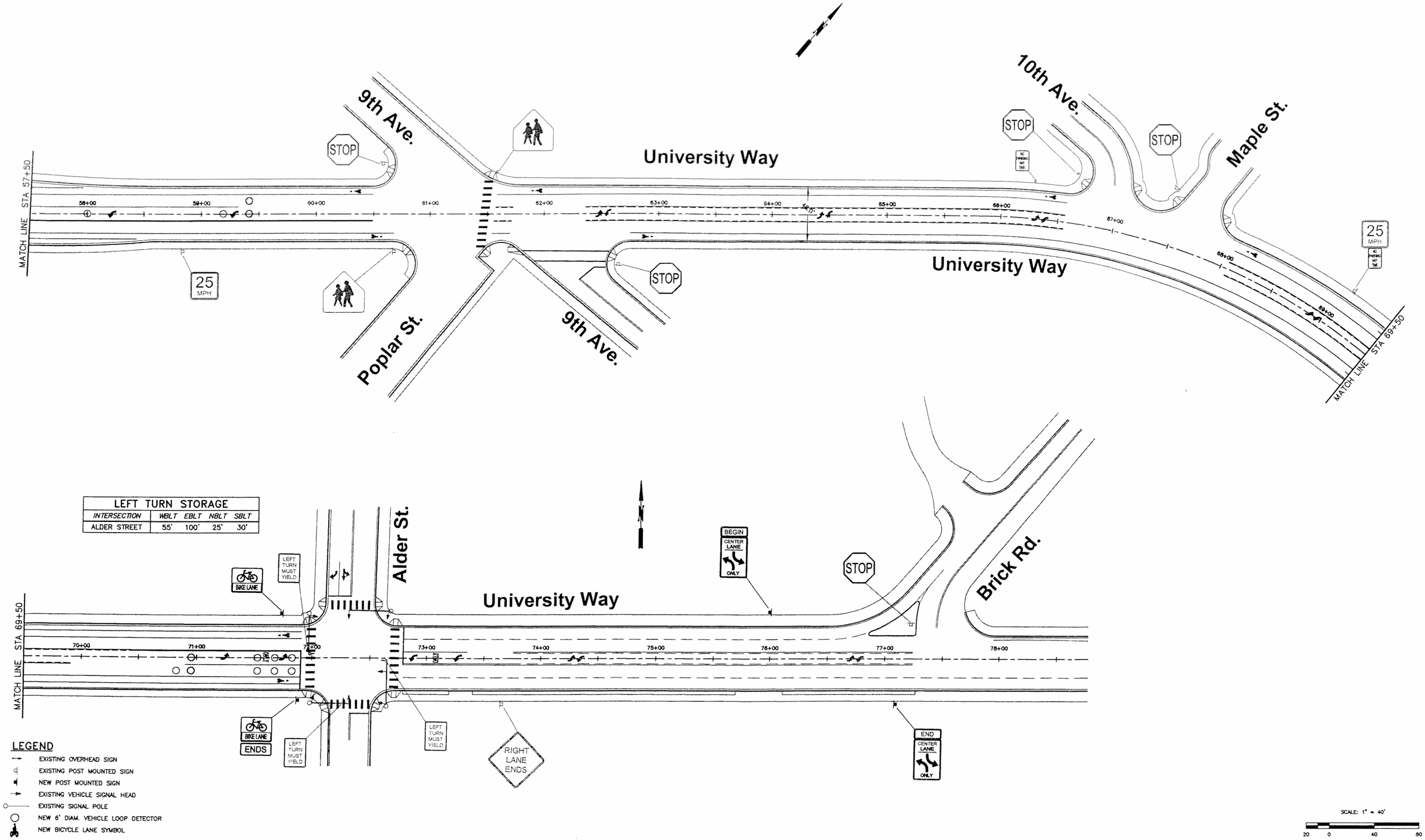
CITY OF ELLENSBURG

UNIVERSITY WAY
CHANNELIZATION STUDY
N. Wenas Street to Brick Road

PROPOSED
CHANNELIZATION
FIG. 8

SHT 2 OF 3



LEFT TURN STORAGE				
INTERSECTION	WBLT	EBLT	NBLT	SBLT
ALDER STREET	55'	100'	25'	30'

...ge Engr.	–	–			
...pervisor	–	–			
...gned By	–	–			
...cked By	G.N.	1/10			
...ailed By	R.A.	1/10			
...ge Projects Engr.	–	–			
...liminary Plan By	R.A.	1/10			
...itect/Specialist	–	–	REVISIONS	BY	APPR.

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CITY OF ELLENSBURG

UNIVERSITY WAY
CHANNELIZATION STUDY
N. Wenas Street to Brick Road

PROPOSED
CHANNELIZATION
FIG. 8

SHT 3 OF 3

The location of the stop bars and crosswalks were adjusted to reflect the turning radii of the design vehicle (SU).

Traffic Control

Current traffic control under the three lane configuration would remain the same as it is today under the four lane configuration. The channelization change however would require a change in the layout of the traffic signal detection. An evaluation was made to determine if the current signal head configuration met the Manual on Uniform Traffic Control Devices (MUTCD) "cone of vision" requirements. Based on this analysis, the vision requirements are met. A summary of the analysis is presented in the Technical Appendix.

New loops would be required at the signalized intersections to reflect the reorientation of the through and left turn lanes. Also, a new signal head would be required as the existing signal head mounted on the pole would lay outside the "cone of vision" under the three lane configuration.

The 2008 Non Motorized Transportation Plan recommended that pedestrian signals be included at the Chestnut Street intersection with "count down" timers.

Cost Estimate

The estimated cost of converting University Way from Wenas Street to Brick Road from a four lane cross-section to a three lane cross section is $256,556.69. The cost includes removing existing striping and restriping the roadway with the three lane configuration; modification of traffic signal detection; additional signing; modifications to the Chestnut Street intersection to include pedestrian displays with "count down" timers and pedestrian detection; traffic control necessary to conduct this work; and preparation of plans and specifications.

A summary of the cost estimate is provided in the Technical Appendix.

IV. Conclusions

The foregoing discussion summarized the results of the evaluation to determine the viability of converting University Way between Wenas Street and Brick Road from a four/five lane cross section to a three lane cross section with bicycle lanes on both sides and a center two way left turn lane.

The analysis considered the impact of the proposed conversion on level of service, reduction of capacity, corridor delay, queuing, travel speed, and collisions. The findings of the study are as follows:

Existing Conditions

Traffic Volumes

- Daily traffic volumes range between 10,000 vehicles per day on the west to 14,000 vehicles per day on the east; and,
- Weekend volumes are approximately 1,000 vehicles per day less than the daily volumes; and,
- Friday PM peak volumes occur earlier than the average weekday PM peak.

Pedestrian and Bicycle Volumes

-

Traffic Signal Operations

- During the PM peak, traffic signals are coordinated at 60 second cycle lengths with the exception of Water Street which is at 70 seconds and Main Street at 80 seconds; and,
- All signals can be optimized under a coordinated cycle length of 65 seconds.

Level of Service

- All intersections currently operate at an acceptable level of service (A or B).
- Natural cycle lengths range from 40 seconds to 70 seconds; and,

Speed and Delay

- Average travel speed and running speed is the same in both directions. The travel speed averages 18 mph whereas the running speed averages 21 mph; and
- The average delay is 5.6 seconds per in the west bound direction and 7.8 seconds in the east bound direction; and,
- The majority of the delay is associated with signal operations with some minor delay related to left turns.

Collision History

- There have bee a total of 69 collisions in the corridor during the last three years; and,

- The highest volume of intersection collisions occurred at the Water Street intersection 20, with 12 at D Street and 10 at Main Street; and
- Of the collisions, 39 percent were "right angle", 17 percent were "rear end" and 16 percent were "left turn; and,
- The collision rate was less than the average rate for similar intersections within the state: and,
- There were 28 mid-block collisions recorded in the corridor during the reporting period. The majority of these collisions (32%) were side swipe.

Conclusions

Based on the data collected it appears the corridor is currently operating in a relatively efficient manner. There is some minor delay associated with signal timings which need to be updated to reflect current volumes. There is currently no level of service deficiencies in the corridor.

In regards to collisions, although the collision rate is significantly below the state wide average for similar intersections, it is believed there are some collision patterns which warrant consideration. This would be the significant number of right angle collisions at signalized intersections. As mentioned, the highest frequency of right angle collisions occurred at Water Street. This City staff however, made some modifications to the signal display which resulted in a dramatic decrease in the number of these types of collisions.

Three Lane Configuration

Traffic Control

- Under the three lane configuration, the signals during the PM peak period would operate at an optimized cycle length of 70 seconds for Main and Water Streets and 90 seconds for the remainder of the corridor; and,
- The natural cycle length for all intersections in the corridor range between 45 seconds and 90 seconds; and,
- The natural cycle length and coordinated cycle length is the same (90 seconds) at the Chestnut Street intersection.

Level of Service

- All intersections operate at an acceptable level of service under the three lane plan; and,
- Level of service however, will decrease at Main Street, D Street, and Walnut Street; and,
- Three intersections: Main Street, D Street, and Alder Street will have approach levels of service which are lower than the City LOS standard; and,
- There is a 45 percent increase in delay at the signalized intersections with the three lane plan.

Queuing

- The 95th percentile queues are significantly longer than under the four lane channelization, particularly at Main and Chestnut Streets; and,
- Main line queues can be accommodated within the extent of the two way left turn lane; and,
- Queuing on the side streets will create the need to extend the left turn pockets at the intersections of Water Street, Main Street, and Chestnut Street.

Measures of Effectiveness

- With implementation of the three lane section, travel delay in the corridor will increase by 48 percent; and,
- Average speed in the corridor will drop from 15 mph to 13 mph; and,
- Gasoline consumption will increase by 11 percent as will carbon emissions.

Collision History

- Although there isn't a significant collision history in the corridor, it is expected that certain types of collisions should be reduced; and,
- Implementation of a designated left turn pocket should decrease the number of "rear end" collisions; and,
- A decrease in the number of conflicting lanes should reduce the number of "right angle" collisions.

Corridor Speed Analysis

- Speed study indicated motorists are comfortable with the existing posted speed as the observed speeds remained consistent.

Impact of Raising Speed Limit to 35 mph

- If the speed limit were raised to 35 mph, delay in the corridor would be reduced under the three lane configuration; and,
- Average speed in the corridor would increase from 13 to 16 mph; and,
- Fuel consumption would increase by three percent; and,
- Vehicles in the dilemma zone would dramatically increase thereby increasing the potential for "rear end" collisions.

Future Growth

- Within five years, it is expected that two of the eight signalized intersections will experience levels of service below the City standard; and,
- Within ten years, the same two intersections will experience failing traffic operations unless significant improvements are made.

Conclusions

Based on the foregoing analysis, it was determined that the proposed three lane configuration is "potentially" viable in the University Way corridor. It is recognized that the conversion will promote bicycling opportunities; improve safety for motorists, bicyclists and pedestrians by reducing the roadway cross section width and eliminate

conflicts with opposing movements. There is however certain adverse conditions which will also be created with the conversion. They include the following:

- Conversion of the roadway to a three lane section will increase overall travel delay in the corridor by approximately 45 percent which results in a significant increase in the cost of fuel, air quality, and wages.
- It has been shown that all of the signalized intersections will operate at an acceptable level of service under the current PM peak hour volume scenario. However, three of the intersections have an approach level of service which is below the City standard and according to current City administrative policy, any new development would be required to mitigate there impact at these locations. This would result in a situation where a developer would be required to reconstruct the side street to provide additional capacity to replace the capacity the City removed as part of this action.
- The proposed action begs the question as to whether the City, through this action, should be allowed to create substandard levels of service on the intersecting side street. Such an action is contrary to the policy applied to the development community which is required to mitigate any adverse impact on an intersection approach which has a level of service below the City standard.
- The analysis shows that within a five year development horizon, two of the eight intersections will have intersection levels of service below the City's standard and that within the ten year development horizon these same intersections will either have failed or be on the edge of failing.
- In light of these facts, is the estimated cost of converting the corridor from four lanes to three lanes, $250,000, worth the limited benefit?

The answer to the question is a policy matter not a technical one. Does the benefit achieved through promoting bicycles and pedestrians outweigh the financial costs as well as the costs associated with the increased delay generated under the three lane configuration? The answer to that question will provide the recommended action.

V. Recommendation

Following the presentation to the City Council on Monday May 3, 2010, the City Council decided not to pursue the three lane option on University Way and directed staff to explore alternatives for east/west traffic flow in a manner consistent with impacts of current and near future (development).

TECHNICAL APPENDIX

- TRAFFIC VOLUMES
- LEVEL OF SERVICE
- QUEUING
- SPEED AND DELAY RESULTS
- COLLISION HISTORY
- SPEED STUDY
- TRAFFIC SIGNAL CONE OF VISION
- COST ESTIMATE

- **TRAFFIC VOLUMES**

Description 1 : University Way
Description 2 : West of Columbia Street
Description 3 :

Site: 341
Date: 9/29/2009
Tuesday

24 Hour Volume (2 channels/pg., 15 min.)

Begin	EB		WB		Combined		Begin	EB		WB		Combined	
12:00 AM	9	18	2	6	11	24	12:00 PM	102	360	99	402	201	762
12:15 AM	3		3		6		12:15 PM	91		109		200	
12:30 AM	3		0		3		12:30 PM	66		101		167	
12:45 AM	3		1		4		12:45 PM	101		93		194	
1:00 AM	5	19	6	11	11	30	1:00 PM	105	333	98	339	203	672
1:15 AM	6		2		8		1:15 PM	76		79		155	
1:30 AM	4		1		5		1:30 PM	78		82		160	
1:45 AM	4		2		6		1:45 PM	74		80		154	
2:00 AM	0	10	3	8	3	18	2:00 PM	65	318	72	327	137	645
2:15 AM	4		3		7		2:15 PM	76		90		166	
2:30 AM	2		0		2		2:30 PM	79		87		166	
2:45 AM	4		2		6		2:45 PM	98		78		176	
3:00 AM	0	10	2	29	2	39	3:00 PM	83	310	77	429	160	739
3:15 AM	2		4		6		3:15 PM	68		130		198	
3:30 AM	2		14		16		3:30 PM	82		103		185	
3:45 AM	6		9		15		3:45 PM	77		119		196	
4:00 AM	3	14	13	39	16	53	4:00 PM	85	347	101	388	186	735
4:15 AM	5		4		9		4:15 PM	93		110		203	
4:30 AM	3		5		8		4:30 PM	88		93		181	
4:45 AM	3		17		20		4:45 PM	81		84		165	
5:00 AM	13	66	18	69	31	135	5:00 PM	100	365	94	412	194	777
5:15 AM	16		15		31		5:15 PM	95		128		223	
5:30 AM	13		17		30		5:30 PM	96		89		185	
5:45 AM	24		19		43		5:45 PM	74		101		175	
6:00 AM	22	130	33	129	55	259	6:00 PM	93	309	92	304	185	613
6:15 AM	23		31		54		6:15 PM	80		75		155	
6:30 AM	28		25		53		6:30 PM	82		83		165	
6:45 AM	57		40		97		6:45 PM	54		54		108	
7:00 AM	46	303	51	215	97	518	7:00 PM	45	164	54	244	99	408
7:15 AM	62		49		111		7:15 PM	59		69		128	
7:30 AM	63		66		129		7:30 PM	21		66		87	
7:45 AM	132		49		181		7:45 PM	39		55		94	
8:00 AM	100	405	64	237	164	642	8:00 PM	35	131	47	203	82	334
8:15 AM	95		62		157		8:15 PM	36		63		99	
8:30 AM	95		59		154		8:30 PM	31		57		88	
8:45 AM	115		52		167		8:45 PM	29		36		65	
9:00 AM	68	280	59	216	127	496	9:00 PM	24	93	37	120	61	213
9:15 AM	68		49		117		9:15 PM	23		35		58	
9:30 AM	74		55		129		9:30 PM	27		25		52	
9:45 AM	70		53		123		9:45 PM	19		23		42	
10:00 AM	64	283	78	287	142	570	10:00 PM	27	61	31	77	58	138
10:15 AM	74		68		142		10:15 PM	12		20		32	
10:30 AM	72		63		135		10:30 PM	8		15		23	
10:45 AM	73		78		151		10:45 PM	14		11		25	
11:00 AM	81	318	74	312	155	630	11:00 PM	9	35	12	36	21	71
11:15 AM	70		88		158		11:15 PM	14		9		23	
11:30 AM	82		71		153		11:30 PM	4		9		13	
11:45 AM	85		79		164		11:45 PM	8		6		14	
Totals													
12 Hours	1856		1558		3414			2826		3281		6107	
	54.4 %		45.6 %					46.3 %		53.7 %			
24 Hours	4682		4839		9521								
	49.2 %		50.8 %										
Peak Hours													
AM	7:45 AM		11:00 AM		7:45 AM		PM	4:45 PM		3:15 PM		5:00 PM	
Volume	422		312		656			372		453		777	
Factor	0.80		0.89		0.91			0.93		0.87		0.87	

File: \\filecity1\users\works\jonesc\TimeMark\VIAS\Data\341_Universityway W of Columbia.rdf

Description 1 : University Way
Description 2 : West of Columbia Street
Description 3 :

Site: 341
Date: 9/30/2009
Wednesday

24 Hour Volume (2 channels/pg., 15 min.)

Begin	EB		WB		Combined		Begin	EB		WB		Combined	
12:00 AM	11	23	5	14	16	37	12:00 PM	80	335	119	404	199	739
12:15 AM	2		4		6		12:15 PM	86		113		199	
12:30 AM	5		1		6		12:30 PM	77		93		170	
12:45 AM	5		4		9		12:45 PM	92		79		171	
1:00 AM	4	18	8	15	12	33	1:00 PM	82	319	102	371	184	690
1:15 AM	9		2		11		1:15 PM	86		94		180	
1:30 AM	4		3		7		1:30 PM	74		83		157	
1:45 AM	1		2		3		1:45 PM	77		92		169	
2:00 AM	2	10	0	13	2	23	2:00 PM	76	304	110	381	186	685
2:15 AM	5		6		11		2:15 PM	67		86		153	
2:30 AM	2		4		6		2:30 PM	70		90		160	
2:45 AM	1		3		4		2:45 PM	91		95		186	
3:00 AM	3	14	4	28	7	42	3:00 PM	94	354	91	403	185	757
3:15 AM	5		5		10		3:15 PM	96		110		206	
3:30 AM	2		9		11		3:30 PM	83		108		191	
3:45 AM	4		10		14		3:45 PM	81		94		175	
4:00 AM	5	19	9	41	14	60	4:00 PM	76	368	95	393	171	761
4:15 AM	4		7		11		4:15 PM	99		94		193	
4:30 AM	2		5		7		4:30 PM	104		106		210	
4:45 AM	8		20		28		4:45 PM	89		98		187	
5:00 AM	15	61	13	63	28	124	5:00 PM	77	359	111	458	188	817
5:15 AM	14		5		19		5:15 PM	86		123		209	
5:30 AM	15		21		36		5:30 PM	107		125		232	
5:45 AM	17		24		41		5:45 PM	89		99		188	
6:00 AM	19	134	18	112	37	246	6:00 PM	81	317	92	351	173	668
6:15 AM	24		27		51		6:15 PM	65		83		148	
6:30 AM	33		35		68		6:30 PM	89		83		172	
6:45 AM	58		32		90		6:45 PM	82		93		175	
7:00 AM	44	302	47	214	91	516	7:00 PM	65	221	76	247	141	468
7:15 AM	48		58		106		7:15 PM	47		72		119	
7:30 AM	97		57		154		7:30 PM	42		56		98	
7:45 AM	113		52		165		7:45 PM	67		43		110	
8:00 AM	105	398	72	254	177	652	8:00 PM	31	123	61	205	92	328
8:15 AM	93		62		155		8:15 PM	35		50		85	
8:30 AM	92		64		156		8:30 PM	34		39		73	
8:45 AM	108		56		164		8:45 PM	23		55		78	
9:00 AM	73	296	47	212	120	508	9:00 PM	30	93	39	122	69	215
9:15 AM	62		55		117		9:15 PM	24		35		59	
9:30 AM	72		53		125		9:30 PM	15		34		49	
9:45 AM	89		57		146		9:45 PM	24		14		38	
10:00 AM	72	266	63	252	135	518	10:00 PM	23	76	15	75	38	151
10:15 AM	50		58		108		10:15 PM	17		31		48	
10:30 AM	68		60		128		10:30 PM	26		21		47	
10:45 AM	76		71		147		10:45 PM	10		8		18	
11:00 AM	69	286	78	294	147	580	11:00 PM	21	56	11	41	32	97
11:15 AM	64		73		137		11:15 PM	14		13		27	
11:30 AM	69		77		146		11:30 PM	10		8		18	
11:45 AM	84		66		150		11:45 PM	11		9		20	
Totals													
12 Hours	1827		1512		3339			2925		3451		6376	
	54.7 %		45.3 %					45.9 %		54.1 %			
24 Hours	4752		4963		9715								
	48.9 %		51.1 %										
Peak Hours													
AM	7:30 AM		10:45 AM		7:45 AM		PM	4:15 PM		5:00 PM		5:00 PM	
Volume	408		299		653			369		458		817	
Factor	0.90		0.96		0.92			0.89		0.92		0.88	

File: \\filecity1\users\works\jonesc\TimeMark\VIAS\Data\341_Universityway W of Columbia.rdf

City of Ellensburg

Description 1 : University Way
Description 2 : West of Columbia Street
Description 3 :

Site: 341
Date: 9/29/2009
Tuesday

24 Hour Vehicle Classification (60 Min., Combined)
Combined Channels

Time	Total	Bike	Cars Trailer	2 Axle Long	Buses	2 Axle 6 Tire	3 Axle Single	4 Axle Single	<5 Ax Doubl	5 Axle Doubl	>6 Ax Doubl	<6 Ax Multi	6 Axle Multi	>6 Ax Multi
12:00 AM	24	0	12	7	1	2	1	0	0	1	0	0	0	0
1:00 AM	30	0	19	6	0	3	1	0	0	0	0	0	0	1
2:00 AM	18	0	9	3	0	5	0	0	0	0	0	0	0	1
3:00 AM	39	0	26	4	0	6	0	0	0	0	0	0	1	2
4:00 AM	53	0	26	14	0	10	1	0	0	0	0	0	0	2
5:00 AM	185	1	59	37	1	32	0	0	2	1	1	1	0	0
6:00 AM	259	0	105	85	0	59	1	0	4	5	0	0	0	0
7:00 AM	518	5	241	162	10	85	2	0	8	3	0	1	0	1
8:00 AM	642	10	276	218	6	97	1	0	25	6	0	2	0	1
9:00 AM	496	9	208	145	12	89	2	0	10	4	0	1	0	1
10:00 AM	570	2	251	195	8	92	5	3	9	3	0	2	0	0
11:00 AM	630	9	276	199	6	115	3	2	9	7	1	1	0	2
12:00 PM	762	6	373	224	13	123	1	0	17	1	4	0	0	0
1:00 PM	672	13	320	196	12	106	3	1	16	0	4	1	0	0
2:00 PM	645	7	296	177	15	118	4	1	20	3	0	3	1	0
3:00 PM	739	11	347	225	10	105	3	0	25	3	2	4	0	0
4:00 PM	735	10	364	215	9	116	2	0	14	2	1	2	0	0
5:00 PM	777	14	385	236	17	100	2	0	18	0	3	0	0	3
6:00 PM	613	4	329	186	7	67	0	0	14	1	1	1	0	3
7:00 PM	408	10	221	119	4	45	2	0	6	0	0	1	0	0
8:00 PM	334	1	194	97	3	32	0	0	5	0	0	0	0	2
9:00 PM	213	4	147	48	0	10	0	0	3	0	0	0	0	1
10:00 PM	138	0	97	24	0	16	0	0	0	0	0	1	0	0
11:00 PM	71	1	44	16	2	8	2	0	1	1	0	0	0	0
Total	9521	112	4645	2838	140	1435	35	7	207	41	17	22	2	20
%		1.2	48.8	29.8	1.5	15.1	0.4	0.1	2.2	0.4	0.2	0.2	0.0	0.2

City of Ellensburg

Description 1 : University Way
Description 2 : West of Columbia Street
Description 3 :

Site: 341
Date: 9/30/2009
Wednesday

24 Hour Vehicle Classification (60 Min., Combined)
Combined Channels

Time	Total	Bike	Cars Trailer	2 Axle Long	Buses	2 Axle 6 Tire	3 Axle Single	4 Axle Single	<5 Ax Doubl	5 Axle Doubl	>6 Ax Doubl	<6 Ax Multi	6 Axle Multi	>6 Ax Multi
12:00 AM	37	0	22	6	1	6	0	0	2	0	0	0	0	0
1:00 AM	30	0	18	5	3	1	0	0	0	0	0	0	1	0
2:00 AM	23	0	11	6	0	1	0	0	0	0	3	0	0	2
3:00 AM	42	0	22	7	0	7	0	6	2	3	2	0	1	1
4:00 AM	60	0	24	18	1	14	0	0	2	0	0	0	0	1
5:00 AM	124	1	46	45	1	26	2	0	1	2	0	1	0	1
6:00 AM	246	0	107	66	4	56	2	0	2	7	1	0	0	1
7:00 AM	516	6	224	158	11	90	3	1	10	1	2	6	0	4
8:00 AM	652	2	299	209	12	104	2	0	12	7	0	3	0	2
9:00 AM	508	6	233	167	6	75	6	0	16	5	1	0	0	2
10:00 AM	518	4	248	172	5	59	5	0	12	6	2	4	0	1
11:00 AM	580	4	276	179	5	80	3	0	24	4	5	0	0	2
12:00 PM	739	13	342	213	10	124	3	0	21	2	5	4	0	2
1:00 PM	690	8	334	210	10	95	2	1	16	1	1	2	0	0
2:00 PM	685	5	335	199	6	109	1	1	25	2	2	0	0	0
3:00 PM	757	8	346	230	18	123	3	1	20	1	2	2	0	2
4:00 PM	761	10	382	217	22	98	1	2	23	2	1	3	0	0
5:00 PM	810	13	430	218	20	109	1	0	18	0	2	5	0	1
6:00 PM	668	7	369	182	8	74	1	0	13	5	4	3	0	2
7:00 PM	468	4	267	130	1	48	1	0	5	3	0	1	0	0
8:00 PM	328	2	201	93	0	24	1	0	5	0	0	0	0	2
9:00 PM	205	2	127	60	1	10	1	0	3	0	0	1	0	0
10:00 PM	151	0	96	42	0	11	0	0	1	0	1	0	0	0
11:00 PM	97	0	53	34	1	7	0	0	0	1	0	0	0	0
Total	9715	96	4823	2854	146	1363	38	6	242	52	31	36	2	26
%		1.0	49.6	29.4	1.5	14.0	0.4	0.1	2.5	0.5	0.3	0.4	0.0	0.3

Description 1 : University Way
Description 2 : East of Anderson St
Description 3 :

Site: 342
Date: 9/29/2009
Tuesday

24 Hour Volume (2 channels/pg., 15 min.)

Begin	EB		WB		Combined		Begin	EB		WB		Combined	
12:00 AM	7	17	5	14	12	31	12:00 PM	126	449	89	402	215	851
12:15 AM	8		3		11		12:15 PM	92		104		196	
12:30 AM	2		2		4		12:30 PM	108		94		202	
12:45 AM	0		4		4		12:45 PM	123		115		238	
1:00 AM	2	17	2	7	4	24	1:00 PM	95	372	102	415	197	787
1:15 AM	7		1		8		1:15 PM	86		108		194	
1:30 AM	4		0		4		1:30 PM	88		106		194	
1:45 AM	4		4		8		1:45 PM	103		99		202	
2:00 AM	3	9	1	7	4	16	2:00 PM	103	441	108	426	211	867
2:15 AM	2		1		3		2:15 PM	113		97		210	
2:30 AM	3		2		5		2:30 PM	101		111		212	
2:45 AM	1		3		4		2:45 PM	124		110		234	
3:00 AM	3	8	5	31	8	39	3:00 PM	93	421	144	542	237	963
3:15 AM	2		9		11		3:15 PM	109		164		273	
3:30 AM	2		8		10		3:30 PM	116		126		242	
3:45 AM	1		9		10		3:45 PM	103		108		211	
4:00 AM	4	18	5	46	9	64	4:00 PM	119	482	104	409	223	891
4:15 AM	7		6		13		4:15 PM	109		101		210	
4:30 AM	3		13		16		4:30 PM	128		92		220	
4:45 AM	4		22		26		4:45 PM	126		112		238	
5:00 AM	8	47	14	78	22	125	5:00 PM	163	540	103	429	266	969
5:15 AM	8		13		21		5:15 PM	141		111		252	
5:30 AM	13		20		33		5:30 PM	138		110		248	
5:45 AM	18		31		49		5:45 PM	98		105		203	
6:00 AM	12	97	32	164	44	261	6:00 PM	108	403	83	350	191	753
6:15 AM	23		26		49		6:15 PM	108		99		207	
6:30 AM	23		41		64		6:30 PM	97		85		182	
6:45 AM	39		65		104		6:45 PM	90		83		173	
7:00 AM	34	258	52	304	86	562	7:00 PM	89	328	76	301	165	629
7:15 AM	53		68		121		7:15 PM	92		74		166	
7:30 AM	64		90		154		7:30 PM	68		79		147	
7:45 AM	107		94		201		7:45 PM	79		72		151	
8:00 AM	59	324	92	339	151	663	8:00 PM	59	223	66	244	125	467
8:15 AM	83		86		169		8:15 PM	51		70		121	
8:30 AM	98		85		183		8:30 PM	68		52		120	
8:45 AM	84		76		160		8:45 PM	45		56		101	
9:00 AM	65	300	71	295	136	595	9:00 PM	39	155	42	162	81	317
9:15 AM	71		63		134		9:15 PM	44		47		91	
9:30 AM	73		65		138		9:30 PM	34		40		74	
9:45 AM	91		96		187		9:45 PM	38		33		71	
10:00 AM	75	340	89	344	164	684	10:00 PM	36	104	29	101	65	205
10:15 AM	83		85		168		10:15 PM	32		23		55	
10:30 AM	90		83		173		10:30 PM	20		28		48	
10:45 AM	92		87		179		10:45 PM	16		21		37	
11:00 AM	84	364	83	349	167	713	11:00 PM	30	87	17	48	47	135
11:15 AM	86		77		163		11:15 PM	19		11		30	
11:30 AM	79		82		161		11:30 PM	16		8		24	
11:45 AM	115		107		222		11:45 PM	22		12		34	
Totals													
12 Hours	1799		1978		3777			4005		3829		7834	
	47.6 %		52.4 %					51.1 %		48.9 %			
24 Hours	5804		5807		11611								
	50.0 %		50.0 %										
Peak Hours													
AM	11:00 AM		7:30 AM		11:00 AM		PM	4:45 PM		2:45 PM		4:45 PM	
Volume	364		362		713			568		544		1004	
Factor	0.79		0.96		0.80			0.87		0.83		0.94	

File: \\filecity1\users\works\jonesc\TimeMark\VIAS\Data\342_UniversityWay E of Anderson.rdf

Description 1 : University Way
Description 2 : East of Anderson St
Description 3 :

Site: 342
Date: 9/30/2009
Wednesday

24 Hour Volume (2 channels/pg., 15 min.)

Begin	EB		WB		Combined		Begin	EB		WB		Combined	
12:00 AM	10	23	7	23	17	46	12:00 PM	104	394	117	413	221	807
12:15 AM	4		8		12		12:15 PM	94		91		185	
12:30 AM	6		2		8		12:30 PM	108		95		203	
12:45 AM	3		6		9		12:45 PM	88		110		198	
1:00 AM	3	17	2	8	5	25	1:00 PM	94	368	115	430	209	798
1:15 AM	7		2		9		1:15 PM	80		97		177	
1:30 AM	5		1		6		1:30 PM	93		106		199	
1:45 AM	2		3		5		1:45 PM	101		112		213	
2:00 AM	1	7	3	11	4	18	2:00 PM	106	403	100	421	206	824
2:15 AM	1		3		4		2:15 PM	83		111		194	
2:30 AM	2		2		4		2:30 PM	94		111		205	
2:45 AM	3		3		6		2:45 PM	120		99		219	
3:00 AM	2	11	5	35	7	46	3:00 PM	105	454	119	441	224	895
3:15 AM	6		6		12		3:15 PM	132		110		242	
3:30 AM	2		9		11		3:30 PM	96		112		208	
3:45 AM	1		15		16		3:45 PM	121		100		221	
4:00 AM	3	18	5	49	8	67	4:00 PM	115	444	103	463	218	907
4:15 AM	5		7		12		4:15 PM	101		117		218	
4:30 AM	7		11		18		4:30 PM	114		123		237	
4:45 AM	3		26		29		4:45 PM	114		120		234	
5:00 AM	16	59	14	78	30	137	5:00 PM	169	518	120	452	289	970
5:15 AM	9		14		23		5:15 PM	120		121		241	
5:30 AM	14		22		36		5:30 PM	130		98		228	
5:45 AM	20		28		48		5:45 PM	99		113		212	
6:00 AM	19	118	25	174	44	292	6:00 PM	126	443	98	373	224	816
6:15 AM	26		32		58		6:15 PM	101		103		204	
6:30 AM	23		53		76		6:30 PM	108		72		180	
6:45 AM	50		64		114		6:45 PM	108		100		208	
7:00 AM	32	261	57	338	89	599	7:00 PM	95	327	87	297	182	624
7:15 AM	47		80		127		7:15 PM	78		82		160	
7:30 AM	84		84		168		7:30 PM	69		63		132	
7:45 AM	98		117		215		7:45 PM	85		65		150	
8:00 AM	81	340	104	368	185	708	8:00 PM	78	279	69	237	147	516
8:15 AM	90		88		178		8:15 PM	62		47		109	
8:30 AM	85		89		174		8:30 PM	62		71		133	
8:45 AM	84		87		171		8:45 PM	77		50		127	
9:00 AM	64	298	62	300	126	598	9:00 PM	60	175	46	149	106	324
9:15 AM	69		66		135		9:15 PM	43		49		92	
9:30 AM	79		71		150		9:30 PM	32		28		60	
9:45 AM	86		101		187		9:45 PM	40		26		66	
10:00 AM	74	320	85	321	159	641	10:00 PM	44	132	37	126	81	258
10:15 AM	69		62		131		10:15 PM	42		40		82	
10:30 AM	92		84		176		10:30 PM	26		24		50	
10:45 AM	85		90		175		10:45 PM	20		25		45	
11:00 AM	80	378	106	381	186	759	11:00 PM	35	79	25	69	60	148
11:15 AM	89		79		168		11:15 PM	13		13		26	
11:30 AM	103		101		204		11:30 PM	13		17		30	
11:45 AM	106		95		201		11:45 PM	18		14		32	
Totals													
12 Hours	1850		2086		3936			4016		3871		7887	
	47.0 %		53.0 %					50.9 %		49.1 %			
24 Hours	5866		5957		11823								
	49.6 %		50.4 %										
Peak Hours													
AM	11:00 AM		7:45 AM		11:00 AM		PM	4:45 PM		4:30 PM		4:30 PM	
Volume	378		398		759			533		484		1001	
Factor	0.89		0.85		0.93			0.79		0.98		0.87	

File: \\fileclty1\users\works\Jonesc\TimeMark\VIAS\Data\342_UniversityWay E of Anderson.rdf

Description 1 : University Way
Description 2 : East of Anderson St
Description 3 :

Site: 342
Date: 9/29/2009
Tuesday

24 Hour Vehicle Classification (60 Min., Combined)
Combined Channels

Time	Total	Bike	Cars Trailer	2 Axle Long	Buses	2 Axle 6 Tire	3 Axle Single	4 Axle Single	<5 Ax Doubl	5 Axle Doubl	>6 Ax Doubl	<6 Ax Multi	6 Axle Multi	>6 Ax Multi
12:00 AM	31	0	15	12	0	4	0	0	0	0	0	0	0	0
1:00 AM	22	0	10	9	0	2	0	0	0	0	0	0	0	0
2:00 AM	16	0	9	5	0	2	0	0	0	0	0	0	0	0
3:00 AM	39	0	23	9	0	4	0	0	0	0	0	0	1	2
4:00 AM	64	0	28	21	0	15	0	0	0	0	0	0	0	0
5:00 AM	125	0	51	41	1	29	0	0	2	0	1	0	0	0
6:00 AM	261	0	106	96	1	43	1	0	8	3	0	3	0	0
7:00 AM	562	6	218	190	15	87	3	0	24	1	0	12	0	5
8:00 AM	663	10	241	224	15	104	6	0	47	3	0	11	0	2
9:00 AM	595	5	252	190	17	94	3	1	19	5	1	7	0	1
10:00 AM	684	10	267	240	11	109	4	0	28	5	1	9	0	0
11:00 AM	715	13	262	256	18	104	3	1	39	4	1	11	0	1
12:00 PM	851	18	340	267	26	112	3	4	53	4	3	17	2	2
1:00 PM	787	22	345	248	24	101	3	1	38	0	0	10	1	4
2:00 PM	867	20	361	281	18	124	5	2	35	5	0	16	0	0
3:00 PM	963	25	373	295	33	146	1	5	52	6	2	17	0	0
4:00 PM	891	18	364	298	26	111	1	0	51	2	0	19	0	1
5:00 PM	969	20	418	318	28	96	3	0	70	2	0	15	0	3
6:00 PM	753	8	327	260	18	83	3	0	37	3	2	9	0	3
7:00 PM	629	10	321	204	9	55	3	0	16	1	0	9	0	1
8:00 PM	467	0	235	176	1	34	1	0	15	0	0	3	0	2
9:00 PM	347	3	177	106	2	19	1	0	8	0	0	0	0	1
10:00 PM	205	1	114	68	0	20	0	0	1	1	0	0	0	0
11:00 PM	135	0	68	54	1	10	0	0	0	0	0	0	0	0
Total	11611	189	4917	3860	265	1509	55	14	543	45	11	168	4	31
%		1.6	42.3	33.2	2.3	13.0	0.5	0.1	4.7	0.4	0.1	1.4	0.0	0.3

City of [illegible]ensburg

Description 1 : University Way
Description 2 : East of Anderson St
Description 3 :

Site: 342
Date: 9/30/2009
Wednesday

24 Hour Vehicle Classification (60 Min., Combined)
Combined Channels

Time	Total	Bike	Cars Trailer	2 Axle Long	Buses	2 Axle 6 Tire	3 Axle Single	4 Axle Single	<5 Ax Doubl	5 Axle Doubl	>6 Ax Doubl	<6 Ax Multi	6 Axle Multi	>6 Ax Multi
12:00 AM	46	0	23	12	1	9	0	0	1	0	0	0	0	0
1:00 AM	25	0	11	11	0	2	0	0	0	0	0	0	0	1
2:00 AM	18	0	8	5	0	1	0	0	0	0	2	0	0	2
3:00 AM	46	0	21	14	0	6	0	0	1	1	1	0	1	1
4:00 AM	67	0	21	23	2	18	0	0	1	1	0	1	0	0
5:00 AM	137	0	55	45	1	33	0	0	1	2	0	0	0	0
6:00 AM	292	0	109	108	4	57	2	0	7	2	2	1	0	0
7:00 AM	599	2	238	198	5	94	4	0	28	7	5	14	0	2
8:00 AM	708	8	284	249	19	97	1	0	28	4	0	15	0	3
9:00 AM	598	7	236	196	11	99	4	2	30	8	0	12	1	7
10:00 AM	641	13	261	212	18	93	5	1	21	4	4	7	0	2
11:00 AM	759	12	335	232	15	110	2	1	26	5	2	15	1	4
12:00 PM	807	15	316	267	20	117	4	0	45	3	1	14	2	3
1:00 PM	798	6	342	260	25	89	7	3	58	1	0	5	0	1
2:00 PM	824	15	368	263	20	102	2	3	37	1	0	10	0	3
3:00 PM	895	17	387	305	28	89	6	2	41	4	1	10	0	2
4:00 PM	907	12	365	315	22	102	3	1	58	4	0	21	1	3
5:00 PM	970	12	428	324	26	106	6	2	45	3	3	11	1	3
6:00 PM	816	16	345	277	14	109	2	0	36	0	4	10	0	3
7:00 PM	624	2	288	218	7	66	3	0	34	1	0	4	0	1
8:00 PM	516	7	262	184	1	43	0	0	14	0	0	5	0	0
9:00 PM	324	3	162	122	2	22	0	0	9	0	1	6	0	0
10:00 PM	258	2	146	84	2	17	0	0	5	0	1	1	0	0
11:00 PM	148	3	73	60	0	11	0	0	0	0	0	0	0	0
Total	11823	162	5084	3984	253	1492	51	15	527	42	23	142	7	41
%		1.4	43.0	33.7	2.1	12.6	0.4	0.1	4.5	0.4	0.2	1.2	0.1	0.3

File: \\filecity1\users\works\jonesc\TimeMark\VIAS\Data\342_UniversityWay E of Anderson.rdf

Description 1 : University Way
Description 2 : East of Poplar Street
Description 3 :

Site: 343
Date: 9/29/2009
Tuesday

24 Hour Volume (2 channels/pg., 15 min.)

Begin	EB		WB		Combined		Begin	EB		WB		Combined	
12:00 AM	20	37	8	19	28	56	12:00 PM	152	536	115	488	267	1024
12:15 AM	6		5		11		12:15 PM	133		117		250	
12:30 AM	9		2		11		12:30 PM	111		122		233	
12:45 AM	2		4		6		12:45 PM	140		134		274	
1:00 AM	2	15	2	13	4	28	1:00 PM	143	460	124	489	267	949
1:15 AM	8		2		10		1:15 PM	103		125		228	
1:30 AM	3		3		6		1:30 PM	98		118		216	
1:45 AM	2		6		8		1:45 PM	116		122		238	
2:00 AM	3	8	3	7	6	15	2:00 PM	127	485	115	494	242	979
2:15 AM	1		0		1		2:15 PM	110		113		223	
2:30 AM	2		2		4		2:30 PM	121		130		251	
2:45 AM	2		2		4		2:45 PM	127		136		263	
3:00 AM	3	9	2	32	5	41	3:00 PM	136	578	120	539	256	1117
3:15 AM	3		9		12		3:15 PM	152		158		310	
3:30 AM	3		12		15		3:30 PM	148		139		287	
3:45 AM	0		9		9		3:45 PM	142		122		264	
4:00 AM	3	17	5	45	8	62	4:00 PM	132	574	130	471	262	1045
4:15 AM	7		4		11		4:15 PM	140		110		250	
4:30 AM	4		14		18		4:30 PM	153		122		275	
4:45 AM	3		22		25		4:45 PM	149		109		258	
5:00 AM	4	43	12	92	16	135	5:00 PM	199	687	111	461	310	1148
5:15 AM	5		20		25		5:15 PM	188		111		299	
5:30 AM	14		21		35		5:30 PM	156		114		270	
5:45 AM	20		39		59		5:45 PM	144		125		269	
6:00 AM	20	114	34	199	54	313	6:00 PM	129	528	108	445	237	973
6:15 AM	19		29		48		6:15 PM	130		123		253	
6:30 AM	32		57		89		6:30 PM	133		110		243	
6:45 AM	43		79		122		6:45 PM	136		104		240	
7:00 AM	44	221	72	439	116	660	7:00 PM	122	450	88	318	210	768
7:15 AM	49		93		142		7:15 PM	121		82		203	
7:30 AM	55		102		157		7:30 PM	99		76		175	
7:45 AM	73		172		245		7:45 PM	108		72		180	
8:00 AM	71	383	147	504	218	887	8:00 PM	105	310	55	242	160	552
8:15 AM	99		134		233		8:15 PM	68		75		143	
8:30 AM	106		123		229		8:30 PM	74		56		130	
8:45 AM	107		100		207		8:45 PM	63		56		119	
9:00 AM	76	290	93	387	169	677	9:00 PM	67	204	61	210	128	414
9:15 AM	59		85		144		9:15 PM	49		50		99	
9:30 AM	79		83		162		9:30 PM	56		52		108	
9:45 AM	76		126		202		9:45 PM	32		47		79	
10:00 AM	80	366	125	448	205	814	10:00 PM	39	144	34	100	73	244
10:15 AM	95		98		193		10:15 PM	37		29		66	
10:30 AM	90		101		191		10:30 PM	32		19		51	
10:45 AM	101		124		225		10:45 PM	36		18		54	
11:00 AM	94	424	105	452	199	876	11:00 PM	24	93	17	55	41	148
11:15 AM	98		122		220		11:15 PM	29		17		46	
11:30 AM	103		111		214		11:30 PM	19		10		29	
11:45 AM	129		114		243		11:45 PM	21		11		32	
Totals													
12 Hours	1927		2637		4564			5049		4312		9361	
	42.2 %		57.8 %					53.9 %		46.1 %			
24 Hours	6976		6949		13925								
	50.1 %		49.9 %										
Peak Hours													
AM	11:00 AM		7:45 AM		7:45 AM		PM	4:45 PM		2:45 PM		5:00 PM	
Volume	424		576		925			692		553		1148	
Factor	0.82		0.84		0.94			0.87		0.88		0.93	

File: \\fileity1\users\works\jonesc\TimeMark\VIAS\Data\343_Universityway E of Poplar.rdf

Description 1 : University Way
Description 2 : East of Poplar Street
Description 3 :

Site: 343
Date: 9/30/2009
Wednesday

24 Hour Volume (2 channels/pg., 15 min.)

Begin	EB		WB		Combined		Begin	EB		WB		Combined	
12:00 AM	17	36	10	25	27	61	12:00 PM	136	497	126	425	262	922
12:15 AM	8		6		14		12:15 PM	128		94		222	
12:30 AM	4		3		7		12:30 PM	107		86		193	
12:45 AM	7		6		13		12:45 PM	126		119		245	
1:00 AM	3	15	3	11	6	26	1:00 PM	117	434	139	528	256	962
1:15 AM	5		2		7		1:15 PM	114		129		243	
1:30 AM	6		3		9		1:30 PM	90		126		216	
1:45 AM	1		3		4		1:45 PM	113		134		247	
2:00 AM	2	9	3	12	5	21	2:00 PM	125	473	122	491	247	964
2:15 AM	1		2		3		2:15 PM	111		115		226	
2:30 AM	4		3		7		2:30 PM	122		120		242	
2:45 AM	2		4		6		2:45 PM	115		134		249	
3:00 AM	0	9	3	30	3	39	3:00 PM	137	583	135	515	272	1098
3:15 AM	5		5		10		3:15 PM	158		107		265	
3:30 AM	3		8		11		3:30 PM	149		137		286	
3:45 AM	1		14		15		3:45 PM	139		136		275	
4:00 AM	4	22	8	54	12	76	4:00 PM	127	577	133	475	260	1052
4:15 AM	4		9		13		4:15 PM	141		124		265	
4:30 AM	6		11		17		4:30 PM	160		106		266	
4:45 AM	8		26		34		4:45 PM	149		112		261	
5:00 AM	9	56	16	87	25	143	5:00 PM	173	671	138	517	311	1188
5:15 AM	13		22		35		5:15 PM	196		123		319	
5:30 AM	17		18		35		5:30 PM	151		118		269	
5:45 AM	17		31		48		5:45 PM	151		138		289	
6:00 AM	20	111	32	212	52	323	6:00 PM	143	556	108	420	251	976
6:15 AM	30		35		65		6:15 PM	141		104		245	
6:30 AM	18		48		66		6:30 PM	141		97		238	
6:45 AM	43		97		140		6:45 PM	131		111		242	
7:00 AM	52	213	85	475	137	688	7:00 PM	112	409	104	339	216	748
7:15 AM	42		95		137		7:15 PM	96		83		179	
7:30 AM	49		124		173		7:30 PM	110		68		178	
7:45 AM	70		171		241		7:45 PM	91		84		175	
8:00 AM	72	353	137	477	209	830	8:00 PM	102	343	68	243	170	586
8:15 AM	79		113		192		8:15 PM	84		55		139	
8:30 AM	104		110		214		8:30 PM	71		59		130	
8:45 AM	98		117		215		8:45 PM	86		61		147	
9:00 AM	62	314	111	413	173	727	9:00 PM	61	206	57	186	118	392
9:15 AM	79		79		158		9:15 PM	59		59		118	
9:30 AM	90		103		193		9:30 PM	40		41		81	
9:45 AM	83		120		203		9:45 PM	46		29		75	
10:00 AM	100	368	103	395	203	763	10:00 PM	46	167	31	113	77	280
10:15 AM	82		80		162		10:15 PM	50		38		88	
10:30 AM	99		94		193		10:30 PM	43		25		68	
10:45 AM	87		118		205		10:45 PM	28		19		47	
11:00 AM	79	413	121	451	200	864	11:00 PM	49	112	26	69	75	181
11:15 AM	108		102		210		11:15 PM	25		15		40	
11:30 AM	114		115		229		11:30 PM	16		10		26	
11:45 AM	112		113		225		11:45 PM	22		18		40	
Totals													
12 Hours	1919		2642		4561			5028		4321		9349	
	42.1 %		57.9 %					53.8 %		46.2 %			
24 Hours	6947		6963		13910								
	49.9 %		50.1 %										
Peak Hours													
AM	11:00 AM		7:30 AM		11:00 AM		PM	4:30 PM		3:30 PM		5:00 PM	
Volume	413		545		864			678		530		1188	
Factor	0.91		0.80		0.94			0.86		0.97		0.93	

File: \\filecity1\users\works\jonesc\TimeMark\VIAS\Data\343_Universityway E of Poplar.rdf

Description 1 : University Way
Description 2 : East of Poplar Street
Description 3 :

Site: 343
Date: 9/29/2009
Tuesday

24 Hour Vehicle Classification (60 Min., Combined)
Combined Channels

Time	Total	Bike	Cars Trailer	2 Axle Long	Buses	2 Axle 6 Tire	3 Axle Single	4 Axle Single	<5 Ax Doubl	5 Axle Doubl	>6 Ax Doubl	<6 Ax Multi	6 Axle Multi	>6 Ax Multi
12:00 AM	56	0	44	8	0	2	2	0	0	0	0	0	0	0
1:00 AM	28	0	18	7	0	0	0	0	0	0	2	0	0	1
2:00 AM	15	0	14	0	0	1	0	0	0	0	0	0	0	0
3:00 AM	41	0	30	5	0	3	0	0	0	0	0	0	1	2
4:00 AM	62	0	39	17	0	6	0	0	0	0	0	0	0	0
5:00 AM	135	0	84	39	0	10	1	0	0	0	1	0	0	0
6:00 AM	313	1	198	89	1	16	2	0	2	2	0	2	0	0
7:00 AM	660	5	440	142	14	27	7	2	24	1	1	2	0	0
8:00 AM	887	11	605	174	10	41	3	0	36	3	2	2	0	0
9:00 AM	677	8	431	165	13	32	3	0	20	4	0	0	0	1
10:00 AM	814	11	541	168	21	39	3	4	25	1	0	1	0	0
11:00 AM	876	14	569	189	14	50	3	0	28	2	1	4	0	2
12:00 PM	1024	12	705	185	26	39	3	2	44	0	2	4	0	2
1:00 PM	949	18	639	204	18	31	3	1	30	1	1	2	0	1
2:00 PM	979	19	657	174	25	44	8	2	43	2	0	4	1	0
3:00 PM	1117	26	747	196	35	56	5	1	37	3	3	5	0	3
4:00 PM	1045	16	722	198	19	43	4	2	37	1	1	1	0	1
5:00 PM	1118	13	788	190	17	39	5	0	48	1	2	9	0	6
6:00 PM	973	17	696	166	17	29	2	1	36	1	2	4	0	2
7:00 PM	768	9	596	118	5	22	3	0	18	0	0	1	0	0
8:00 PM	552	2	442	71	5	15	0	0	14	0	0	1	0	2
9:00 PM	419	0	342	51	0	11	0	0	8	0	0	1	0	1
10:00 PM	244	0	214	24	0	5	0	0	1	0	0	0	0	0
11:00 PM	138	0	124	7	0	5	0	0	1	1	0	0	0	0
Total	13925	180	9685	2592	271	566	57	15	449	23	18	43	2	24
%		1.3	69.6	18.6	1.9	4.1	0.4	0.1	3.2	0.2	0.1	0.3	0.0	0.2

City of [illegible]nsburg

Description 1 : University Way
Description 2 : East of Poplar Street
Description 3 :

Site: 343
Date: 9/30/2009
Wednesday

24 Hour Vehicle Classification (60 Min., Combined)
Combined Channels

Time	Total	Bike	Cars Trailer	2 Axle Long	Buses	2 Axle 6 Tire	3 Axle Single	4 Axle Single	<5 Ax Doubl	5 Axle Doubl	>6 Ax Doubl	<6 Ax Multi	6 Axle Multi	>6 Ax Multi
12:00 AM	61	0	43	12	0	4	2	0	0	0	0	0	0	0
1:00 AM	26	0	20	6	0	0	0	0	0	0	0	0	0	0
2:00 AM	21	0	15	1	0	0	0	0	0	0	2	0	0	3
3:00 AM	39	0	28	4	0	2	0	0	1	1	1	0	1	1
4:00 AM	76	0	39	24	2	10	0	0	0	1	0	0	0	0
5:00 AM	143	0	84	48	1	8	1	0	1	0	0	0	0	0
6:00 AM	323	1	196	90	2	17	7	0	4	5	1	0	0	0
7:00 AM	688	4	450	149	12	41	4	1	20	1	2	2	0	2
8:00 AM	830	15	548	162	20	40	3	0	28	5	2	6	0	1
9:00 AM	727	17	472	177	5	36	3	0	18	6	0	1	0	0
10:00 AM	763	13	498	156	15	41	8	0	26	4	1	0	0	1
11:00 AM	864	8	582	164	13	40	4	1	50	4	4	4	0	3
12:00 PM	922	14	613	174	27	44	6	1	30	3	4	4	1	1
1:00 PM	962	9	671	175	20	42	1	1	34	2	0	4	0	0
2:00 PM	964	14	652	189	23	38	2	0	42	2	1	1	0	0
3:00 PM	1098	11	767	172	42	38	6	1	46	3	2	4	0	1
4:00 PM	1052	21	707	185	31	52	2	3	45	2	1	2	0	1
5:00 PM	1188	16	843	201	28	38	8	2	48	0	0	6	0	2
6:00 PM	976	16	705	145	18	36	3	1	44	2	0	2	1	3
7:00 PM	748	9	563	112	10	27	2	0	19	1	0	3	0	1
8:00 PM	586	1	467	82	9	13	1	0	12	0	0	1	0	0
9:00 PM	352	2	336	4	3	2	0	0	4	0	0	0	0	0
10:00 PM	280	3	230	34	1	4	0	0	6	0	2	0	0	0
11:00 PM	181	0	150	18	0	6	0	0	3	1	0	0	0	0
Total	13910	162	9680	2528	287	584	61	11	463	43	25	40	3	23
%		1.2	69.6	18.2	2.1	4.2	0.4	0.1	3.3	0.3	0.2	0.3	0.0	0.2

City of Ellensburg

Description 1 : University Way
Description 2 : West of Columbia Street
Description 3 :

Site: 341
Date: 10/3/2009
Saturday

24 Hour Volume (2 channels/pg., 15 min.)

Begin	EB		WB		Combined		Begin	EB		WB		Combined	
12:00 AM	26	71	15	67	41	138	12:00 PM	98	398	105	350	203	748
12:15 AM	20		29		49		12:15 PM	100		71		171	
12:30 AM	18		13		31		12:30 PM	91		82		173	
12:45 AM	7		10		17		12:45 PM	109		92		201	
1:00 AM	17	45	8	35	25	80	1:00 PM	103	369	110	397	213	766
1:15 AM	7		9		16		1:15 PM	88		97		185	
1:30 AM	6		11		17		1:30 PM	96		87		183	
1:45 AM	15		7		22		1:45 PM	82		103		185	
2:00 AM	7	17	9	32	16	49	2:00 PM	82	300	92	377	174	677
2:15 AM	4		10		14		2:15 PM	78		94		172	
2:30 AM	3		4		7		2:30 PM	71		87		158	
2:45 AM	3		9		12		2:45 PM	69		104		173	
3:00 AM	5	21	4	20	9	41	3:00 PM	56	283	79	349	135	632
3:15 AM	5		6		11		3:15 PM	70		100		170	
3:30 AM	5		8		13		3:30 PM	78		87		165	
3:45 AM	6		2		8		3:45 PM	79		83		162	
4:00 AM	8	24	4	24	12	48	4:00 PM	57	250	99	398	156	648
4:15 AM	4		8		12		4:15 PM	63		92		155	
4:30 AM	5		3		8		4:30 PM	70		115		185	
4:45 AM	7		9		16		4:45 PM	60		92		152	
5:00 AM	10	46	9	34	19	80	5:00 PM	82	293	89	314	171	607
5:15 AM	11		5		16		5:15 PM	66		86		152	
5:30 AM	12		10		22		5:30 PM	67		62		129	
5:45 AM	13		10		23		5:45 PM	78		77		155	
6:00 AM	13	56	13	71	26	127	6:00 PM	67	281	74	287	141	568
6:15 AM	12		21		33		6:15 PM	62		76		138	
6:30 AM	13		18		31		6:30 PM	88		76		164	
6:45 AM	18		19		37		6:45 PM	64		61		125	
7:00 AM	14	100	17	125	31	225	7:00 PM	60	217	80	250	140	467
7:15 AM	18		26		44		7:15 PM	55		63		118	
7:30 AM	25		33		58		7:30 PM	46		49		95	
7:45 AM	43		49		92		7:45 PM	56		58		114	
8:00 AM	57	216	31	189	88	405	8:00 PM	51	174	33	160	84	334
8:15 AM	42		47		89		8:15 PM	42		43		85	
8:30 AM	47		47		94		8:30 PM	34		42		76	
8:45 AM	70		64		134		8:45 PM	47		42		89	
9:00 AM	64	301	60	288	124	589	9:00 PM	40	140	48	168	88	308
9:15 AM	70		69		139		9:15 PM	35		53		88	
9:30 AM	75		87		162		9:30 PM	34		34		68	
9:45 AM	92		72		164		9:45 PM	31		33		64	
10:00 AM	73	383	89	325	162	708	10:00 PM	34	87	35	103	69	190
10:15 AM	106		74		180		10:15 PM	16		25		41	
10:30 AM	108		73		181		10:30 PM	17		24		41	
10:45 AM	96		89		185		10:45 PM	20		19		39	
11:00 AM	114	405	86	354	200	759	11:00 PM	24	77	21	69	45	146
11:15 AM	88		80		168		11:15 PM	14		19		33	
11:30 AM	97		99		196		11:30 PM	16		14		30	
11:45 AM	106		89		195		11:45 PM	23		15		38	
Totals													
12 Hours	1685		1564		3249			2869		3222		6091	
	51.9 %		48.1 %					47.1 %		52.9 %			
24 Hours	4554		4786		9340								
	48.8 %		51.2 %										
Peak Hours													
AM	10:15 AM		10:45 AM		11:00 AM		PM	12:15 PM		4:00 PM		12:45 PM	
Volume	424		354		759			403		398		782	
Factor	0.93		0.89		0.95			0.92		0.87		0.92	

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City of Ellensburg

Description 1 : University Way
Description 2 : West of Columbia Street
Description 3 :

Site: 341
Date: 10/4/2009
Sunday

24 Hour Volume (2 channels/pg., 15 min.)

Begin	EB		WB		Combined		Begin	EB		WB		Combined	
12:00 AM	12	52	12	45	24	97	12:00 PM	70	291	83	343	153	634
12:15 AM	11		9		20		12:15 PM	77		89		166	
12:30 AM	16		10		26		12:30 PM	65		92		157	
12:45 AM	13		14		27		12:45 PM	79		79		158	
1:00 AM	5	31	4	26	9	57	1:00 PM	79	311	87	345	166	656
1:15 AM	9		7		16		1:15 PM	78		90		168	
1:30 AM	10		6		16		1:30 PM	77		83		160	
1:45 AM	7		9		16		1:45 PM	77		85		162	
2:00 AM	1	13	4	20	5	33	2:00 PM	81	270	90	311	171	581
2:15 AM	5		4		9		2:15 PM	63		78		141	
2:30 AM	5		8		13		2:30 PM	69		78		147	
2:45 AM	2		4		6		2:45 PM	57		65		122	
3:00 AM	0	14	4	18	4	32	3:00 PM	87	302	65	295	152	597
3:15 AM	8		4		12		3:15 PM	74		71		145	
3:30 AM	3		6		9		3:30 PM	71		91		162	
3:45 AM	3		4		7		3:45 PM	70		68		138	
4:00 AM	3	9	2	14	5	23	4:00 PM	73	310	79	293	152	603
4:15 AM	3		2		5		4:15 PM	77		73		150	
4:30 AM	2		6		8		4:30 PM	71		79		150	
4:45 AM	1		4		5		4:45 PM	89		62		151	
5:00 AM	11	33	7	26	18	59	5:00 PM	82	346	59	256	141	602
5:15 AM	8		4		12		5:15 PM	87		62		149	
5:30 AM	7		7		14		5:30 PM	80		59		139	
5:45 AM	7		8		15		5:45 PM	97		76		173	
6:00 AM	5	25	2	31	7	56	6:00 PM	79	337	73	262	152	599
6:15 AM	8		11		19		6:15 PM	90		63		153	
6:30 AM	5		9		14		6:30 PM	78		62		140	
6:45 AM	7		9		16		6:45 PM	90		64		154	
7:00 AM	5	57	15	64	20	121	7:00 PM	80	267	52	212	132	479
7:15 AM	14		16		30		7:15 PM	71		55		126	
7:30 AM	14		15		29		7:30 PM	53		63		116	
7:45 AM	24		18		42		7:45 PM	63		42		105	
8:00 AM	33	136	28	112	61	248	8:00 PM	61	204	40	182	101	386
8:15 AM	24		35		59		8:15 PM	51		40		91	
8:30 AM	34		27		61		8:30 PM	46		52		98	
8:45 AM	45		22		67		8:45 PM	46		50		96	
9:00 AM	41	211	29	205	70	416	9:00 PM	50	160	32	118	82	278
9:15 AM	38		56		94		9:15 PM	38		32		70	
9:30 AM	65		59		124		9:30 PM	33		29		62	
9:45 AM	67		61		128		9:45 PM	39		25		64	
10:00 AM	59	236	60	240	119	476	10:00 PM	32	100	21	76	53	176
10:15 AM	49		63		112		10:15 PM	22		21		43	
10:30 AM	62		50		112		10:30 PM	35		16		51	
10:45 AM	66		67		133		10:45 PM	11		18		29	
11:00 AM	70	269	68	297	138	566	11:00 PM	27	82	14	31	41	113
11:15 AM	61		69		130		11:15 PM	17		9		26	
11:30 AM	57		78		135		11:30 PM	24		4		28	
11:45 AM	81		82		163		11:45 PM	14		4		18	
Totals													
12 Hours	1086		1098		2184			2980		2724		5704	
	49.7 %		50.3 %					52.2 %		47.8 %			
24 Hours	4066		3822		7888								
	51.5 %		48.5 %										
Peak Hours													
AM	11:00 AM		11:00 AM		11:00 AM		PM	5:00 PM		12:30 PM		1:15 PM	
Volume	269		297		566			346		348		661	
Factor	0.83		0.91		0.87			0.89		0.95		0.97	

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City of Ellensburg

Description 1 : University Way
Description 2 : West of Columbia Street
Description 3 :

Site: 341
Date: 10/3/2009
Saturday

24 Hour Vehicle Classification (60 Min., Combined)
Combined Channels

Time	Total	Bike	Cars Trailer	2 Axle Long	Buses	2 Axle 6 Tire	3 Axle Single	4 Axle Single	<5 Ax Doubl	5 Axle Doubl	>6 Ax Doubl	<6 Ax Multi	6 Axle Multi	>6 Ax Multi
12:00 AM	138	1	89	33	0	12	0	0	3	0	0	0	0	0
1:00 AM	80	0	49	23	0	8	0	0	0	0	0	0	0	0
2:00 AM	49	0	25	15	2	6	0	0	1	0	0	0	0	0
3:00 AM	21	0	2	9	0	8	0	0	0	0	0	0	0	0
4:00 AM	48	0	27	7	0	10	0	0	2	0	2	0	0	0
5:00 AM	80	1	32	28	1	17	0	0	0	0	0	0	0	0
6:00 AM	127	0	65	36	1	23	0	0	1	0	0	1	0	0
7:00 AM	225	3	95	80	2	32	1	0	11	0	0	1	0	0
8:00 AM	405	1	208	125	3	54	1	0	8	0	2	1	0	2
9:00 AM	589	5	288	176	5	96	2	0	10	2	0	4	0	0
10:00 AM	708	7	359	207	13	97	1	0	18	1	1	4	0	0
11:00 AM	759	11	381	232	12	105	1	0	15	1	0	3	0	0
12:00 PM	748	11	367	229	16	99	2	0	19	0	1	4	0	0
1:00 PM	766	13	388	212	20	108	0	0	22	0	2	1	0	0
2:00 PM	677	10	342	210	11	82	0	0	21	1	0	0	0	0
3:00 PM	652	7	338	187	11	68	0	0	6	0	0	3	0	0
4:00 PM	648	9	358	188	6	63	0	0	19	1	1	3	0	0
5:00 PM	607	9	351	168	8	52	2	0	13	1	0	2	0	0
6:00 PM	568	3	318	149	9	67	0	0	18	2	0	2	0	0
7:00 PM	467	3	266	129	5	51	0	0	7	0	0	3	0	0
8:00 PM	334	2	191	82	6	45	0	0	7	0	0	1	0	0
9:00 PM	308	2	203	76	1	25	0	0	1	0	0	0	0	0
10:00 PM	190	1	126	39	1	22	0	0	1	0	0	0	0	0
11:00 PM	146	0	91	38	1	16	0	0	0	0	0	0	0	0
Total	9340	100	4981	2680	135	1162	11	0	218	9	9	33	0	2
%		1.1	53.3	28.7	1.4	12.4	0.1	0.0	2.3	0.1	0.1	0.4	0.0	0.0

City of Ellensburg

Description 1 : University Way
Description 2 : West of Columbia Street
Description 3 :

Site: 341
Date: 10/4/2009
Sunday

24 Hour Vehicle Classification (60 Min., Combined)
Combined Channels

Time	Total	Bike	Cars Trailer	2 Axle Long	Buses	2 Axle 6 Tire	3 Axle Single	4 Axle Single	<5 Ax Doubl	5 Axle Doubl	>6 Ax Doubl	<6 Ax Multi	6 Axle Multi	>6 Ax Multi
12:00 AM	97	0	66	19	1	10	0	0	1	0	0	0	0	0
1:00 AM	57	0	36	15	0	5	0	0	0	0	0	0	0	0
2:00 AM	33	0	23	8	0	2	0	0	0	0	0	0	0	0
3:00 AM	32	0	20	6	0	5	0	0	1	0	0	0	0	0
4:00 AM	23	0	12	10	0	1	0	0	0	0	0	0	0	0
5:00 AM	59	0	38	11	0	10	0	0	0	0	0	0	0	0
6:00 AM	56	1	30	16	1	6	0	0	1	1	0	0	0	0
7:00 AM	121	0	70	35	0	12	0	0	1	0	0	0	0	0
8:00 AM	248	0	118	89	0	37	0	0	3	1	0	0	0	0
9:00 AM	416	1	208	155	1	56	1	0	10	0	0	0	0	0
10:00 AM	476	2	235	158	1	66	3	0	9	0	0	2	0	0
11:00 AM	565	8	328	163	7	38	1	1	21	6	0	1	0	0
12:00 PM	634	6	371	171	4	63	0	0	19	0	0	0	0	0
1:00 PM	656	5	365	170	4	89	1	0	20	0	0	6	0	0
2:00 PM	581	6	314	159	6	69	1	0	23	0	0	3	0	0
3:00 PM	597	10	328	171	7	59	0	0	20	0	0	1	1	0
4:00 PM	603	7	350	164	6	51	2	0	17	0	0	4	0	2
5:00 PM	602	5	351	175	6	50	1	0	13	0	0	0	1	0
6:00 PM	599	3	366	144	6	71	0	0	7	1	0	0	0	1
7:00 PM	479	6	294	131	2	38	1	0	8	0	1	2	0	1
8:00 PM	386	3	240	91	3	36	2	0	7	2	0	2	0	0
9:00 PM	278	0	185	64	1	20	0	0	8	0	0	0	0	0
10:00 PM	176	1	115	48	1	9	0	0	2	0	0	0	0	0
11:00 PM	115	2	73	27	0	5	0	0	3	2	0	0	0	0
Total	7888	67	4529	2179	57	812	13	1	194	10	2	18	2	4
%		0.8	57.4	27.6	0.7	10.3	0.2	0.0	2.5	0.1	0.0	0.2	0.0	0.1

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City of Ellensburg

Description 1 : University Way
Description 2 : East of Anderson Street
Description 3 :

Site: 342
Date: 10/3/2009
Saturday

24 Hour Volume (2 channels/pg., 15 min.)

Begin	EB		WB		Combined		Begin	EB		WB		Combined	
12:00 AM	34	95	33	88	67	183	12:00 PM	123	435	115	442	238	877
12:15 AM	30		23		53		12:15 PM	109		89		198	
12:30 AM	16		16		32		12:30 PM	90		118		208	
12:45 AM	15		16		31		12:45 PM	113		120		233	
1:00 AM	19	75	13	42	32	117	1:00 PM	108	414	89	352	197	766
1:15 AM	17		11		28		1:15 PM	112		70		182	
1:30 AM	24		8		32		1:30 PM	103		92		195	
1:45 AM	15		10		25		1:45 PM	91		101		192	
2:00 AM	11	34	5	20	16	54	2:00 PM	102	358	101	378	203	736
2:15 AM	13		6		19		2:15 PM	72		92		164	
2:30 AM	3		8		11		2:30 PM	93		94		187	
2:45 AM	7		1		8		2:45 PM	91		91		182	
3:00 AM	5	17	4	17	9	34	3:00 PM	94	358	83	374	177	732
3:15 AM	6		5		11		3:15 PM	82		102		184	
3:30 AM	4		4		8		3:30 PM	96		83		179	
3:45 AM	2		4		6		3:45 PM	86		106		192	
4:00 AM	3	18	7	26	10	44	4:00 PM	87	360	91	372	178	732
4:15 AM	6		3		9		4:15 PM	93		93		186	
4:30 AM	4		5		9		4:30 PM	89		100		189	
4:45 AM	5		11		16		4:45 PM	91		88		179	
5:00 AM	7	32	2	33	9	65	5:00 PM	79	380	110	396	189	776
5:15 AM	11		10		21		5:15 PM	110		96		206	
5:30 AM	4		6		10		5:30 PM	93		96		189	
5:45 AM	10		15		25		5:45 PM	98		94		192	
6:00 AM	9	37	15	68	24	105	6:00 PM	104	387	87	352	191	739
6:15 AM	7		18		25		6:15 PM	108		83		191	
6:30 AM	9		16		25		6:30 PM	86		95		181	
6:45 AM	12		19		31		6:45 PM	89		87		176	
7:00 AM	16	104	20	141	36	245	7:00 PM	80	291	80	243	160	534
7:15 AM	18		30		48		7:15 PM	69		58		127	
7:30 AM	20		42		62		7:30 PM	73		60		133	
7:45 AM	50		49		99		7:45 PM	69		45		114	
8:00 AM	39	214	52	261	91	475	8:00 PM	74	240	54	233	128	473
8:15 AM	54		59		113		8:15 PM	53		48		101	
8:30 AM	47		66		113		8:30 PM	54		54		108	
8:45 AM	74		84		158		8:45 PM	59		77		136	
9:00 AM	73	289	87	369	160	658	9:00 PM	56	203	62	180	118	383
9:15 AM	68		101		169		9:15 PM	44		41		85	
9:30 AM	73		86		159		9:30 PM	51		40		91	
9:45 AM	75		95		170		9:45 PM	52		37		89	
10:00 AM	92	383	94	351	186	734	10:00 PM	33	126	37	136	70	262
10:15 AM	100		78		178		10:15 PM	23		38		61	
10:30 AM	81		98		179		10:30 PM	36		31		67	
10:45 AM	110		81		191		10:45 PM	34		30		64	
11:00 AM	106	394	92	419	198	813	11:00 PM	39	120	25	102	64	222
11:15 AM	97		106		203		11:15 PM	28		34		62	
11:30 AM	90		109		199		11:30 PM	27		20		47	
11:45 AM	101		112		213		11:45 PM	26		23		49	
Totals													
12 Hours	1692		1835		3527			3672		3560		7232	
	48.0 %		52.0 %					50.8 %		49.2 %			
24 Hours	5364		5395		10759								
	49.9 %		50.1 %										
Peak Hours													
AM	10:45 AM		11:00 AM		11:00 AM		PM	12:45 PM		12:00 PM		12:00 PM	
Volume	403		419		813			436		442		877	
Factor	0.92		0.94		0.95			0.96		0.92		0.92	

File: \\filecity1\users\works\jonesc\TimeMark\VIAS\Data\342_UniversityWay E of Anderson 10-5-09.rdf

City of Ellensburg

Description 1 : University Way
Description 2 : East of Anderson Street
Description 3 :

Site: 342
Date: 10/4/2009
Sunday

24 Hour Volume (2 channels/pg., 15 min.)

Begin	EB		WB		Combined		Begin	EB		WB		Combined	
12:00 AM	22	89	22	59	44	148	12:00 PM	78	361	114	413	192	774
12:15 AM	20		13		33		12:15 PM	92		103		195	
12:30 AM	21		11		32		12:30 PM	99		101		200	
12:45 AM	26		13		39		12:45 PM	92		95		187	
1:00 AM	20	69	12	42	32	111	1:00 PM	96	357	91	356	187	713
1:15 AM	15		16		31		1:15 PM	98		102		200	
1:30 AM	12		8		20		1:30 PM	89		94		183	
1:45 AM	22		6		28		1:45 PM	74		69		143	
2:00 AM	16	34	6	19	22	53	2:00 PM	104	385	63	304	167	689
2:15 AM	11		6		17		2:15 PM	93		86		179	
2:30 AM	6		4		10		2:30 PM	92		73		165	
2:45 AM	1		3		4		2:45 PM	96		82		178	
3:00 AM	2	11	3	17	5	28	3:00 PM	80	357	97	368	177	725
3:15 AM	2		5		7		3:15 PM	104		101		205	
3:30 AM	4		5		9		3:30 PM	88		84		172	
3:45 AM	3		4		7		3:45 PM	85		86		171	
4:00 AM	3	10	3	19	6	29	4:00 PM	94	373	78	333	172	706
4:15 AM	2		5		7		4:15 PM	79		83		162	
4:30 AM	1		2		3		4:30 PM	90		83		173	
4:45 AM	4		9		13		4:45 PM	110		89		199	
5:00 AM	3	23	1	27	4	50	5:00 PM	87	391	74	301	161	692
5:15 AM	6		6		12		5:15 PM	89		54		143	
5:30 AM	6		6		12		5:30 PM	105		80		185	
5:45 AM	8		14		22		5:45 PM	110		93		203	
6:00 AM	1	20	7	30	8	50	6:00 PM	85	349	77	290	162	639
6:15 AM	7		9		16		6:15 PM	71		69		140	
6:30 AM	3		6		9		6:30 PM	103		71		174	
6:45 AM	9		8		17		6:45 PM	90		73		163	
7:00 AM	11	66	14	76	25	142	7:00 PM	80	303	68	234	148	537
7:15 AM	11		13		24		7:15 PM	62		56		118	
7:30 AM	14		29		43		7:30 PM	89		64		153	
7:45 AM	30		20		50		7:45 PM	72		46		118	
8:00 AM	21	124	32	142	53	266	8:00 PM	91	268	56	233	147	501
8:15 AM	23		29		52		8:15 PM	58		53		111	
8:30 AM	36		34		70		8:30 PM	63		67		130	
8:45 AM	44		47		91		8:45 PM	56		57		113	
9:00 AM	43	214	62	263	105	477	9:00 PM	65	188	44	139	109	327
9:15 AM	47		57		104		9:15 PM	42		45		87	
9:30 AM	51		80		131		9:30 PM	38		26		64	
9:45 AM	73		64		137		9:45 PM	43		24		67	
10:00 AM	68	274	82	289	150	563	10:00 PM	37	126	27	79	64	205
10:15 AM	68		54		122		10:15 PM	37		15		52	
10:30 AM	69		81		150		10:30 PM	33		14		47	
10:45 AM	69		72		141		10:45 PM	19		23		42	
11:00 AM	85	315	65	300	150	615	11:00 PM	24	83	13	38	37	121
11:15 AM	64		74		138		11:15 PM	17		8		25	
11:30 AM	85		75		160		11:30 PM	23		4		27	
11:45 AM	81		86		167		11:45 PM	19		13		32	
Totals													
12 Hours	1249		1283		2532			3541		3088		6629	
	49.3 %		50.7 %					53.4 %		46.6 %			
24 Hours	4790		4371		9161								
	52.3 %		47.7 %										
Peak Hours													
AM	11:00 AM		11:00 AM		11:00 AM		PM	4:45 PM		12:00 PM		12:00 PM	
Volume	315		300		615			391		413		774	
Factor	0.93		0.87		0.92			0.89		0.91		0.97	

File: \\filecity1\users\works\jonesc\TimeMark\VIAS\Data\342_UniversityWay E of Anderson 10-5-09.rdf

City of Ellensburg

Description 1 : University Way
Description 2 : East of Anderson Street
Description 3 :

Site: 342
Date: 10/3/2009
Saturday

24 Hour Vehicle Classification (60 Min., Combined)
Combined Channels

Time	Total	Bike	Cars Trailer	2 Axle Long	Buses	2 Axle 6 Tire	3 Axle Single	4 Axle Single	<5 Ax Doubl	5 Axle Doubl	>6 Ax Doubl	<6 Ax Multi	6 Axle Multi	>6 Ax Multi
12:00 AM	183	0	112	63	0	8	0	0	0	0	0	0	0	0
1:00 AM	107	0	62	42	0	12	0	0	1	0	0	0	0	0
2:00 AM	54	0	33	16	0	5	0	0	0	0	0	0	0	0
3:00 AM	34	0	21	11	0	2	0	0	0	0	0	0	0	0
4:00 AM	44	0	19	15	0	10	0	0	0	0	0	0	0	0
5:00 AM	65	0	28	26	0	10	0	0	1	0	0	0	0	0
6:00 AM	105	0	53	31	0	19	0	0	2	0	0	0	0	0
7:00 AM	245	1	104	88	2	29	0	0	6	2	0	1	0	0
8:00 AM	475	3	182	197	3	75	0	0	12	0	0	3	0	0
9:00 AM	658	11	250	235	5	106	0	0	25	1	0	0	0	0
10:00 AM	734	15	307	264	19	94	1	0	26	0	1	6	1	0
11:00 AM	813	18	359	285	17	88	2	0	25	3	0	16	0	1
12:00 PM	877	15	355	308	24	113	4	0	43	0	2	13	0	0
1:00 PM	766	14	317	280	8	95	2	1	37	0	2	11	0	1
2:00 PM	736	9	340	252	13	82	2	1	28	0	0	9	0	0
3:00 PM	732	5	329	243	16	97	8	0	37	1	0	5	0	1
4:00 PM	732	7	345	253	12	80	3	0	24	1	0	7	0	0
5:00 PM	776	16	367	251	18	76	5	1	38	1	0	7	0	1
6:00 PM	739	7	358	261	10	69	1	1	26	0	0	6	0	0
7:00 PM	534	4	252	198	7	59	1	0	17	2	0	4	0	0
8:00 PM	473	7	235	159	1	58	0	0	11	0	1	1	0	0
9:00 PM	385	1	204	145	2	22	0	0	5	0	0	2	0	0
10:00 PM	262	0	154	73	1	23	0	0	9	0	0	2	0	0
11:00 PM	222	1	150	74	0	16	0	0	1	0	0	0	0	0
Total	10759	129	4916	3771	168	1259	21	4	368	10	6	102	1	4
%		1.2	45.7	35.0	1.6	11.7	0.2	0.0	3.4	0.1	0.1	0.9	0.0	0.0

City of Ellensburg

Description 1 : University Way
Description 2 : East of Anderson Street
Description 3 :

Site: 342
Date: 10/4/2009
Sunday

24 Hour Vehicle Classification (60 Min., Combined)
Combined Channels

Time	Total	Bike	Cars Trailer	2 Axle Long	Buses	2 Axle 6 Tire	3 Axle Single	4 Axle Single	<5 Ax Doubl	5 Axle Doubl	>6 Ax Doubl	<6 Ax Multi	6 Axle Multi	>6 Ax Multi
12:00 AM	148	0	85	49	1	13	0	0	0	0	0	0	0	0
1:00 AM	110	0	54	42	0	15	0	0	0	0	0	0	0	0
2:00 AM	53	0	29	18	0	6	0	0	0	0	0	0	0	0
3:00 AM	28	0	16	10	0	2	0	0	0	0	0	0	0	0
4:00 AM	29	0	13	14	0	2	0	0	0	0	0	0	0	0
5:00 AM	50	0	25	16	0	8	0	0	0	0	0	0	0	0
6:00 AM	50	1	24	15	2	8	0	0	0	0	0	0	0	0
7:00 AM	142	1	62	58	0	18	0	0	2	1	0	0	0	0
8:00 AM	266	1	123	93	1	39	0	0	6	1	0	1	1	0
9:00 AM	477	3	222	167	4	65	1	0	9	0	0	5	0	0
10:00 AM	563	4	235	209	8	82	0	0	18	1	0	6	0	0
11:00 AM	615	10	256	239	8	78	2	0	25	0	0	2	0	1
12:00 PM	774	15	354	277	18	79	2	1	24	0	0	4	0	0
1:00 PM	713	3	321	246	10	87	0	0	33	1	0	6	0	2
2:00 PM	689	9	350	228	5	69	0	0	24	1	0	3	0	0
3:00 PM	725	8	357	248	7	71	1	0	28	0	0	3	1	1
4:00 PM	706	12	323	246	10	78	2	0	27	1	0	5	0	2
5:00 PM	692	13	345	222	12	63	1	0	36	0	0	6	1	0
6:00 PM	639	6	308	216	11	64	0	1	24	1	0	7	0	1
7:00 PM	557	5	281	189	5	70	2	0	12	0	0	3	0	0
8:00 PM	501	2	292	154	5	22	0	0	21	0	0	4	0	1
9:00 PM	327	1	182	101	1	22	0	0	6	0	0	1	0	0
10:00 PM	205	2	110	79	1	11	0	0	1	0	0	1	0	0
11:00 PM	121	2	70	39	0	7	2	0	1	1	0	0	0	0
Total	9161	101	4437	3187	111	933	14	2	297	9	1	57	4	8
%		1.1	48.4	34.8	1.2	10.2	0.2	0.0	3.2	0.1	0.0	0.6	0.0	0.1

File: \\filecity1\users\works\jonesc\TimeMark\VIAS\Data\342_UniversityWay E of Anderson 10-5-09.rdf

City of Ellensburg

Description 1 : University Way
Description 2 : East of Poplar Street
Description 3 :

Site: 343
Date: 10/3/2009
Saturday

24 Hour Volume (2 channels/pg., 15 min.)

Begin	EB		WB		Combined		Begin	EB		WB		Combined	
12:00 AM	36	107	22	89	58	196	12:00 PM	151	504	141	495	292	999
12:15 AM	29		28		57		12:15 PM	118		121		239	
12:30 AM	25		25		50		12:30 PM	121		110		231	
12:45 AM	17		14		31		12:45 PM	114		123		237	
1:00 AM	25	104	14	50	39	154	1:00 PM	142	495	106	420	248	915
1:15 AM	16		7		23		1:15 PM	139		96		235	
1:30 AM	29		16		45		1:30 PM	113		101		214	
1:45 AM	34		13		47		1:45 PM	101		117		218	
2:00 AM	10	42	15	35	25	77	2:00 PM	127	408	116	462	243	870
2:15 AM	19		9		28		2:15 PM	108		104		212	
2:30 AM	6		5		11		2:30 PM	81		120		201	
2:45 AM	7		6		13		2:45 PM	92		122		214	
3:00 AM	8	20	3	19	11	39	3:00 PM	125	480	103	462	228	942
3:15 AM	7		7		14		3:15 PM	111		118		229	
3:30 AM	1		5		6		3:30 PM	111		118		229	
3:45 AM	4		4		8		3:45 PM	133		123		256	
4:00 AM	2	20	4	28	6	48	4:00 PM	123	453	107	452	230	905
4:15 AM	4		6		10		4:15 PM	115		113		228	
4:30 AM	8		5		13		4:30 PM	105		106		211	
4:45 AM	6		13		19		4:45 PM	110		126		236	
5:00 AM	8	38	3	42	11	80	5:00 PM	97	430	145	477	242	907
5:15 AM	13		13		26		5:15 PM	132		94		226	
5:30 AM	7		10		17		5:30 PM	91		118		209	
5:45 AM	10		16		26		5:45 PM	110		120		230	
6:00 AM	11	44	23	93	34	137	6:00 PM	109	444	103	384	212	828
6:15 AM	7		20		27		6:15 PM	135		82		217	
6:30 AM	9		18		27		6:30 PM	105		104		209	
6:45 AM	17		32		49		6:45 PM	95		95		190	
7:00 AM	12	86	25	176	37	262	7:00 PM	88	333	88	319	176	652
7:15 AM	18		39		57		7:15 PM	80		91		171	
7:30 AM	20		53		73		7:30 PM	88		79		167	
7:45 AM	36		59		95		7:45 PM	77		61		138	
8:00 AM	39	192	63	320	102	512	8:00 PM	72	270	73	291	145	561
8:15 AM	42		66		108		8:15 PM	59		73		132	
8:30 AM	43		88		131		8:30 PM	65		60		125	
8:45 AM	68		103		171		8:45 PM	74		85		159	
9:00 AM	70	322	102	445	172	767	9:00 PM	79	250	86	235	165	485
9:15 AM	88		102		190		9:15 PM	51		42		93	
9:30 AM	80		116		196		9:30 PM	55		60		115	
9:45 AM	84		125		209		9:45 PM	65		47		112	
10:00 AM	78	379	109	467	187	846	10:00 PM	49	200	38	156	87	356
10:15 AM	100		122		222		10:15 PM	46		44		90	
10:30 AM	94		113		207		10:30 PM	63		35		98	
10:45 AM	107		123		230		10:45 PM	42		39		81	
11:00 AM	108	444	96	456	204	900	11:00 PM	58	170	25	118	83	288
11:15 AM	122		117		239		11:15 PM	43		35		78	
11:30 AM	98		130		228		11:30 PM	35		23		58	
11:45 AM	116		113		229		11:45 PM	34		35		69	
Totals													
12 Hours	1798		2220		4018			4437		4271		8708	
	44.7 %		55.3 %					51.0 %		49.0 %			
24 Hours	6235		6491		12726								
	49.0 %		51.0 %										
Peak Hours													
AM	11:00 AM		9:30 AM		10:45 AM		PM	12:30 PM		12:00 PM		12:00 PM	
Volume	444		472		901			516		495		999	
Factor	0.91		0.94		0.94			0.91		0.88		0.86	

File: \\filecity1\users\works\jonesc\TimeMark\VIAS\Data\343_Universityway E of Poplar 10-5-09.rdf

City of Ellensburg

Description 1 : University Way
Description 2 : East of Poplar Street
Description 3 :

Site: 343
Date: 10/4/2009
Sunday

24 Hour Volume (2 channels/pg., 15 min.)

Begin	EB		WB		Combined		Begin	EB		WB		Combined	
12:00 AM	32	112	26	82	58	194	12:00 PM	100	412	109	475	209	887
12:15 AM	29		21		50		12:15 PM	95		122		217	
12:30 AM	29		15		44		12:30 PM	117		125		242	
12:45 AM	22		20		42		12:45 PM	100		119		219	
1:00 AM	18	83	10	51	28	134	1:00 PM	113	402	104	438	217	840
1:15 AM	20		16		36		1:15 PM	90		132		222	
1:30 AM	16		16		32		1:30 PM	83		114		197	
1:45 AM	29		9		38		1:45 PM	116		88		204	
2:00 AM	15	45	10	26	25	71	2:00 PM	125	427	82	344	207	771
2:15 AM	14		6		20		2:15 PM	89		95		184	
2:30 AM	12		6		18		2:30 PM	112		82		194	
2:45 AM	4		4		8		2:45 PM	101		85		186	
3:00 AM	2	12	7	21	9	33	3:00 PM	101	411	100	392	201	803
3:15 AM	2		3		5		3:15 PM	105		112		217	
3:30 AM	7		4		11		3:30 PM	107		91		198	
3:45 AM	1		7		8		3:45 PM	98		89		187	
4:00 AM	3	14	4	22	7	36	4:00 PM	103	398	92	350	195	748
4:15 AM	6		4		10		4:15 PM	82		79		161	
4:30 AM	2		5		7		4:30 PM	106		77		183	
4:45 AM	3		9		12		4:45 PM	107		102		209	
5:00 AM	3	20	2	34	5	54	5:00 PM	101	436	99	361	200	797
5:15 AM	8		5		13		5:15 PM	103		73		176	
5:30 AM	2		8		10		5:30 PM	97		78		175	
5:45 AM	7		19		26		5:45 PM	135		111		246	
6:00 AM	5	25	11	49	16	74	6:00 PM	92	411	101	360	193	771
6:15 AM	6		11		17		6:15 PM	112		86		198	
6:30 AM	2		11		13		6:30 PM	106		83		189	
6:45 AM	12		16		28		6:45 PM	101		90		191	
7:00 AM	11	60	18	92	29	152	7:00 PM	107	396	86	294	193	690
7:15 AM	11		19		30		7:15 PM	94		74		168	
7:30 AM	13		26		39		7:30 PM	98		77		175	
7:45 AM	25		29		54		7:45 PM	97		57		154	
8:00 AM	34	118	44	191	78	309	8:00 PM	102	293	48	239	150	532
8:15 AM	23		35		58		8:15 PM	77		60		137	
8:30 AM	30		47		77		8:30 PM	66		58		124	
8:45 AM	31		65		96		8:45 PM	48		73		121	
9:00 AM	45	222	69	331	114	553	9:00 PM	65	234	49	146	114	380
9:15 AM	45		69		114		9:15 PM	71		38		109	
9:30 AM	55		94		149		9:30 PM	57		28		85	
9:45 AM	77		99		176		9:45 PM	41		31		72	
10:00 AM	66	290	100	339	166	629	10:00 PM	47	160	32	96	79	256
10:15 AM	82		60		142		10:15 PM	40		19		59	
10:30 AM	73		76		149		10:30 PM	41		18		59	
10:45 AM	69		103		172		10:45 PM	32		27		59	
11:00 AM	79	343	86	359	165	702	11:00 PM	39	98	13	53	52	151
11:15 AM	71		89		160		11:15 PM	22		17		39	
11:30 AM	105		83		188		11:30 PM	17		6		23	
11:45 AM	88		101		189		11:45 PM	20		17		37	
Totals													
12 Hours	1344		1597		2941			4078		3548		7626	
	45.7 %		54.3 %					53.5 %		46.5 %			
24 Hours	5422		5145		10567								
	51.3 %		48.7 %										
Peak Hours													
AM	11:00 AM		9:15 AM		11:00 AM		PM	5:45 PM		12:30 PM		12:30 PM	
Volume	343		362		702			445		480		900	
Factor	0.82		0.90		0.93			0.82		0.91		0.93	

File: \\fllecity1\users\works\jonesc\TimeMark\VIAS\Data\343_Universityway E of Poplar 10-5-09.rdf

City of Ellensburg

Description 1 : University Way
Description 2 : East of Poplar Street
Description 3 :

Site: 343
Date: 10/3/2009
Saturday

24 Hour Vehicle Classification (60 Min., Combined)
Combined Channels

Time	Total	Bike	Cars Trailer	2 Axle Long	Buses	2 Axle 6 Tire	3 Axle Single	4 Axle Single	<5 Ax Doubl	5 Axle Doubl	>6 Ax Doubl	<6 Ax Multi	6 Axle Multi	>6 Ax Multi
12:00 AM	196	0	175	16	0	3	1	0	1	0	0	0	0	0
1:00 AM	54	0	25	25	0	3	0	0	1	0	0	0	0	0
2:00 AM	77	0	68	9	0	0	0	0	0	0	0	0	0	0
3:00 AM	39	0	34	4	0	1	0	0	0	0	0	0	0	0
4:00 AM	48	0	36	8	0	4	0	0	0	0	0	0	0	0
5:00 AM	80	0	57	16	0	5	0	0	0	0	0	0	0	0
6:00 AM	137	1	97	31	0	7	0	0	1	0	0	0	0	0
7:00 AM	262	2	186	53	0	15	0	0	5	0	1	0	0	0
8:00 AM	512	8	350	117	3	24	0	0	9	0	0	1	0	0
9:00 AM	750	13	506	174	17	38	2	0	22	0	0	0	0	0
10:00 AM	846	17	539	182	21	46	3	1	34	1	1	1	0	0
11:00 AM	900	12	625	161	19	48	2	0	33	1	0	0	0	0
12:00 PM	999	16	713	157	23	44	1	0	41	1	1	1	1	0
1:00 PM	915	11	639	136	32	40	5	1	42	1	0	1	0	1
2:00 PM	870	18	615	151	16	34	1	0	32	1	0	1	0	1
3:00 PM	942	11	701	148	15	34	3	1	26	1	0	2	0	0
4:00 PM	905	16	697	127	16	25	0	0	21	1	0	2	0	0
5:00 PM	907	12	682	124	24	27	2	1	34	0	0	1	0	0
6:00 PM	828	12	622	150	4	19	1	0	18	0	0	1	0	1
7:00 PM	652	6	510	77	11	26	0	0	21	0	0	0	0	1
8:00 PM	561	2	444	68	4	23	3	0	17	0	0	0	0	0
9:00 PM	485	3	405	57	1	8	0	0	10	0	0	1	0	0
10:00 PM	356	3	301	41	1	6	1	0	3	0	0	0	0	0
11:00 PM	288	1	250	27	2	6	0	0	2	0	0	0	0	0
Total	12726	156	9375	2063	209	486	28	4	376	7	4	13	1	4
%		1.2	73.7	16.2	1.6	3.8	0.2	0.0	3.0	0.1	0.0	0.1	0.0	0.0

File: \\filecity1\users\works\jonesc\TimeMark\VIAS\Data\343_Universityway E of Poplar 10-5-09.rdf

City of Ellensburg

Description 1 : University Way
Description 2 : East of Poplar Street
Description 3 :

Site: 343
Date: 10/4/2009
Sunday

24 Hour Vehicle Classification (60 Min., Combined)
Combined Channels

Time	Total	Bike	Cars Trailer	2 Axle Long	Buses	2 Axle 6 Tire	3 Axle Single	4 Axle Single	<5 Ax Doubl	5 Axle Doubl	>6 Ax Doubl	<6 Ax Multi	6 Axle Multi	>6 Ax Multi
12:00 AM	194	1	160	29	0	3	0	0	1	0	0	0	0	0
1:00 AM	134	0	112	18	0	3	0	0	1	0	0	0	0	0
2:00 AM	71	0	61	9	0	1	0	0	0	0	0	0	0	0
3:00 AM	50	0	29	4	0	0	0	0	0	0	0	0	0	0
4:00 AM	36	0	33	2	0	1	0	0	0	0	0	0	0	0
5:00 AM	54	0	42	12	0	0	0	0	0	0	0	0	0	0
6:00 AM	74	1	53	13	0	6	1	0	0	0	0	0	0	0
7:00 AM	152	3	118	24	0	7	0	0	0	0	0	0	0	0
8:00 AM	309	0	231	63	2	8	0	0	3	2	0	0	0	0
9:00 AM	553	1	410	114	3	16	2	0	4	0	0	0	0	0
10:00 AM	629	3	464	118	9	19	2	0	13	1	0	0	0	0
11:00 AM	702	4	503	132	9	20	2	0	23	3	0	0	0	0
12:00 PM	887	9	660	132	19	21	1	0	43	0	0	2	0	0
1:00 PM	840	13	601	138	10	32	1	0	34	0	0	0	0	0
2:00 PM	771	10	583	118	9	26	1	0	22	1	0	0	0	1
3:00 PM	805	12	624	109	13	18	0	0	21	2	0	0	0	1
4:00 PM	748	9	534	138	13	22	0	0	30	0	1	1	0	0
5:00 PM	795	9	624	102	11	17	0	0	23	0	0	0	0	0
6:00 PM	771	12	595	102	9	28	1	0	22	0	0	1	0	1
7:00 PM	690	8	546	103	6	17	0	0	12	0	0	0	0	0
8:00 PM	532	4	442	53	5	12	1	0	15	0	0	0	0	0
9:00 PM	380	0	314	50	2	8	0	0	6	0	0	0	0	0
10:00 PM	256	4	222	26	0	3	0	0	1	0	0	0	0	0
11:00 PM	159	0	129	24	0	2	0	0	0	0	0	0	0	0
Total	10567	101	8097	1633	120	292	13	1	280	12	2	12	1	3
%		1.0	76.6	15.5	1.1	2.8	0.1	0.0	2.6	0.1	0.0	0.1	0.0	0.0

File: \\filecity1\users\works\jonesc\TimeMark\VIAS\Data\343_Universityway E of Poplar 10-5-09.rdf

City of Ellensburg

Description 1 : University Way
Description 2 : West of Columbia Street
Description 3 :

Site: 341
Date: 10/2/2009
Friday

24 Hour Volume (2 channels/pg., 15 min.)

Begin	EB		WB		Combined		Begin	EB		WB		Combined	
12:00 PM	99	437	126	400	225	837	12:00 AM	*	*	*	*	*	*
12:15 PM	107		96		203		12:15 AM	*		*		*	
12:30 PM	118		87		205		12:30 AM	*		*		*	
12:45 PM	113		91		204		12:45 AM	*		*		*	
1:00 PM	100	380	114	484	214	864	1:00 AM	*	*	*	*	*	*
1:15 PM	93		118		211		1:15 AM	*		*		*	
1:30 PM	90		140		230		1:30 AM	*		*		*	
1:45 PM	97		112		209		1:45 AM	*		*		*	
2:00 PM	102	368	121	492	223	860	2:00 AM	*	*	*	*	*	*
2:15 PM	96		143		239		2:15 AM	*		*		*	
2:30 PM	80		106		186		2:30 AM	*		*		*	
2:45 PM	90		122		212		2:45 AM	*		*		*	
3:00 PM	118	431	118	523	236	954	3:00 AM	*	*	*	*	*	*
3:15 PM	98		131		229		3:15 AM	*		*		*	
3:30 PM	112		135		247		3:30 AM	*		*		*	
3:45 PM	103		139		242		3:45 AM	*		*		*	
4:00 PM	110	439	113	450	223	889	4:00 AM	*	*	*	*	*	*
4:15 PM	109		121		230		4:15 AM	*		*		*	
4:30 PM	108		105		213		4:30 AM	*		*		*	
4:45 PM	112		111		223		4:45 AM	*		*		*	
5:00 PM	110	396	123	481	233	877	5:00 AM	*	*	*	*	*	*
5:15 PM	106		145		251		5:15 AM	*		*		*	
5:30 PM	94		123		217		5:30 AM	*		*		*	
5:45 PM	86		90		176		5:45 AM	*		*		*	
6:00 PM	72	330	103	345	175	675	6:00 AM	*	*	*	*	*	*
6:15 PM	65		89		154		6:15 AM	*		*		*	
6:30 PM	73		88		161		6:30 AM	*		*		*	
6:45 PM	120		65		185		6:45 AM	*		*		*	
7:00 PM	93	315	76	291	169	606	7:00 AM	*	*	*	*	*	*
7:15 PM	82		74		156		7:15 AM	*		*		*	
7:30 PM	71		77		148		7:30 AM	*		*		*	
7:45 PM	69		64		133		7:45 AM	*		*		*	
8:00 PM	60	224	54	224	114	448	8:00 AM	*	*	*	*	*	*
8:15 PM	56		57		113		8:15 AM	*		*		*	
8:30 PM	67		62		129		8:30 AM	*		*		*	
8:45 PM	41		51		92		8:45 AM	*		*		*	
9:00 PM	49	174	47	190	96	364	9:00 AM	*	*	*	*	*	*
9:15 PM	43		52		95		9:15 AM	*		*		*	
9:30 PM	40		41		81		9:30 AM	*		*		*	
9:45 PM	42		50		92		9:45 AM	*		*		*	
10:00 PM	35	137	54	136	89	273	10:00 AM	*	*	*	*	*	*
10:15 PM	31		24		55		10:15 AM	*		*		*	
10:30 PM	39		31		70		10:30 AM	*		*		*	
10:45 PM	32		27		59		10:45 AM	*		*		*	
11:00 PM	22	90	34	96	56	186	11:00 AM	*	*	*	*	*	*
11:15 PM	23		22		45		11:15 AM	*		*		*	
11:30 PM	21		20		41		11:30 AM	*		*		*	
11:45 PM	24		20		44		11:45 AM	*		*		*	
Totals													
12 Hours	3721		4112		7833			0		0		0	
	47.5 %		52.5 %					*		*			
24 Hours	3721		4112		7833								
	47.5 %		52.5 %										
Peak Hours													
AM	*		*		*		PM	4:00 PM		3:00 PM		3:00 PM	
Volume	*		*		*			439		523		954	
Factor	*		*		*			0.98		0.94		0.97	

File: \\fileclty1\users\works\jonesc\TimeMark\VIAS\Data\341_Universityway W of Columbia 10-5-09.rdf

Description 1 : University Way
Description 2 : East of Anderson Street
Description 3 :

Site: 342
Date: 10/2/2009
Friday

24 Hour Volume (2 channels/pg., 15 min.)

Begin	EB		WB		Combined		Begin	EB		WB		Combined	
12:00 PM	112	429	118	500	230	929	12:00 AM	*	*	*	*	*	*
12:15 PM	94		116		210		12:15 AM	*		*		*	
12:30 PM	111		140		251		12:30 AM	*		*		*	
12:45 PM	112		126		238		12:45 AM	*		*		*	
1:00 PM	119	465	116	496	235	961	1:00 AM	*	*	*	*	*	*
1:15 PM	105		125		230		1:15 AM	*		*		*	
1:30 PM	130		121		251		1:30 AM	*		*		*	
1:45 PM	111		134		245		1:45 AM	*		*		*	
2:00 PM	104	454	124	523	228	977	2:00 AM	*	*	*	*	*	*
2:15 PM	110		140		250		2:15 AM	*		*		*	
2:30 PM	110		128		238		2:30 AM	*		*		*	
2:45 PM	130		131		261		2:45 AM	*		*		*	
3:00 PM	121	502	119	515	240	1017	3:00 AM	*	*	*	*	*	*
3:15 PM	126		137		263		3:15 AM	*		*		*	
3:30 PM	124		130		254		3:30 AM	*		*		*	
3:45 PM	131		129		260		3:45 AM	*		*		*	
4:00 PM	128	520	125	487	253	1007	4:00 AM	*	*	*	*	*	*
4:15 PM	138		131		269		4:15 AM	*		*		*	
4:30 PM	126		112		238		4:30 AM	*		*		*	
4:45 PM	128		119		247		4:45 AM	*		*		*	
5:00 PM	148	483	138	496	286	979	5:00 AM	*	*	*	*	*	*
5:15 PM	125		131		256		5:15 AM	*		*		*	
5:30 PM	108		124		232		5:30 AM	*		*		*	
5:45 PM	102		103		205		5:45 AM	*		*		*	
6:00 PM	93	409	107	389	200	798	6:00 AM	*	*	*	*	*	*
6:15 PM	102		99		201		6:15 AM	*		*		*	
6:30 PM	105		91		196		6:30 AM	*		*		*	
6:45 PM	109		92		201		6:45 AM	*		*		*	
7:00 PM	111	381	82	292	193	673	7:00 AM	*	*	*	*	*	*
7:15 PM	94		71		165		7:15 AM	*		*		*	
7:30 PM	89		77		166		7:30 AM	*		*		*	
7:45 PM	87		62		149		7:45 AM	*		*		*	
8:00 PM	84	310	55	234	139	544	8:00 AM	*	*	*	*	*	*
8:15 PM	82		60		142		8:15 AM	*		*		*	
8:30 PM	73		59		132		8:30 AM	*		*		*	
8:45 PM	71		60		131		8:45 AM	*		*		*	
9:00 PM	67	239	67	244	134	483	9:00 AM	*	*	*	*	*	*
9:15 PM	67		59		126		9:15 AM	*		*		*	
9:30 PM	57		58		115		9:30 AM	*		*		*	
9:45 PM	48		60		108		9:45 AM	*		*		*	
10:00 PM	43	186	39	162	82	348	10:00 AM	*	*	*	*	*	*
10:15 PM	53		60		113		10:15 AM	*		*		*	
10:30 PM	48		29		77		10:30 AM	*		*		*	
10:45 PM	42		34		76		10:45 AM	*		*		*	
11:00 PM	44	144	28	103	72	247	11:00 AM	*	*	*	*	*	*
11:15 PM	34		33		67		11:15 AM	*		*		*	
11:30 PM	34		19		53		11:30 AM	*		*		*	
11:45 PM	32		23		55		11:45 AM	*		*		*	
Totals													
12 Hours	4522		4441		8963			0		0		0	
	50.5 %		49.5 %					*		*			
24 Hours	4522		4441		8963								
	50.5 %		49.5 %										
Peak Hours													
AM	*		*		*		PM	4:15 PM		1:45 PM		4:15 PM	
Volume	*		*		*			540		526		1040	
Factor	*		*		*			0.91		0.94		0.91	

File: \\filecity1\users\works\Jonesc\TimeMark\VIAS\Data\342_UniversityWay E of Anderson 10-5-09.rdf

City of Ellensburg

Description 1 : University Way
Description 2 : East of Poplar Street
Description 3 :

Site: 343
Date: 10/2/2009
Friday

24 Hour Volume (2 channels/pg., 15 min.)

Begin	EB		WB		Combined		Begin	EB		WB		Combined	
12:00 PM	136	522	152	569	288	1091	12:00 AM	*	*	*	*	*	*
12:15 PM	128		136		264		12:15 AM	*		*		*	
12:30 PM	136		126		262		12:30 AM	*		*		*	
12:45 PM	122		155		277		12:45 AM	*		*		*	
1:00 PM	127	543	189	611	316	1154	1:00 AM	*	*	*	*	*	*
1:15 PM	121		143		264		1:15 AM	*		*		*	
1:30 PM	155		133		288		1:30 AM	*		*		*	
1:45 PM	140		146		286		1:45 AM	*		*		*	
2:00 PM	134	565	169	623	303	1188	2:00 AM	*	*	*	*	*	*
2:15 PM	134		146		280		2:15 AM	*		*		*	
2:30 PM	144		147		291		2:30 AM	*		*		*	
2:45 PM	153		161		314		2:45 AM	*		*		*	
3:00 PM	148	665	159	578	307	1243	3:00 AM	*	*	*	*	*	*
3:15 PM	176		152		328		3:15 AM	*		*		*	
3:30 PM	180		134		314		3:30 AM	*		*		*	
3:45 PM	161		133		294		3:45 AM	*		*		*	
4:00 PM	152	620	176	591	328	1211	4:00 AM	*	*	*	*	*	*
4:15 PM	151		156		307		4:15 AM	*		*		*	
4:30 PM	167		129		296		4:30 AM	*		*		*	
4:45 PM	150		130		280		4:45 AM	*		*		*	
5:00 PM	181	623	158	548	339	1171	5:00 AM	*	*	*	*	*	*
5:15 PM	165		148		313		5:15 AM	*		*		*	
5:30 PM	139		132		271		5:30 AM	*		*		*	
5:45 PM	138		110		248		5:45 AM	*		*		*	
6:00 PM	127	504	111	452	238	956	6:00 AM	*	*	*	*	*	*
6:15 PM	129		135		264		6:15 AM	*		*		*	
6:30 PM	116		104		220		6:30 AM	*		*		*	
6:45 PM	132		102		234		6:45 AM	*		*		*	
7:00 PM	125	454	103	367	228	821	7:00 AM	*	*	*	*	*	*
7:15 PM	122		91		213		7:15 AM	*		*		*	
7:30 PM	106		96		202		7:30 AM	*		*		*	
7:45 PM	101		77		178		7:45 AM	*		*		*	
8:00 PM	88	373	63	294	151	667	8:00 AM	*	*	*	*	*	*
8:15 PM	96		84		180		8:15 AM	*		*		*	
8:30 PM	109		70		179		8:30 AM	*		*		*	
8:45 PM	80		77		157		8:45 AM	*		*		*	
9:00 PM	87	331	76	247	163	578	9:00 AM	*	*	*	*	*	*
9:15 PM	91		63		154		9:15 AM	*		*		*	
9:30 PM	76		65		141		9:30 AM	*		*		*	
9:45 PM	77		43		120		9:45 AM	*		*		*	
10:00 PM	65	243	47	175	112	418	10:00 AM	*	*	*	*	*	*
10:15 PM	59		45		104		10:15 AM	*		*		*	
10:30 PM	57		42		99		10:30 AM	*		*		*	
10:45 PM	62		41		103		10:45 AM	*		*		*	
11:00 PM	56	185	26	102	82	287	11:00 AM	*	*	*	*	*	*
11:15 PM	43		27		70		11:15 AM	*		*		*	
11:30 PM	43		30		73		11:30 AM	*		*		*	
11:45 PM	43		19		62		11:45 AM	*		*		*	
Totals													
12 Hours	5628		5157		10785			0		0		0	
	52.2 %		47.8 %					*		*			
24 Hours	5628		5157		10785								
	52.2 %		47.8 %										
Peak Hours													
AM	*		*		*		PM	3:15 PM		2:00 PM		3:15 PM	
Volume	*		*		*			669		623		1264	
Factor	*		*		*			0.93		0.92		0.96	

File: \\filecity1\users\works\jonesc\TimeMark\VIAS\Data\343_Universityway E of Poplar 10-5-09.rdf

Location: University Way/D Street
Checker: DM
Date: 15-Oct-09
15 Min. Adj Factor; F(adj)= 1.0000 (15 min/# of minutes counted)

Weather: Clear
Start Time: 4:00 PM

City/Town: Ellensburg
Job: University Way Channelization
Pk Hr: 4:30 PM 5:30 PM

END TIME	FROM: NORTH RIGHT	THRU	LEFT	TOTAL	TRUCKS	FROM: EAST RIGHT	THRU	LEFT	TOTAL	TRUCKS
4:15 PM	33	31	16	80	0	10	125	5	140	0
4:30 PM	43	23	13	79	0	18	120	6	144	0
4:45 PM	46	25	23	94	0	17	107	6	130	0
5:00 PM	47	27	17	91	0	18	126	4	148	0
5:15 PM	64	36	25	125	0	15	104	4	123	0
5:30 PM	41	25	28	94	0	27	116	8	151	0
5:45 PM	48	27	11	86	0	13	96	5	114	0
6:00 PM	43	18	28	89	0	12	100	2	114	0
PK HR	198	113	93	404	0	77	453	22	552	0
Adj HR	198	113	93	404	0	77	453	22	552	0

END TIME	FROM: SOUTH RIGHT	THRU	LEFT	TOTAL	TRUCKS	FROM: WEST RIGHT	THRU	LEFT	TOTAL	TRUCKS
4:15 PM	7	7	7	21	0	3	103	26	132	0
4:30 PM	0	1	2	3	0	0	110	24	134	0
4:45 PM	2	12	4	18	0	0	114	26	140	0
5:00 PM	6	4	3	13	0	3	118	18	139	0
5:15 PM	3	18	7	28	0	2	105	19	126	0
5:30 PM	5	19	3	27	0	2	113	35	150	0
5:45 PM	5	13	1	19	0	0	117	36	153	0
6:00 PM	2	21	1	24	0	2	89	23	114	0
PK HR	16	53	17	86	0	7	450	98	555	0
Adj HR	16	53	17	86	0	7	450	98	555	0

END TIME	15 Min TOTALS
16:15	373
16:30	360
16:45	382
17:00	391
17:15	402
17:30	422
17:45	372
18:00	341

Time Start -	End	hr vol	pk hr?
16:00	17:00	1506	no
16:15	17:15	1535	no
16:30	17:30	1597	YES
16:45	17:45	1587	no
17:00	18:00	1537	no

DN Traffic Enterprises

INTERSECTION: University Way/D Street
PEAK HOUR: 4:30 PM 5:30 PM
DATE: 15-Oct-09
SOURCE: DN Traffic

PEAK HOUR DIRECTIONAL LEG VOLUMES

404	228
668	552
555	559
142	86

PEAK HOUR APPROACH VOLUME MOVEMENTS

					404					
				198	113	93				
				RIGHT	THRU	LEFT				
	98	LEFT			*NORTH*			RIGHT	77	
555	450	THRU		*WEST*		*EAST*		THRU	453	552
	7	RIGHT			*SOUTH*			LEFT	22	
				LEFT	THRU	RIGHT				
				17	53	16				
					86					

ADJUSTMENT FACTORS DERIVED FROM COUNT

Peak Hour Factors:	From North:	0.81	SB
	From South:	0.77	NB
	From East:	0.91	WB
	From West:	0.93	EB
	Total	0.95	
Percent Trucks & Buses:	From North:	0.0%	SB
	From South:	0.0%	NB
	From East:	0.0%	WB
	From West:	0.0%	EB

Location: University Way/Alder Street
Checker: DM
Date: 22-Oct-09
15 Min. Adj Factor; F(adj)= 1.0000 (15 min/# of minutes counted)

Weather: Clear
Start Time: 4:00 PM

City/Town: Ellensburg
Job: University Way Channelization
Pk Hr: 4:30 PM 5:30 PM

END TIME	FROM: NORTH RIGHT	THRU	LEFT	TOTAL	TRUCKS	FROM: EAST RIGHT	THRU	LEFT	TOTAL	TRUCKS
4:15 PM	57	2	19	78	0	14	74	0	88	0
4:30 PM	42	0	18	60	0	9	84	1	94	0
4:45 PM	56	1	18	75	0	9	79	1	89	0
5:00 PM	45	2	18	65	0	8	69	0	77	0
5:15 PM	66	2	24	92	0	14	83	1	98	0
5:30 PM	60	2	15	77	0	17	71	0	88	0
5:45 PM	60	0	23	83	0	12	74	0	86	0
6:00 PM	45	0	14	59	0	15	68	0	83	0
PK HR	227	7	75	309	0	48	302	2	352	0
Adj HR	227	7	75	309	0	48	302	2	352	0

END TIME	FROM: SOUTH RIGHT	THRU	LEFT	TOTAL	TRUCKS	FROM: WEST RIGHT	THRU	LEFT	TOTAL	TRUCKS
4:15 PM	2	0	1	3	0	1	117	56	174	0
4:30 PM	1	0	2	3	0	1	96	63	160	0
4:45 PM	0	1	1	2	0	2	118	56	176	0
5:00 PM	0	0	1	1	0	2	96	61	159	0
5:15 PM	0	0	4	4	0	3	164	70	237	0
5:30 PM	0	0	2	2	0	4	121	58	183	0
5:45 PM	0	1	0	1	0	4	111	48	163	0
6:00 PM	2	0	2	4	0	2	96	45	143	0
PK HR	0	1	8	9	0	11	499	245	755	0
Adj HR	0	1	8	9	0	11	499	245	755	0

END TIME	15 Min TOTALS
16:15	343
16:30	317
16:45	342
17:00	302
17:15	431
17:30	350
17:45	333
18:00	289

Time Start -	End	hr vol	pk hr?
16:00	17:00	1304	no
16:15	17:15	1392	no
16:30	17:30	1425	YES
16:45	17:45	1416	no
17:00	18:00	1403	no

INTERSECTION: University Way/Alder Street
PEAK HOUR: 4:30 PM 5:30 PM
DATE: 22-Oct-09
SOURCE: DN Traffic

PEAK HOUR DIRECTIONAL LEG VOLUMES

309	294
537	352
755	574
20	9

PEAK HOUR APPROACH VOLUME MOVEMENTS

					309					
				227	7	75				
				RIGHT	THRU	LEFT				
	245	LEFT			*NORTH*			RIGHT	48	
755	499	THRU		*WEST*		*EAST*		THRU	302	352
	11	RIGHT			*SOUTH*			LEFT	2	
				LEFT	THRU	RIGHT				
				8	1	0				
					9					

ADJUSTMENT FACTORS DERIVED FROM COUNT

Peak Hour Factors:	From North:	0.84	SB
	From South:	0.56	NB
	From East:	0.90	WB
	From West:	0.80	EB
	Total	0.83	
Percent Trucks & Buses:	From North:	0.0%	SB
	From South:	0.0%	NB
	From East:	0.0%	WB
	From West:	0.0%	EB

Location: University Way/ Water Street
City/Town: Ellensburg
Checker: DM
Weather: Rain
Job: University Way Channelization
Date: 13-Oct-09
Start Time: 4:00 PM
Pk Hr: 4:30 PM 5:30 PM
15 Min. Adj Factor; F(adj)= 1.0000 (15 min/# of minutes counted)

END	FROM: NORTH					FROM: EAST				
TIME	RIGHT	THRU	LEFT	TOTAL	TRUCKS	RIGHT	THRU	LEFT	TOTAL	TRUCKS
4:15 PM	11	48	10	69	0	9	87	21	117	0
4:30 PM	11	29	5	45	0	16	73	21	110	0
4:45 PM	16	39	11	66	0	17	89	22	128	0
5:00 PM	14	47	6	67	0	22	88	12	122	0
5:15 PM	9	48	14	71	0	22	90	23	135	0
5:30 PM	14	51	11	76	0	17	90	24	131	0
5:45 PM	11	37	14	62	0	23	85	20	128	0
6:00 PM	15	48	10	73	0	18	68	13	99	0
PK HR	53	185	42	280	0	78	357	81	516	0
Adj HR	53	185	42	280	0	78	357	81	516	0

END	FROM: SOUTH					FROM: WEST				
TIME	RIGHT	THRU	LEFT	TOTAL	TRUCKS	RIGHT	THRU	LEFT	TOTAL	TRUCKS
4:15 PM	16	50	25	91	0	15	58	8	81	0
4:30 PM	15	33	15	63	0	23	78	4	105	0
4:45 PM	23	52	21	96	0	18	63	6	87	0
5:00 PM	22	67	17	106	0	15	76	3	94	0
5:15 PM	21	74	24	119	0	24	69	5	98	0
5:30 PM	14	69	21	104	0	18	81	8	107	0
5:45 PM	14	68	16	98	0	7	68	7	82	0
6:00 PM	27	56	17	100	0	14	61	8	83	0
PK HR	80	262	83	425	0	75	289	22	386	0
Adj HR	80	262	83	425	0	75	289	22	386	0

END TIME	15 Min TOTALS
16:15	358
16:30	323
16:45	377
17:00	389
17:15	423
17:30	418
17:45	370
18:00	355

Time Start -	End	hr vol	pk hr?
16:00	17:00	1447	no
16:15	17:15	1512	no
16:30	17:30	1607	YES
16:45	17:45	1600	no
17:00	18:00	1566	no

INTERSECTION: University Way/ Water Street
PEAK HOUR: 4:30 PM 5:30 PM
DATE: 13-Oct-09
SOURCE: DN Traffic

PEAK HOUR DIRECTIONAL LEG VOLUMES

280	362
493	516
386	411
341	425

PEAK HOUR APPROACH VOLUME MOVEMENTS

				280				
			53	185	42			
			RIGHT	THRU	LEFT			
	22	LEFT		*NORTH*		RIGHT	78	
386	289	THRU	*WEST*		*EAST*	THRU	357	516
	75	RIGHT		*SOUTH*		LEFT	81	
			LEFT	THRU	RIGHT			
			83	262	80			
				425				

ADJUSTMENT FACTORS DERIVED FROM COUNT

Peak Hour Factors:	From North:	0.92	SB
	From South:	0.89	NB
	From East:	0.96	WB
	From West:	0.90	EB
	Total	0.95	
Percent Trucks & Buses:	From North:	0.0%	SB
	From South:	0.0%	NB
	From East:	0.0%	WB
	From West:	0.0%	EB

Location: University Way/Pine Street
Checker: DM
Date: 27-Oct-09
15 Min. Adj Factor; F(adj)= 1.0000 (15 min/# of minutes counted)

Weather: Clear
Start Time: 4:00 PM

City/Town: Ellensburg
Job: University Way Channelization
Pk Hr: 5:00 PM 6:00 PM

END TIME	FROM: NORTH RIGHT	THRU	LEFT	TOTAL	TRUCKS	FROM: EAST RIGHT	THRU	LEFT	TOTAL	TRUCKS
4:15 PM	0	0	0	0	0	0	138	4	142	0
4:30 PM	0	0	0	0	0	0	132	6	138	0
4:45 PM	0	0	0	0	0	0	123	2	125	0
5:00 PM	0	0	0	0	0	0	125	1	126	0
5:15 PM	0	0	0	0	0	0	160	0	160	0
5:30 PM	0	0	0	0	0	0	125	1	126	0
5:45 PM	0	0	0	0	0	0	141	3	144	0
6:00 PM	0	0	0	0	0	0	133	8	141	0
PK HR	0	0	0	0	0	0	559	12	571	0
Adj HR	0	0	0	0	0	0	559	12	571	0

END TIME	FROM: SOUTH RIGHT	THRU	LEFT	TOTAL	TRUCKS	FROM: WEST RIGHT	THRU	LEFT	TOTAL	TRUCKS
4:15 PM	7	0	0	7	0	6	127	0	133	0
4:30 PM	3	0	2	5	0	4	122	0	126	0
4:45 PM	3	0	0	3	0	4	137	0	141	0
5:00 PM	4	0	1	5	0	5	129	0	134	0
5:15 PM	4	0	3	7	0	5	160	0	165	0
5:30 PM	5	0	1	6	0	3	129	0	132	0
5:45 PM	5	0	0	5	0	5	113	0	118	0
6:00 PM	7	0	1	8	0	3	128	0	131	0
PK HR	21	0	5	26	0	16	530	0	546	0
Adj HR	21	0	5	26	0	16	530	0	546	0

END TIME	15 Min TOTALS
16:15	282
16:30	269
16:45	269
17:00	265
17:15	332
17:30	264
17:45	267
18:00	280

Time Start -	End	hr vol	pk hr?
16:00	17:00	1085	no
16:15	17:15	1135	no
16:30	17:30	1130	no
16:45	17:45	1128	no
17:00	18:00	1143	YES

INTERSECTION: University Way/Pine Street
PEAK HOUR: 5:00 PM 6:00 PM
DATE: 27-Oct-09
SOURCE: DN Traffic

PEAK HOUR DIRECTIONAL LEG VOLUMES

0 | 0	
564	571
546	551
28 | 26	

PEAK HOUR APPROACH VOLUME MOVEMENTS

					0					
				0	0	0				
				RIGHT	THRU	LEFT				
	0	LEFT			*NORTH*			RIGHT	0	
546	530	THRU		*WEST*		*EAST*		THRU	559	571
	16	RIGHT			*SOUTH*			LEFT	12	
				LEFT	THRU	RIGHT				
				5	0	21				
					26					

ADJUSTMENT FACTORS DERIVED FROM COUNT

Peak Hour Factors:	From North:	n/a	SB
	From South:	0.81	NB
	From East:	0.89	WB
	From West:	0.83	EB
	Total	0.86	
Percent Trucks & Buses:	From North:	n/a	SB
	From South:	0.0%	NB
	From East:	0.0%	WB
	From West:	0.0%	EB

Location: University Way/E Street
Checker: DM
Date: 21-Oct-09
15 Min. Adj Factor; F(adj)= 1.0000 (15 min/# of minutes counted)

Weather: Cool &Rainy
Start Time: 4:00 PM

City/Town: Ellensburg
Job: University Way Channelization
Pk Hr: 4:45 PM 5:45 PM

END TIME	FROM: NORTH RIGHT	THRU	LEFT	TOTAL	TRUCKS	FROM: EAST RIGHT	THRU	LEFT	TOTAL	TRUCKS
4:15 PM	0	0	0	0	0	0	147	0	147	0
4:30 PM	0	0	0	0	0	0	129	0	129	0
4:45 PM	0	0	0	0	0	0	108	0	108	0
5:00 PM	0	0	0	0	0	0	155	0	155	0
5:15 PM	0	0	0	0	0	0	163	0	163	0
5:30 PM	0	0	0	0	0	0	155	0	155	0
5:45 PM	0	0	0	0	0	0	104	0	104	0
6:00 PM	0	0	0	0	0	0	139	0	139	0
PK HR	0	0	0	0	0	0	577	0	577	0
Adj HR	0	0	0	0	0	0	577	0	577	0

END TIME	FROM: SOUTH RIGHT	THRU	LEFT	TOTAL	TRUCKS	FROM: WEST RIGHT	THRU	LEFT	TOTAL	TRUCKS
4:15 PM	0	0	0	0	0	0	161	0	161	0
4:30 PM	0	0	0	0	0	0	111	0	111	0
4:45 PM	0	0	0	0	0	0	128	0	128	0
5:00 PM	0	0	0	0	0	0	159	0	159	0
5:15 PM	0	0	0	0	0	0	177	0	177	0
5:30 PM	0	0	0	0	0	0	171	0	171	0
5:45 PM	0	0	0	0	0	0	136	0	136	0
6:00 PM	0	0	0	0	0	0	129	0	129	0
PK HR	0	0	0	0	0	0	643	0	643	0
Adj HR	0	0	0	0	0	0	643	0	643	0

END TIME	15 Min TOTALS
16:15	308
16:30	240
16:45	236
17:00	314
17:15	340
17:30	326
17:45	240
18:00	268

Time Start -	End	hr vol	pk hr?
16:00	17:00	1098	no
16:15	17:15	1130	no
16:30	17:30	1216	no
16:45	17:45	1220	YES
17:00	18:00	1174	no

INTERSECTION: University Way/E Street
PEAK HOUR: 4:45 PM 5:45 PM
DATE: 21-Oct-09
SOURCE: DN Traffic

PEAK HOUR DIRECTIONAL LEG VOLUMES

0 | 0	
577	577
643	643
0 | 0	

PEAK HOUR APPROACH VOLUME MOVEMENTS

				0						
			0	0	0					
			RIGHT	THRU	LEFT					
	0	LEFT		*NORTH*			RIGHT	0		
643	643	THRU	*WEST*		*EAST*		THRU	577	577	
	0	RIGHT		*SOUTH*			LEFT	0		
			LEFT	THRU	RIGHT					
			0	0	0					
				0						

ADJUSTMENT FACTORS DERIVED FROM COUNT

Peak Hour Factors:	From North:	n/a	SB
	From South:	n/a	NB
	From East:	0.88	WB
	From West:	0.91	EB
	Total	0.90	
Percent Trucks & Buses:	From North:	n/a	SB
	From South:	n/a	NB
	From East:	0.0%	WB
	From West:	0.0%	EB

Location: University Way/Chestnut Street
Checker: DM
Date: 20-Oct-09
15 Min. Adj Factor; F(adj)= 1.0000 (15 min/# of minutes counted)

Weather: Cool & dry
Start Time: 4:00 PM

City/Town: Ellensburg
Job: University Way Channelization
Pk Hr: 5:00 PM 6:00 PM

END TIME	FROM: NORTH RIGHT	THRU	LEFT	TOTAL	TRUCKS	FROM: EAST RIGHT	THRU	LEFT	TOTAL	TRUCKS
4:15 PM	17	10	6	33	0	2	119	50	171	0
4:30 PM	19	7	1	27	0	0	87	36	123	0
4:45 PM	12	13	2	27	0	1	75	45	121	0
5:00 PM	12	8	9	29	0	0	109	42	151	0
5:15 PM	30	18	12	60	0	0	102	60	162	0
5:30 PM	14	10	4	28	0	2	100	46	148	0
5:45 PM	18	6	3	27	0	0	132	48	180	0
6:00 PM	9	5	1	15	0	0	100	58	158	0
PK HR	71	39	20	130	0	2	434	212	648	0
Adj HR	71	39	20	130	0	2	434	212	648	0

END TIME	FROM: SOUTH RIGHT	THRU	LEFT	TOTAL	TRUCKS	FROM: WEST RIGHT	THRU	LEFT	TOTAL	TRUCKS
4:15 PM	52	10	18	80	0	8	109	19	136	0
4:30 PM	47	8	16	71	0	19	97	9	125	0
4:45 PM	69	4	19	92	0	14	109	17	140	0
5:00 PM	59	7	14	80	0	14	90	18	122	0
5:15 PM	70	5	19	94	0	35	143	12	190	0
5:30 PM	54	5	19	78	0	23	132	13	168	0
5:45 PM	74	6	18	98	0	22	124	13	159	0
6:00 PM	55	5	19	79	0	20	118	12	150	0
PK HR	253	21	75	349	0	100	517	50	667	0
Adj HR	253	21	75	349	0	100	517	50	667	0

END TIME	15 Min TOTALS
16:15	420
16:30	346
16:45	380
17:00	382
17:15	506
17:30	422
17:45	464
18:00	402

Time Start -	End	hr vol	pk hr?
16:00	17:00	1528	no
16:15	17:15	1614	no
16:30	17:30	1690	no
16:45	17:45	1774	no
17:00	18:00	1794	YES

DN Traffic Enterprises

INTERSECTION: University Way/Chestnut Street
PEAK HOUR: 5:00 PM 6:00 PM
DATE: 20-Oct-09
SOURCE: DN Traffic

PEAK HOUR DIRECTIONAL LEG VOLUMES

130	73
580	648
667	790
351	349

PEAK HOUR APPROACH VOLUME MOVEMENTS

					130					
				71	39	20				
				RIGHT	THRU	LEFT				
	50	LEFT			*NORTH*			RIGHT	2	
667	517	THRU	*WEST*			*EAST*		THRU	434	648
	100	RIGHT			*SOUTH*			LEFT	212	
				LEFT	THRU	RIGHT				
				75	21	253				
					349					

ADJUSTMENT FACTORS DERIVED FROM COUNT

Peak Hour Factors:	From North:	0.54	SB
	From South:	0.89	NB
	From East:	0.90	WB
	From West:	0.88	EB
	Total	0.89	
Percent Trucks & Buses:	From North:	0.0%	SB
	From South:	0.0%	NB
	From East:	0.0%	WB
	From West:	0.0%	EB

Location: University Way/Walnut Street
Checker: DM
Date: 13-Oct-09
15 Min. Adj Factor; F(adj)= 1.0000 (15 min/# of minutes counted)

Weather: Rain
Start Time: 4:00 PM

City/Town: Ellensburg
Job: University Way Channelization
Pk Hr: 4:30 PM 5:30 PM

END TIME	FROM: NORTH RIGHT	THRU	LEFT	TOTAL	TRUCKS	FROM: EAST RIGHT	THRU	LEFT	TOTAL	TRUCKS
4:15 PM	0	0	0	0	0	0	136	1	137	0
4:30 PM	0	0	0	0	0	0	123	3	126	0
4:45 PM	0	0	0	0	0	0	135	10	145	0
5:00 PM	0	0	0	0	0	0	147	3	150	0
5:15 PM	0	0	0	0	0	0	166	3	169	0
5:30 PM	0	0	0	0	0	0	137	4	141	0
5:45 PM	0	0	0	0	0	0	116	2	118	0
6:00 PM	0	0	0	0	0	0	132	1	133	0
PK HR	0	0	0	0	0	0	585	20	605	0
Adj HR	0	0	0	0	0	0	585	20	605	0

END TIME	FROM: SOUTH RIGHT	THRU	LEFT	TOTAL	TRUCKS	FROM: WEST RIGHT	THRU	LEFT	TOTAL	TRUCKS
4:15 PM	7	0	3	10	0	3	124	0	127	3
4:30 PM	3	0	3	6	0	3	113	0	116	0
4:45 PM	3	0	2	5	0	8	136	0	144	5
5:00 PM	4	0	2	6	0	4	134	0	138	0
5:15 PM	4	0	0	4	0	4	165	0	169	3
5:30 PM	5	0	4	9	0	4	140	0	144	1
5:45 PM	5	0	6	11	0	4	151	0	155	0
6:00 PM	7	0	4	11	0	4	133	0	137	0
PK HR	16	0	8	24	0	20	575	0	595	9
Adj HR	16	0	8	24	0	20	575	0	595	9

END TIME	15 Min TOTALS
16:15	274
16:30	248
16:45	294
17:00	294
17:15	342
17:30	294
17:45	284
18:00	281

Time Start -	End	hr vol	pk hr?
16:00	17:00	1110	no
16:15	17:15	1178	no
16:30	17:30	1224	YES
16:45	17:45	1214	no
17:00	18:00	1201	no

INTERSECTION: University Way/Walnut Street
PEAK HOUR: 4:30 PM 5:30 PM
DATE: 13-Oct-09
SOURCE: DN Traffic

PEAK HOUR DIRECTIONAL LEG VOLUMES

0 | 0 593	605
595	591 40 | 24

PEAK HOUR APPROACH VOLUME MOVEMENTS

					0					
				0	0	0				
				RIGHT	THRU	LEFT				
	0	LEFT			*NORTH*			RIGHT	0	
595	575	THRU		*WEST*		*EAST*		THRU	585	605
	20	RIGHT			*SOUTH*			LEFT	20	
				LEFT	THRU	RIGHT				
				8	0	16				
					24					

ADJUSTMENT FACTORS DERIVED FROM COUNT

Peak Hour Factors:	From North:	n/a	SB
	From South:	0.67	NB
	From East:	0.89	WB
	From West:	0.88	EB
	Total	0.89	
Percent Trucks & Buses:	From North:	n/a	SB
	From South:	0.0%	NB
	From East:	0.0%	WB
	From West:	1.5%	EB

Location: University Way/Main Street
Checker: DM
Date: 14-Oct-09
15 Min. Adj Factor; F(adj)= 1.0000 (15 min/# of minutes counted)

Weather: Clear
Start Time: 4:00 PM

City/Town: Ellensburg
Job: University Way Channelization
Pk Hr: 4:45 PM 5:45 PM

END TIME	FROM: NORTH RIGHT	THRU	LEFT	TOTAL	TRUCKS	FROM: EAST RIGHT	THRU	LEFT	TOTAL	TRUCKS
4:15 PM	8	32	4	44	0	9	82	63	154	0
4:30 PM	10	32	2	44	0	6	65	50	121	0
4:45 PM	14	21	4	39	0	4	79	43	126	0
5:00 PM	4	26	2	32	0	5	84	48	137	0
5:15 PM	4	41	10	55	0	13	106	51	170	0
5:30 PM	11	21	7	39	0	15	99	58	172	0
5:45 PM	4	25	5	34	0	8	87	50	145	0
6:00 PM	11	31	4	46	0	7	69	45	121	0
PK HR	23	113	24	160	0	41	376	207	624	0
Adj HR	23	113	24	160	0	41	376	207	624	0

END TIME	FROM: SOUTH RIGHT	THRU	LEFT	TOTAL	TRUCKS	FROM: WEST RIGHT	THRU	LEFT	TOTAL	TRUCKS
4:15 PM	16	33	32	81	0	14	60	3	77	0
4:30 PM	22	30	43	95	0	33	81	5	119	0
4:45 PM	32	45	42	119	0	17	67	7	91	0
5:00 PM	31	41	54	126	0	34	74	3	111	0
5:15 PM	29	40	50	119	0	21	106	7	134	0
5:30 PM	25	49	40	114	0	19	93	9	121	0
5:45 PM	43	38	39	120	0	15	76	7	98	0
6:00 PM	36	34	42	112	0	22	71	7	100	0
PK HR	128	168	183	479	0	89	349	26	464	0
Adj HR	128	168	183	479	0	89	349	26	464	0

END TIME	15 Min TOTALS
16:15	356
16:30	379
16:45	375
17:00	406
17:15	478
17:30	446
17:45	397
18:00	379

Time Start -	End	hr vol	pk hr?
16:00	17:00	1516	no
16:15	17:15	1638	no
16:30	17:30	1705	no
16:45	17:45	1727	YES
17:00	18:00	1700	no

INTERSECTION: University Way/Main Street
PEAK HOUR: 4:45 PM 5:45 PM
DATE: 14-Oct-09
SOURCE: DN Traffic

PEAK HOUR DIRECTIONAL LEG VOLUMES

160	235
582	624
464	501
409	479

PEAK HOUR APPROACH VOLUME MOVEMENTS

					160					
				23	113	24				
				RIGHT	THRU	LEFT				
	26	LEFT			*NORTH*			RIGHT	41	
464	349	THRU		*WEST*		*EAST*		THRU	376	624
	89	RIGHT			*SOUTH*			LEFT	207	
				LEFT	THRU	RIGHT				
				183	168	128				
					479					

ADJUSTMENT FACTORS DERIVED FROM COUNT

Peak Hour Factors:	From North:	0.73	SB
	From South:	0.95	NB
	From East:	0.91	WB
	From West:	0.87	EB
	Total	0.90	
Percent Trucks & Buses:	From North:	0.0%	SB
	From South:	0.0%	NB
	From East:	0.0%	WB
	From West:	0.0%	EB

Location: University Way/D Street
Checker: DM
Date: 16-Oct-09
15 Min. Adj Factor; F(adj)= 1.0000 (15 min/# of minutes counted)

Weather: Clear
Start Time: 2:30 PM

City/Town: Ellensburg
Job: University Way Channelization
Pk Hr: 3:15 PM 4:15 PM

END TIME	FROM: NORTH RIGHT	THRU	LEFT	TOTAL	TRUCKS	FROM: EAST RIGHT	THRU	LEFT	TOTAL	TRUCKS
2:45 PM	47	22	24	93	0	23	162	1	186	0
3:00 PM	52	29	24	105	0	13	116	2	131	0
3:15 PM	62	17	24	103	0	23	164	1	188	0
3:30 PM	39	19	17	75	0	23	122	6	151	0
3:45 PM	35	25	34	94	0	20	142	5	167	0
4:00 PM	44	24	21	89	0	19	115	4	138	0
4:15 PM	57	32	24	113	0	20	147	1	168	0
4:30 PM	38	16	13	67	0	11	120	6	137	0
PK HR	175	100	96	371	0	82	526	16	624	0
Adj HR	175	100	96	371	0	82	526	16	624	0

END TIME	FROM: SOUTH RIGHT	THRU	LEFT	TOTAL	TRUCKS	FROM: WEST RIGHT	THRU	LEFT	TOTAL	TRUCKS
2:45 PM	2	14	3	19	0	3	105	27	135	0
3:00 PM	4	7	7	18	0	0	98	31	129	0
3:15 PM	6	14	0	20	0	2	115	29	146	0
3:30 PM	4	7	5	16	0	3	105	28	136	0
3:45 PM	4	15	1	20	0	4	99	28	131	0
4:00 PM	1	17	1	19	0	2	123	23	148	0
4:15 PM	2	23	5	30	0	3	125	38	166	0
4:30 PM	0	17	4	21	0	3	108	22	133	0
PK HR	11	62	12	85	0	12	452	117	581	0
Adj HR	11	62	12	85	0	12	452	117	581	0

END TIME	15 Min TOTALS
14:45	433
15:00	383
15:15	457
15:30	378
15:45	412
16:00	394
16:15	477
16:30	358

Time Start -	End	hr vol	pk hr?
14:30	15:30	1651	no
14:45	15:45	1630	no
15:00	16:00	1641	no
15:15	16:15	1661	YES
15:30	16:30	1641	no

DN Traffic Enterprises

INTERSECTION: University Way/D Street
PEAK HOUR: 3:15 PM 4:15 PM
DATE: 16-Oct-09
SOURCE: DN Traffic

PEAK HOUR DIRECTIONAL LEG VOLUMES

371	261
713	624
581	559
128	85

PEAK HOUR APPROACH VOLUME MOVEMENTS

					371					
				175	100	96				
				RIGHT	THRU	LEFT				
	117	LEFT			*NORTH*		RIGHT	82		
581	452	THRU	*WEST*			*EAST*	THRU	526	624	
	12	RIGHT			*SOUTH*		LEFT	16		
				LEFT	THRU	RIGHT				
				12	62	11				
					85					

ADJUSTMENT FACTORS DERIVED FROM COUNT

Peak Hour Factors:	From North:	0.82	SB
	From South:	0.71	NB
	From East:	0.93	WB
	From West:	0.88	EB
	Total	0.87	
Percent Trucks & Buses:	From North:	0.0%	SB
	From South:	0.0%	NB
	From East:	0.0%	WB
	From West:	0.0%	EB

DN Traffic Enterprises

Location: University Way/Alder Street
Checker: DM
Date: 23-Oct-09
15 Min. Adj Factor; F(adj)= 1.0000 (15 min/# of minutes counted)

Weather: Sunny
Start Time: 2:30 PM

City/Town: Ellensburg
Job: University Way Channelization
Pk Hr: 3:00 PM 4:00 PM

END TIME	FROM: NORTH RIGHT	THRU	LEFT	TOTAL	TRUCKS	FROM: EAST RIGHT	THRU	LEFT	TOTAL	TRUCKS
2:45 PM	69	1	23	93	0	5	103	0	108	0
3:00 PM	95	1	18	114	0	9	90	0	99	0
3:15 PM	65	1	15	81	0	11	111	2	124	0
3:30 PM	53	0	19	72	0	11	88	1	100	0
3:45 PM	58	2	21	81	0	14	60	0	74	0
4:00 PM	73	2	15	90	0	15	97	0	112	0
4:15 PM	90	0	19	109	0	14	78	0	92	0
4:30 PM	63	0	9	72	0	9	93	0	102	0
PK HR	249	5	70	324	0	51	356	3	410	0
Adj HR	249	5	70	324	0	51	356	3	410	0

END TIME	FROM: SOUTH RIGHT	THRU	LEFT	TOTAL	TRUCKS	FROM: WEST RIGHT	THRU	LEFT	TOTAL	TRUCKS
2:45 PM	1	0	1	2	0	2	95	48	145	0
3:00 PM	0	0	0	0	0	4	87	59	150	0
3:15 PM	5	2	3	10	0	3	114	52	169	0
3:30 PM	1	1	0	2	0	4	102	62	168	0
3:45 PM	2	1	1	4	0	2	111	64	177	0
4:00 PM	3	1	2	6	0	2	106	69	177	0
4:15 PM	1	1	0	2	0	1	111	60	172	0
4:30 PM	2	1	1	4	0	3	101	59	163	0
PK HR	11	5	6	22	0	11	433	247	691	0
Adj HR	11	5	6	22	0	11	433	247	691	0

END TIME	15 Min TOTALS
14:45	348
15:00	363
15:15	384
15:30	342
15:45	336
16:00	385
16:15	375
16:30	341

Time Start -	End	hr vol	pk hr?
14:30	15:30	1437	no
14:45	15:45	1425	no
15:00	16:00	1447	YES
15:15	16:15	1438	no
15:30	16:30	1437	no

DN Traffic Enterprises

INTERSECTION: University Way/Alder Street
PEAK HOUR: 3:00 PM 4:00 PM
DATE: 23-Oct-09
SOURCE: DN Traffic

PEAK HOUR DIRECTIONAL LEG VOLUMES

324	303
611	410
691	514
19	22

PEAK HOUR APPROACH VOLUME MOVEMENTS

					324					
				249	5	70				
				RIGHT	THRU	LEFT				
	247	LEFT			*NORTH*			RIGHT	51	
691	433	THRU		*WEST*		*EAST*		THRU	356	410
	11	RIGHT			*SOUTH*			LEFT	3	
				LEFT	THRU	RIGHT				
				6	5	11				
					22					

ADJUSTMENT FACTORS DERIVED FROM COUNT

Peak Hour Factors:	From North:	0.90	SB
	From South:	0.55	NB
	From East:	0.83	WB
	From West:	0.98	EB
	Total	0.94	
Percent Trucks & Buses:	From North:	0.0%	SB
	From South:	0.0%	NB
	From East:	0.0%	WB
	From West:	0.0%	EB

DN Traffic Enterprises

Location: University Way/Main Street
Checker: DM
Date: 23-Oct-09
15 Min. Adj Factor; F(adj)= 1.0000 (15 min/# of minutes counted)

Weather: Clear
Start Time: 2:30 PM

City/Town: Ellensburg
Job: University Way Channelization
Pk Hr: 2:30 PM 3:30 PM

END TIME	FROM: NORTH RIGHT	THRU	LEFT	TOTAL	TRUCKS	FROM: EAST RIGHT	THRU	LEFT	TOTAL	TRUCKS
2:45 PM	11	36	5	52	0	9	94	68	171	0
3:00 PM	9	22	3	34	0	10	73	72	155	0
3:15 PM	5	26	6	37	0	5	113	68	186	0
3:30 PM	8	31	9	48	0	4	112	73	189	0
3:45 PM	6	14	5	25	0	5	74	64	143	0
4:00 PM	6	24	3	33	0	9	95	73	177	0
4:15 PM	11	34	6	51	0	7	85	70	162	0
4:30 PM	7	25	7	39	0	9	102	66	177	0
PK HR	33	115	23	171	0	28	392	281	701	0
Adj HR	33	115	23	171	0	28	392	281	701	0

END TIME	FROM: SOUTH RIGHT	THRU	LEFT	TOTAL	TRUCKS	FROM: WEST RIGHT	THRU	LEFT	TOTAL	TRUCKS
2:45 PM	36	32	37	105	0	29	81	11	121	0
3:00 PM	46	34	32	112	0	32	78	6	116	0
3:15 PM	25	33	25	83	0	27	78	6	111	0
3:30 PM	23	25	50	98	0	28	86	5	119	0
3:45 PM	32	36	36	104	0	28	64	5	97	0
4:00 PM	44	35	38	117	0	25	77	8	110	0
4:15 PM	49	43	44	136	0	25	83	10	118	0
4:30 PM	28	31	35	94	0	24	94	9	127	0
PK HR	130	124	144	398	0	116	323	28	467	0
Adj HR	130	124	144	398	0	116	323	28	467	0

END TIME	15 Min TOTALS
14:45	449
15:00	417
15:15	417
15:30	454
15:45	369
16:00	437
16:15	467
16:30	437

Time Start -	End	hr vol	pk hr?
14:30	15:30	1737	YES
14:45	15:45	1657	no
15:00	16:00	1677	no
15:15	16:15	1727	no
15:30	16:30	1710	no

INTERSECTION: University Way/Main Street
PEAK HOUR: 2:30 PM 3:30 PM
DATE: 23-Oct-09
SOURCE: DN Traffic

PEAK HOUR DIRECTIONAL LEG VOLUMES

171	180
569	701
467	476
512	398

PEAK HOUR APPROACH VOLUME MOVEMENTS

					171					
				33	115	23				
				RIGHT	THRU	LEFT				
	28	LEFT			*NORTH*			RIGHT	28	
467	323	THRU	*WEST*			*EAST*		THRU	392	701
	116	RIGHT			*SOUTH*			LEFT	281	
				LEFT	THRU	RIGHT				
				144	124	130				
					398					

ADJUSTMENT FACTORS DERIVED FROM COUNT

Peak Hour Factors:	From North:	0.82	SB
	From South:	0.89	NB
	From East:	0.93	WB
	From West:	0.96	EB
	Total	0.96	
Percent Trucks & Buses:	From North:	0.0%	SB
	From South:	0.0%	NB
	From East:	0.0%	WB
	From West:	0.0%	EB

DN Traffic Enterprises

University Way Channelization Study

University Way/Water Street

PM Peak Hour: 4:30 PM - 5:30 PM

Date Collected: 10/13/2009

	2005 PM Peak	2009 PM Peak	2009 Annual Average							Peak Hour Factor	Percent Trucks/Busses
EBLT	36	22	26								
EBT	344	289	338							0.90	0.00
EBRT	56	75	88								
NBLT	65	83	97								
NBT	208	262	307							0.89	0.00
NBRT	80	80	94								
WBLT	64	81	95								
WBT	389	357	418							0.96	0.00
WBRT	99	78	91								
SBLT	34	42	49								
SBT	152	185	216							0.92	0.00
SBRT	55	53	62								
	1582	1607	1881	0	0	0	0	0	0		

Growth from 2005 0.0%

University Way Channelization Study

University Way/Main Street

PM Peak Hour: 4:45 PM - 5:45 PM

Date Collected: 10/14/2009

	2005 PM Peak	2009 PM Peak	2009 Friday Peak	2009 Annual Average					Peak Hour Factor - Friday	Peak Hour Factor	Percent Trucks/Busses
EBLT	28	26	28	30							
EBT	355	349	323	408					0.96	0.90	0.00
EBRT	98	89	116	104							
NBLT	195	183	144	214							
NBT	216	168	124	197					0.89	0.89	0.00
NBRT	166	128	130	150							
WBLT	185	207	281	242							
WBT	349	376	392	440					0.93	0.96	0.00
WBRT	58	41	28	48							
SBLT	54	24	23	28							
SBT	165	113	115	132					0.82	0.92	0.00
SBRT	30	23	33	27							
	1899	1727	1737	2020	0	0	0	0			

0.0%

University Way Channelization Study

University Way/Pine Street

PM Peak Hour: 5:00 PM - 6:00 PM

Date Collected: 10/27/2009

	2005 PM Peak	2009 PM Peak	2009 Friday Peak	2009Annual Average						Peak Hour Factor	Percent Trucks/Busses
EBLT		0		0							
EBT		530		620						0.83	0.00
EBRT		16		19							
NBLT		5		6							
NBT		0		0						0.81	0.00
NBRT		21		25							
WBLT		12		14							
WBT		559		654						0.89	0.00
WBRT		0		0							
SBLT		0		0							
SBT		0		0						0.00	0.00
SBRT		0		0							
	0	1143	0	1338	0	0	0	0	0		

Growth from 2005 0.0%

University Way Channelization Study

University Way/D Street

PM Peak Hour: 4:30 PM - 5:30 PM

Date Collected: 10/16/2009

	2005 PM Peak	2009 PM Peak	2009 Friday Peak	2009 Annual Average					Peak Hour Factor - Friday	Peak Hour Factor	Percent Trucks/Busses
EBLT	100	98	117	115							
EBT	433	450	452	527					0.88	0.93	0.00
EBRT	8	7	12	8							
NBLT	13	17	12	20							
NBT	88	53	62	62					0.71	0.77	0.00
NBRT	18	16	11	19							
WBLT	25	22	16	26							
WBT	454	453	526	530					0.93	0.91	0.00
WBRT	74	77	82	90							
SBLT	89	93	96	109							
SBT	115	113	100	132					0.82	0.81	0.00
SBRT	141	198	175	232							
	1558	1597	1661	1870	0	0	0	0	b		

Growth from 2005 0.0%

University Way Channelization Study

University Way/E Street

PM Peak Hour: 4:45 PM - 5:45 PM

Date Collected: 10/21/2009

	2005 PM Peak	2009 PM Peak	2009 Friday Peak	2009 Annual Average						Peak Hour Factor	Percent Trucks/Busses
EBLT											
EBT		643		752						0.91	0.00
EBRT											
NBLT											
NBT											0.00
NBRT											
WBLT											
WBT		577		675						0.88	0.00
WBRT											
SBLT											
SBT											0.00
SBRT											
	0	1220	0	1427	0	0	0	0	0		

0.0%

University Way Channelization Study

University Way/Walnut Street

PM Peak Hour: 4:30 PM -5:30 PM

Date Collected: 10/13/2009

	2005 PM Peak	2009 PM Peak	2009 Friday Peak	2009 Annual Average						Peak Hour Factor	Percent Trucks/Busses
EBLT	0	0		0							
EBT	575	575		673						0.88	0.00
EBRT	26	20		23							
NBLT	21	8		9							
NBT	0	0		0						0.67	0.00
NBRT	20	16		19							
WBLT	19	20		23							
WBT	574	585		684						0.89	0.00
WBRT	0	0		0							
SBLT	0	0		0							
SBT	0	0		0						0.00	0.00
SBRT	0	0		0							
	1235	1224	0	1431	0	0	0	0	0		

Growth from 2005 0.0%

University Way Channelization Study

University Way/Chestnut Street

PM Peak Hour: 5:00 PM - 6:00 PM

Date Collected: 10/20/2009

	2005 PM Peak	2009 PM Peak	2009 Friday Peak	2009 Annual Average						Peak Hour Factor	Percent Trucks/Busses
EBLT	86	50		59							
EBT	510	517		605						0.88	0.00
EBRT	68	100		117							
NBLT	92	75		88							
NBT	50	21		25						0.89	0.00
NBRT	218	253		296							
WBLT	180	212		248							
WBT	474	434		508						0.90	0.00
WBRT	25	2		2							
SBLT	31	20		23							
SBT	44	39		46						0.54	0.00
SBRT	33	71		83							
	1811	1794	0	2100	0	0	0	0	0		

Growth from 2005 0.0%

University Way Channelization Study

University Way/Alder Street

PM Peak Hour: 4:30 PM - 5:30 PM

Date Collected: 10/22/2009

	2005 PM Peak	2009 PM Peak	2009 Friday Peak	2009 Annual Average					Peak Hour Factor - Friday	Peak Hour Factor	Percent Trucks/Busses
EBLT		245	247	287							
EBT		499	433	584					0.98	0.93	0.00
EBRT		11	11	13							
NBLT		8	6	9							
NBT		1	5	1					0.55	0.77	0.00
NBRT		0	11	0							
WBLT		2	3	2							
WBT		302	356	353					0.83	0.91	0.00
WBRT		48	51	56							
SBLT		75	70	88							
SBT		7	5	8					0.90	0.81	0.00
SBRT		227	249	266							
	0	1425	1447	1667	0	0	0	0	3		

0.0%

- **LEVEL OF SERVICE**

Network Totals

Number of Intersections	8
Control Delay / Veh (s/v)	14
Queue Delay / Veh (s/v)	0
Total Delay / Veh (s/v)	14
Total Delay (hr)	52
Stops (#)	6795
Average Speed (mph)	16
Total Travel Time (hr)	116
Distance Traveled (mi)	1918
Fuel Consumed (gal)	155
Fuel Economy (mpg)	12.4
Unserved Vehicles (#)	0
Vehicles in dilemma zone (#)	0
Performance Index	71.4

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	26	338	88	95	418	91	97	307	94	49	216	62
Satd. Flow (prot)	0	3426	0	0	3430	0	1770	1798	0	1770	1801	0
Flt Permitted		0.896			0.734		0.556			0.433		
Satd. Flow (perm)	0	3079	0	0	2538	0	1036	1798	0	807	1801	0
Satd. Flow (RTOR)		53			37			32			30	
Peak Hour Factor	0.90	0.90	0.90	0.96	0.96	0.96	0.89	0.89	0.89	0.92	0.92	0.92
Adj. Flow (vph)	29	376	98	99	435	95	109	345	106	53	235	67
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	503	0	0	629	0	109	451	0	53	302	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	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	Perm			Perm			Perm			Perm		
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Detector Phase	4	4		8	8		2	2		6	6	
Switch Phase												
Minimum Initial (s)	10.0	10.0		4.0	4.0		10.0	10.0		4.0	4.0	
Minimum Split (s)	22.5	22.5		22.5	22.5		22.0	22.0		22.5	22.5	
Total Split (s)	30.0	30.0	0.0	30.0	30.0	0.0	35.0	35.0	0.0	35.0	35.0	0.0
Total Split (%)	46.2%	46.2%	0.0%	46.2%	46.2%	0.0%	53.8%	53.8%	0.0%	53.8%	53.8%	0.0%
Maximum Green (s)	25.5	25.5		25.5	25.5		30.5	30.5		30.5	30.5	
Yellow Time (s)	3.5	3.5		3.5	3.5		3.5	3.5		3.5	3.5	
All-Red Time (s)	1.0	1.0		1.0	1.0		1.0	1.0		1.0	1.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.5	4.5	4.0	4.5	4.5	4.0	4.5	4.5	4.0	4.5	4.5	4.0
Lead/Lag												

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Minimum Gap (s)	2.0	2.0		2.0	2.0		2.0	2.0		2.0	2.0	
Time Before Reduce (s)	10.0	10.0		10.0	10.0		10.0	10.0		10.0	10.0	
Time To Reduce (s)	10.0	10.0		10.0	10.0		10.0	10.0		10.0	10.0	
Recall Mode	None	None		None	None		C-Max	C-Max		None	None	
Walk Time (s)	7.0	7.0		7.0	7.0		7.0	7.0		7.0	7.0	
Flash Dont Walk (s)	11.0	11.0		9.0	9.0		8.0	8.0		8.0	8.0	
Pedestrian Calls (#/hr)	0	0		0	0		0	0		0	0	
Act Effct Green (s)		19.5			19.5		36.5	36.5		36.5	36.5	
Actuated g/C Ratio		0.30			0.30		0.56	0.56		0.56	0.56	
v/c Ratio		0.52			0.80		0.19	0.44		0.12	0.30	
Control Delay		18.1			14.1		9.6	10.4		9.2	8.7	
Queue Delay		0.0			0.0		0.0	0.0		0.0	0.0	
Total Delay		18.1			14.1		9.6	10.4		9.2	8.7	
LOS		B			B		A	B		A	A	
Approach Delay		18.1			14.1			10.3			8.8	
Approach LOS		B			B			B			A	
90th %ile Green (s)	25.3	25.3		25.3	25.3		30.7	30.7		30.7	30.7	
90th %ile Term Code	Hold	Hold		Gap	Gap		Coord	Coord		Coord	Coord	
70th %ile Green (s)	21.8	21.8		21.8	21.8		34.2	34.2		34.2	34.2	
70th %ile Term Code	Hold	Hold		Gap	Gap		Coord	Coord		Coord	Coord	
50th %ile Green (s)	19.6	19.6		19.6	19.6		36.4	36.4		36.4	36.4	
50th %ile Term Code	Hold	Hold		Gap	Gap		Coord	Coord		Coord	Coord	
30th %ile Green (s)	17.2	17.2		17.2	17.2		38.8	38.8		38.8	38.8	
30th %ile Term Code	Hold	Hold		Gap	Gap		Coord	Coord		Coord	Coord	
10th %ile Green (s)	13.8	13.8		13.8	13.8		42.2	42.2		42.2	42.2	
10th %ile Term Code	Hold	Hold		Gap	Gap		Coord	Coord		Coord	Coord	
Queue Length 50th (ft)		76			31		19	86		9	50	
Queue Length 95th (ft)		101			24		52	180		30	114	
Internal Link Dist (ft)		920			248			152			141	
Turn Bay Length (ft)							30			30		
Base Capacity (vph)		1240			1018		581	1023		453	1023	
Starvation Cap Reductn		0			0		0	0		0	0	
Spillback Cap Reductn		0			0		0	0		0	0	
Storage Cap Reductn		0			0		0	0		0	0	
Reduced v/c Ratio		0.41			0.62		0.19	0.44		0.12	0.30	

Intersection Summary

Cycle Length: 65
Actuated Cycle Length: 65
Offset: 41 (63%), Referenced to phase 2:NBTL, Start of Green
Natural Cycle: 45
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.80
Intersection Signal Delay: 13.1 — Intersection LOS: B
Intersection Capacity Utilization 70.3% — ICU Level of Service C
Analysis Period (min) 15

Splits and Phases: 5: University Way & Water Street

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	30	408	104	242	440	48	214	197	150	28	132	27
Satd. Flow (prot)	1770	3433	0	1770	3486	0	1770	1863	1583	1770	1863	1583
Flt Permitted	0.252			0.444			0.666			0.280		
Satd. Flow (perm)	469	3433	0	827	3486	0	1241	1863	1583	522	1863	1583
Satd. Flow (RTOR)		47			18				163			29
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)	33	443	113	263	478	52	233	214	163	30	143	29
Shared Lane Traffic (%)												
Lane Group Flow (vph)	33	556	0	263	530	0	233	214	163	30	143	29
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	1
Detector Template	Left	Thru		Left	Thru		Left	Thru	Right	Left	Thru	Right
Leading Detector (ft)	20	100		20	100		20	100	20	20	100	20
Trailing Detector (ft)	0	0		0	0		0	0	0	0	0	0
Detector 1 Position(ft)	0	0		0	0		0	0	0	0	0	0
Detector 1 Size(ft)	20	6		20	6		20	6	20	20	6	20
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
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			pm+pt			pm+pt		pm+ov	pm+pt		pm+ov
Protected Phases	5!	2!		3!	8!		7!	4!	3	1!	6!	5
Permitted Phases	2!			8!			4!		4	6!		6
Detector Phase	5	2		3	8		7	4	3	1	6	5
Switch Phase												
Minimum Initial (s)	3.0	5.0		3.0	5.0		3.0	5.0	3.0	3.0	5.0	3.0
Minimum Split (s)	8.0	21.5		8.0	20.5		8.0	23.5	8.0	8.0	21.5	8.0
Total Split (s)	8.0	21.5	0.0	12.0	22.5	0.0	13.0	23.5	12.0	8.0	21.5	8.0
Total Split (%)	12.3%	33.1%	0.0%	18.5%	34.6%	0.0%	20.0%	36.2%	18.5%	12.3%	33.1%	12.3%
Maximum Green (s)	3.5	17.0		7.5	18.0		8.5	19.0	7.5	3.5	17.0	3.5
Yellow Time (s)	3.5	3.5		3.5	3.5		3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	1.0	1.0		1.0	1.0		1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.5	4.5	4.0	4.5	4.5	4.0	4.5	4.5	4.5	4.5	4.5	4.5
Lead/Lag	Lag	Lead		Lead	Lag		Lead	Lag	Lead	Lag	Lead	Lag

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lead-Lag Optimize?	Yes	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	3.0
Minimum Gap (s)	0.2	0.2		0.2	0.2		0.2	0.2	0.2	0.2	0.2	0.2
Time Before Reduce (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Time To Reduce (s)	1.0	1.0		1.0	1.0		1.0	1.0	1.0	1.0	1.0	1.0
Recall Mode	None	C-Max		None	None		None	Max	None	None	C-Max	None
Walk Time (s)		5.0			5.0			5.0			5.0	
Flash Dont Walk (s)		12.0			10.0			14.0			12.0	
Pedestrian Calls (#/hr)		0			0			0			0	
Act Effct Green (s)	21.4	18.6		29.3	21.6		30.1	22.0	34.2	20.5	17.0	25.0
Actuated g/C Ratio	0.33	0.29		0.45	0.33		0.46	0.34	0.53	0.32	0.26	0.38
v/c Ratio	0.15	0.55		0.54	0.45		0.36	0.34	0.18	0.13	0.29	0.05
Control Delay	12.4	16.1		7.3	9.3		11.5	19.3	2.4	15.2	21.2	5.6
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	12.4	16.1		7.3	9.3		11.5	19.3	2.4	15.2	21.2	5.6
LOS	B	B		A	A		B	B	A	B	C	A
Approach Delay		15.9			8.7			11.8			18.1	
Approach LOS		B			A			B			B	
90th %ile Green (s)	3.5	17.0		7.5	18.0		8.5	19.0	7.5	3.5	17.0	3.5
90th %ile Term Code	Max	Coord		Max	Max		Max	MaxR	Max	Max	Coord	Max
70th %ile Green (s)	3.5	17.0		7.5	18.0		8.5	19.0	7.5	3.5	17.0	3.5
70th %ile Term Code	Max	Coord		Max	Hold		Max	MaxR	Max	Max	Coord	Max
50th %ile Green (s)	3.5	25.0		7.5	18.0		8.5	19.0	7.5	0.0	17.0	3.5
50th %ile Term Code	Max	Coord		Max	Hold		Max	MaxR	Max	Skip	Coord	Max
30th %ile Green (s)	0.0	17.0		8.8	26.2		8.3	25.7	8.8	0.0	17.0	0.0
30th %ile Term Code	Skip	Coord		Gap	Hold		Gap	MaxR	Gap	Skip	Coord	Skip
10th %ile Green (s)	0.0	17.0		7.1	27.7		6.8	27.4	7.1	0.0	17.0	0.0
10th %ile Term Code	Skip	Coord		Gap	Hold		Gap	MaxR	Gap	Skip	Coord	Skip
Queue Length 50th (ft)	6	85		4	114		52	67	0	7	45	0
Queue Length 95th (ft)	m18	152		21	105		94	121	26	22	88	14
Internal Link Dist (ft)		248			1338			138			147	
Turn Bay Length (ft)	30			30			50		50	30		
Base Capacity (vph)	224	1016		486	1169		652	631	892	232	487	627
Starvation Cap Reductn	0	0		0	0		0	0	0	0	0	0
Spillback Cap Reductn	0	0		0	0		0	0	0	0	0	0
Storage Cap Reductn	0	0		0	0		0	0	0	0	0	0
Reduced v/c Ratio	0.15	0.55		0.54	0.45		0.36	0.34	0.18	0.13	0.29	0.05

Intersection Summary

Cycle Length: 65
Actuated Cycle Length: 65
Offset: 28 (43%), Referenced to phase 2:EBTL and 6:SBTL, Start of Green
Natural Cycle: 65
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.55
Intersection Signal Delay: 12.3 — Intersection LOS: B
Intersection Capacity Utilization 61.8% — ICU Level of Service B
Analysis Period (min) 15
m Volume for 95th percentile queue is metered by upstream signal.

! Phase conflict between lane groups.

Splits and Phases: 8: University Way & Main Street

[redacted]

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (vph)	620	19	14	654	6	25
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	0.95	0.95	0.95	0.95	1.00	1.00
Frt	0.996				0.890	
Flt Protected				0.999	0.991	
Satd. Flow (prot)	3525	0	0	3536	1643	0
Flt Permitted				0.933	0.991	
Satd. Flow (perm)	3525	0	0	3302	1643	0
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)	8				31	
Link Speed (mph)	30			30	30	
Link Distance (ft)	1418			475	359	
Travel Time (s)	32.2			10.8	8.2	
Peak Hour Factor	0.83	0.83	0.89	0.89	0.81	0.81
Adj. Flow (vph)	747	23	16	735	7	31
Shared Lane Traffic (%)						
Lane Group Flow (vph)	770	0	0	751	38	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	12			12	12	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)		9	15		15	9
Number of Detectors	2		1	2	1	
Detector Template	Thru		Left	Thru	Left	
Leading Detector (ft)	100		20	100	20	
Trailing Detector (ft)	0		0	0	0	
Detector 1 Position(ft)	0		0	0	0	
Detector 1 Size(ft)	6		20	6	20	
Detector 1 Type	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	
Detector 1 Channel						
Detector 1 Extend (s)	0.0		0.0	0.0	0.0	
Detector 1 Queue (s)	0.0		0.0	0.0	0.0	
Detector 1 Delay (s)	0.0		0.0	0.0	0.0	
Detector 2 Position(ft)	94			94		
Detector 2 Size(ft)	6			6		
Detector 2 Type	Cl+Ex			Cl+Ex		
Detector 2 Channel						
Detector 2 Extend (s)	0.0			0.0		
Turn Type			Perm			
Protected Phases	4			8	2	
Permitted Phases			8			
Detector Phase	4		8	8	2	
Switch Phase						
Minimum Initial (s)	4.0		4.0	4.0	4.0	
Minimum Split (s)	20.0		20.0	20.0	20.0	

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Total Split (s)	41.0	0.0	41.0	41.0	24.0	0.0
Total Split (%)	63.1%	0.0%	63.1%	63.1%	36.9%	0.0%
Maximum Green (s)	37.0		37.0	37.0	20.0	
Yellow Time (s)	3.5		3.5	3.5	3.5	
All-Red Time (s)	0.5		0.5	0.5	0.5	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0		3.0	3.0	3.0	
Recall Mode	None		None	None	C-Max	
Walk Time (s)	5.0		5.0	5.0	5.0	
Flash Dont Walk (s)	11.0		11.0	11.0	11.0	
Pedestrian Calls (#/hr)	0		0	0	0	
Act Effct Green (s)	21.8			21.8	35.2	
Actuated g/C Ratio	0.34			0.34	0.54	
v/c Ratio	0.65			0.68	0.04	
Control Delay	20.1			17.5	4.8	
Queue Delay	0.0			0.0	0.0	
Total Delay	20.1			17.5	4.8	
LOS	C			B	A	
Approach Delay	20.1			17.5	4.8	
Approach LOS	C			B	A	
90th %ile Green (s)	27.9		27.9	27.9	29.1	
90th %ile Term Code	Hold		Gap	Gap	Coord	
70th %ile Green (s)	24.7		24.7	24.7	32.3	
70th %ile Term Code	Hold		Gap	Gap	Coord	
50th %ile Green (s)	21.7		21.7	21.7	35.3	
50th %ile Term Code	Hold		Gap	Gap	Coord	
30th %ile Green (s)	19.4		19.4	19.4	37.6	
30th %ile Term Code	Hold		Gap	Gap	Coord	
10th %ile Green (s)	15.3		15.3	15.3	41.7	
10th %ile Term Code	Hold		Gap	Gap	Coord	
Queue Length 50th (ft)	163			96	1	
Queue Length 95th (ft)	179			105	13	
Internal Link Dist (ft)	1338			395	279	
Turn Bay Length (ft)						
Base Capacity (vph)	2010			1880	904	
Starvation Cap Reductn	0			0	0	
Spillback Cap Reductn	0			0	0	
Storage Cap Reductn	0			0	0	
Reduced v/c Ratio	0.38			0.40	0.04	

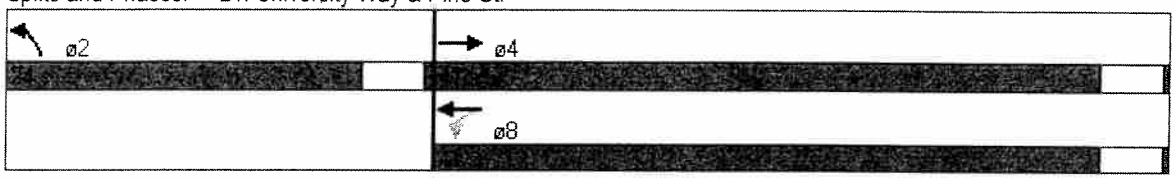
Intersection Summary

Area Type: Other
Cycle Length: 65
Actuated Cycle Length: 65
Offset: 0 (0%), Referenced to phase 2:NBL and 6:, Start of Green
Natural Cycle: 40

Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.68
Intersection Signal Delay: 18.5
Intersection Capacity Utilization 38.1%
Analysis Period (min) 15

Intersection LOS: B
ICU Level of Service A

Splits and Phases: 21: University Way & Pine St.



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	115	527	8	26	530	90	20	62	19	109	132	232
Satd. Flow (prot)	0	3500	0	0	3458	0	1770	1798	0	1770	1684	0
Flt Permitted		0.727			0.914		0.234			0.689		
Satd. Flow (perm)	0	2568	0	0	3167	0	436	1798	0	1283	1684	0
Satd. Flow (RTOR)		3			38			25			160	
Peak Hour Factor	0.93	0.93	0.93	0.91	0.91	0.91	0.77	0.77	0.77	0.81	0.81	0.81
Adj. Flow (vph)	124	567	9	29	582	99	26	81	25	135	163	286
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	700	0	0	710	0	26	106	0	135	449	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			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	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	Perm			Perm			Perm			Perm		
Protected Phases		2			2			1			1	
Permitted Phases	2			2			1			1		
Detector Phase	2	2		2	2		1	1		1	1	
Switch Phase												
Minimum Initial (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Minimum Split (s)	28.5	28.5		28.5	28.5		23.5	23.5		23.5	23.5	
Total Split (s)	35.0	35.0	0.0	35.0	35.0	0.0	30.0	30.0	0.0	30.0	30.0	0.0
Total Split (%)	53.8%	53.8%	0.0%	53.8%	53.8%	0.0%	46.2%	46.2%	0.0%	46.2%	46.2%	0.0%
Maximum Green (s)	30.5	30.5		30.5	30.5		25.5	25.5		25.5	25.5	
Yellow Time (s)	3.5	3.5		3.5	3.5		3.5	3.5		3.5	3.5	
All-Red Time (s)	1.0	1.0		1.0	1.0		1.0	1.0		1.0	1.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.5	4.5	4.0	4.5	4.5	4.0	4.5	4.5	4.0	4.5	4.5	4.0
Lead/Lag	Lag	Lag		Lag	Lag		Lead	Lead		Lead	Lead	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lead-Lag Optimize?	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	
Minimum Gap (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Time Before Reduce (s)	0.0	0.0		0.0	0.0		10.0	10.0		10.0	10.0	
Time To Reduce (s)	1.0	1.0		1.0	1.0		5.0	5.0		5.0	5.0	
Recall Mode	C-Max	C-Max		C-Max	C-Max		None	None		None	None	
Walk Time (s)	13.0	13.0		13.0	13.0		8.0	8.0		8.0	8.0	
Flash Dont Walk (s)	7.0	7.0		7.0	7.0		8.0	8.0		8.0	8.0	
Pedestrian Calls (#/hr)	0	0		0	0		0	0		0	0	
Act Effct Green (s)		38.9			38.9		17.1	17.1		17.1	17.1	
Actuated g/C Ratio		0.60			0.60		0.26	0.26		0.26	0.26	
v/c Ratio		0.45			0.37		0.23	0.22		0.40	0.80	
Control Delay		3.1			8.4		20.5	13.5		21.2	24.5	
Queue Delay		0.0			0.0		0.0	0.0		0.0	0.0	
Total Delay		3.1			8.4		20.5	13.5		21.2	24.5	
LOS		A			A		C	B		C	C	
Approach Delay		3.1			8.4			14.9			23.8	
Approach LOS		A			A			B			C	
90th %ile Green (s)	30.5	30.5		30.5	30.5		25.5	25.5		25.5	25.5	
90th %ile Term Code	Coord	Coord		Coord	Coord		Max	Max		Max	Max	
70th %ile Green (s)	34.4	34.4		34.4	34.4		21.6	21.6		21.6	21.6	
70th %ile Term Code	Coord	Coord		Coord	Coord		Gap	Gap		Gap	Gap	
50th %ile Green (s)	38.6	38.6		38.6	38.6		17.4	17.4		17.4	17.4	
50th %ile Term Code	Coord	Coord		Coord	Coord		Gap	Gap		Gap	Gap	
30th %ile Green (s)	43.0	43.0		43.0	43.0		13.0	13.0		13.0	13.0	
30th %ile Term Code	Coord	Coord		Coord	Coord		Gap	Gap		Gap	Gap	
10th %ile Green (s)	48.1	48.1		48.1	48.1		7.9	7.9		7.9	7.9	
10th %ile Term Code	Coord	Coord		Coord	Coord		Gap	Gap		Gap	Gap	
Queue Length 50th (ft)		18			63		8	24		44	105	
Queue Length 95th (ft)		24			131		19	39		63	136	
Internal Link Dist (ft)		395			412			270			180	
Turn Bay Length (ft)							40			30		
Base Capacity (vph)		1539			1911		171	721		503	758	
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		0.45			0.37		0.15	0.15		0.27	0.59	

Intersection Summary

Cycle Length: 65
Actuated Cycle Length: 65
Offset: 27 (42%), Referenced to phase 2:EBWB and 6:, Start of Green
Natural Cycle: 55
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.80
Intersection Signal Delay: 11.2 — Intersection LOS: B
Intersection Capacity Utilization 68.9% — ICU Level of Service C
Analysis Period (min) 15

Splits and Phases: 11: University Way & D Street

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	673	23	23	684	0	9	0	19	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	0.95	0.95	0.95	0.95	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.995						0.908				
Flt Protected					0.998			0.984				
Satd. Flow (prot)	0	3169	0	0	3179	0	0	1498	0	0	1676	0
Flt Permitted					0.916			0.951				
Satd. Flow (perm)	0	3169	0	0	2918	0	0	1448	0	0	1676	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		9						28				
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		471			486			299			253	
Travel Time (s)		10.7			11.0			6.8			5.8	
Peak Hour Factor	0.88	0.88	0.88	0.89	0.89	0.89	0.67	0.67	0.67	0.25	0.25	0.25
Adj. Flow (vph)	0	765	26	26	769	0	13	0	28	0	0	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	791	0	0	795	0	0	41	0	0	0	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.14	1.14	1.14	1.14	1.14	1.14	1.14	1.14	1.14	1.14	1.14	1.14
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	
Turn Type	Perm			Perm			Perm			Perm		
Protected Phases		1			1			2			2	
Permitted Phases	1			1			2			2		
Detector Phase	1	1		1	1		2	2		2	2	
Switch Phase												
Minimum Initial (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Minimum Split (s)	22.5	22.5		22.5	22.5		20.0	20.0		20.0	20.0	

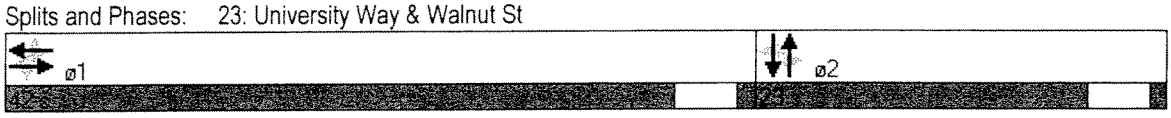
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Total Split (s)	42.0	42.0	0.0	42.0	42.0	0.0	23.0	23.0	0.0	23.0	23.0	0.0
Total Split (%)	64.6%	64.6%	0.0%	64.6%	64.6%	0.0%	35.4%	35.4%	0.0%	35.4%	35.4%	0.0%
Maximum Green (s)	37.5	37.5		37.5	37.5		18.5	18.5		18.5	18.5	
Yellow Time (s)	3.5	3.5		3.5	3.5		3.5	3.5		3.5	3.5	
All-Red Time (s)	1.0	1.0		1.0	1.0		1.0	1.0		1.0	1.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.5	4.5	4.0	4.5	4.5	4.0	4.5	4.5	4.0	4.5	4.5	4.0
Lead/Lag	Lead	Lead		Lead	Lead		Lag	Lag		Lag	Lag	
Lead-Lag Optimize?	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	
Minimum Gap (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Time Before Reduce (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Time To Reduce (s)	1.0	1.0		1.0	1.0		1.0	1.0		1.0	1.0	
Recall Mode	None	None		None	None		C-Max	C-Max		C-Max	C-Max	
Walk Time (s)	7.0	7.0		7.0	7.0		7.0	7.0		7.0	7.0	
Flash Dont Walk (s)	8.0	8.0		8.0	8.0		4.0	4.0		4.0	4.0	
Pedestrian Calls (#/hr)	0	0		0	0		0	0		0	0	
Act Effct Green (s)		28.7			28.7			27.3				
Actuated g/C Ratio		0.44			0.44			0.42				
v/c Ratio		0.56			0.62			0.07				
Control Delay		14.2			16.5			8.9				
Queue Delay		0.0			0.0			0.0				
Total Delay		14.2			16.5			8.9				
LOS		B			B			A				
Approach Delay		14.2			16.5			8.9				
Approach LOS		B			B			A				
90th %ile Green (s)	37.5	37.5		37.5	37.5		18.5	18.5		18.5	18.5	
90th %ile Term Code	Max	Max		Max	Max		Coord	Coord		Coord	Coord	
70th %ile Green (s)	32.2	32.2		32.2	32.2		23.8	23.8		23.8	23.8	
70th %ile Term Code	Gap	Gap		Gap	Gap		Coord	Coord		Coord	Coord	
50th %ile Green (s)	28.8	28.8		28.8	28.8		27.2	27.2		27.2	27.2	
50th %ile Term Code	Gap	Gap		Gap	Gap		Coord	Coord		Coord	Coord	
30th %ile Green (s)	25.1	25.1		25.1	25.1		30.9	30.9		30.9	30.9	
30th %ile Term Code	Gap	Gap		Gap	Gap		Coord	Coord		Coord	Coord	
10th %ile Green (s)	20.0	20.0		20.0	20.0		36.0	36.0		36.0	36.0	
10th %ile Term Code	Gap	Gap		Gap	Gap		Coord	Coord		Coord	Coord	
Queue Length 50th (ft)		114			102			3				
Queue Length 95th (ft)		113			112			15				
Internal Link Dist (ft)		391			406			219			173	
Turn Bay Length (ft)												
Base Capacity (vph)		1832			1683			624				
Starvation Cap Reductn		0			0			0				
Spillback Cap Reductn		0			0			0				
Storage Cap Reductn		0			0			0				
Reduced v/c Ratio		0.43			0.47			0.07				

Intersection Summary

Area Type: CBD
Cycle Length: 65

Actuated Cycle Length: 65
Offset: 0 (0%), Referenced to phase 2:NBSB and 6:, Start of Green
Natural Cycle: 45
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.62
Intersection Signal Delay: 15.2 Intersection LOS: B
Intersection Capacity Utilization 50.4% ICU Level of Service A
Analysis Period (min) 15

Splits and Phases: 23: University Way & Walnut St



Lane Group	EBL2	EBL	EBR	NBL	NBT	NBR	SBL	SBT	SBR	SWL	SWR	SWR2
Lane Configurations												
Volume (vph)	59	605	117	88	25	296	23	46	83	248	508	2
Satd. Flow (prot)	1770	3386	0	1770	1606	0	1770	1684	0	1770	2787	0
Flt Permitted	0.393	0.960		0.668			0.427			0.304		
Satd. Flow (perm)	732	3386	0	1244	1606	0	795	1684	0	566	2787	0
Satd. Flow (RTOR)		51			195			90			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
Adj. Flow (vph)	64	658	127	96	27	322	25	50	90	270	552	2
Shared Lane Traffic (%)												
Lane Group Flow (vph)	64	785	0	96	349	0	25	140	0	270	554	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	Right	Right
Median Width(ft)		36			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	15	9	15		9	15		9	15	9	9
Number of Detectors	1	1		1	2		1	2		1	1	
Detector Template	Left	Left		Left	Thru		Left	Thru		Left	Right	
Leading Detector (ft)	20	20		20	100		20	100		20	20	
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	20		20	6		20	6		20	20	
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				
Detector 2 Size(ft)					6			6				
Detector 2 Type					Cl+Ex			Cl+Ex				
Detector 2 Channel												
Detector 2 Extend (s)					0.0			0.0				
Turn Type	Perm			Perm			Perm				Over	
Protected Phases		1			2			2			1	
Permitted Phases	1			2			2			1		
Detector Phase	1	1		2	2		2	2		1	1	
Switch Phase												
Minimum Initial (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Minimum Split (s)	16.0	16.0		27.5	27.5		27.5	27.5		16.0	16.0	
Total Split (s)	37.0	37.0	0.0	28.0	28.0	0.0	28.0	28.0	0.0	37.0	37.0	0.0
Total Split (%)	56.9%	56.9%	0.0%	43.1%	43.1%	0.0%	43.1%	43.1%	0.0%	56.9%	56.9%	0.0%
Maximum Green (s)	32.5	32.5		23.5	23.5		23.5	23.5		32.5	32.5	
Yellow Time (s)	3.5	3.5		3.5	3.5		3.5	3.5		3.5	3.5	
All-Red Time (s)	1.0	1.0		1.0	1.0		1.0	1.0		1.0	1.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.5	4.5	4.0	4.5	4.5	4.0	4.5	4.5	4.0	4.5	4.5	4.0
Lead/Lag	Lead	Lead		Lag	Lag		Lag	Lag		Lead	Lead	

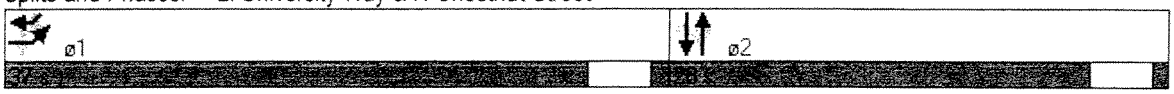
Lane Group	EBL2	EBL	EBR	NBL	NBT	NBR	SBL	SBT	SBR	SWL	SWR	SWR2
Lead-Lag Optimize?	Yes	Yes		Yes	Yes		Yes	Yes		Yes	Yes	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Minimum Gap (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Time Before Reduce (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Time To Reduce (s)	0.0	0.0		1.0	1.0		1.0	1.0		0.0	0.0	
Recall Mode	None	None		C-Max	C-Max		C-Max	C-Max		None	None	
Walk Time (s)				12.0	12.0		12.0	12.0				
Flash Dont Walk (s)				8.0	8.0		8.0	8.0				
Pedestrian Calls (#/hr)				0	0		0	0				
Act Effct Green (s)	32.1	32.1		23.9	23.9		23.9	23.9		32.1	32.1	
Actuated g/C Ratio	0.49	0.49		0.37	0.37		0.37	0.37		0.49	0.49	
v/c Ratio	0.18	0.46		0.21	0.49		0.09	0.21		0.96	0.40	
Control Delay	3.5	2.4		16.0	9.7		14.8	7.1		65.6	10.0	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	3.5	2.4		16.0	9.7		14.8	7.1		65.6	10.0	
LOS	A	A		B	A		B	A		E	A	
Approach Delay		2.5			11.0			8.3		28.2		
Approach LOS		A			B			A		C		
90th %ile Green (s)	32.5	32.5		23.5	23.5		23.5	23.5		32.5	32.5	
90th %ile Term Code	Max	Max		Coord	Coord		Coord	Coord		Max	Max	
70th %ile Green (s)	32.5	32.5		23.5	23.5		23.5	23.5		32.5	32.5	
70th %ile Term Code	Max	Max		Coord	Coord		Coord	Coord		Max	Max	
50th %ile Green (s)	32.5	32.5		23.5	23.5		23.5	23.5		32.5	32.5	
50th %ile Term Code	Max	Max		Coord	Coord		Coord	Coord		Max	Max	
30th %ile Green (s)	32.5	32.5		23.5	23.5		23.5	23.5		32.5	32.5	
30th %ile Term Code	Max	Max		Coord	Coord		Coord	Coord		Max	Max	
10th %ile Green (s)	30.5	30.5		25.5	25.5		25.5	25.5		30.5	30.5	
10th %ile Term Code	Gap	Gap		Coord	Coord		Coord	Coord		Gap	Gap	
Queue Length 50th (ft)	1	4		26	42		6	13		96	58	
Queue Length 95th (ft)	10	31		57	106		21	46		#246	94	
Internal Link Dist (ft)		406			270			221		1592		
Turn Bay Length (ft)	30	30		20			20			30		
Base Capacity (vph)	366	1719		458	714		292	676		283	1394	
Starvation Cap Reductn	0	0		0	0		0	0		0	0	
Spillback Cap Reductn	0	0		0	0		0	0		0	0	
Storage Cap Reductn	0	0		0	0		0	0		0	0	
Reduced v/c Ratio	0.17	0.46		0.21	0.49		0.09	0.21		0.95	0.40	

Intersection Summary

Cycle Length: 65
Actuated Cycle Length: 65
Offset: 4 (6%), Referenced to phase 2:NBSB and 6:, Start of Green
Natural Cycle: 70
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.96
Intersection Signal Delay: 13.8 Intersection LOS: B
Intersection Capacity Utilization 72.6% ICU Level of Service C
Analysis Period (min) 15
95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

Splits and Phases: 2: University Way & N Chestnut Street



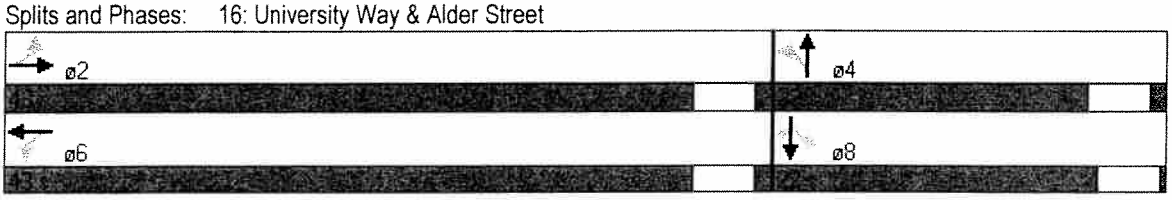
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	287	584	13	2	353	56	9	1	0	88	8	266
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	30		0	30		0	0		0	0		0
Storage Lanes	1		0	1		0	0		0	0		1
Taper Length (ft)	25		25	25		25	25		25	25		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		0.997			0.979							0.850
Flt Protected	0.950			0.950				0.957			0.956	
Satd. Flow (prot)	1593	3176	0	1593	3118	0	0	1604	0	0	1603	1425
Flt Permitted	0.494			0.387				0.832			0.756	
Satd. Flow (perm)	828	3176	0	649	3118	0	0	1395	0	0	1267	1425
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		6			48							289
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		1672			1000			361			292	
Travel Time (s)		38.0			22.7			8.2			6.6	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	312	635	14	2	384	61	10	1	0	96	9	289
Shared Lane Traffic (%)												
Lane Group Flow (vph)	312	649	0	2	445	0	0	11	0	0	105	289
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.14	1.14	1.14	1.14	1.14	1.14	1.14	1.14	1.14	1.14	1.14	1.14
Turning Speed (mph)	15		9	15		9	15		9	15		9
Turn Type	Perm			Perm			Perm			Perm		Perm
Protected Phases		2			6			4			8	
Permitted Phases	2			6			4			8		8
Minimum Split (s)	22.5	22.5		20.0	20.0		20.5	20.5		22.0	22.0	22.0
Total Split (s)	43.0	43.0	0.0	43.0	43.0	0.0	22.0	22.0	0.0	22.0	22.0	22.0
Total Split (%)	66.2%	66.2%	0.0%	66.2%	66.2%	0.0%	33.8%	33.8%	0.0%	33.8%	33.8%	33.8%
Maximum Green (s)	38.5	38.5		38.5	38.5		17.5	17.5		18.0	18.0	18.0
Yellow Time (s)	3.5	3.5		3.5	3.5		3.5	3.5		3.5	3.5	3.5
All-Red Time (s)	1.0	1.0		1.0	1.0		1.0	1.0		0.5	0.5	0.5
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.5	4.5	4.0	4.5	4.5	4.0	4.5	4.5	4.0	4.0	4.0	4.0
Lead/Lag												
Lead-Lag Optimize?												
Minimum Gap (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	3.0
Time Before Reduce (s)	10.0	10.0		10.0	10.0		10.0	10.0		0.0	0.0	0.0
Time To Reduce (s)	10.0	10.0		10.0	10.0		10.0	10.0		10.0	10.0	10.0
Walk Time (s)	7.0	7.0		7.0	7.0		5.0	5.0		7.0	7.0	7.0
Flash Dont Walk (s)	5.0	5.0		7.0	7.0		11.0	11.0		11.0	11.0	11.0
Pedestrian Calls (#/hr)	0	0		0	0		0	0		0	0	0
Act Effct Green (s)	38.5	38.5		38.5	38.5			17.5			18.0	18.0

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Actuated g/C Ratio	0.59	0.59		0.59	0.59			0.27			0.28	0.28
v/c Ratio	0.64	0.34		0.01	0.24			0.03			0.30	0.48
Control Delay	11.8	4.5		5.5	5.9			17.9			21.4	5.7
Queue Delay	0.0	0.0		0.0	0.0			0.0			0.0	0.0
Total Delay	11.8	4.5		5.5	5.9			17.9			21.4	5.7
LOS	B	A		A	A			B			C	A
Approach Delay		6.9			5.9			17.9			9.9	
Approach LOS		A			A			B			A	
Queue Length 50th (ft)	35	34		0	34			3			33	0
Queue Length 95th (ft)	182	60		3	54			14			71	51
Internal Link Dist (ft)		1592			920			281			212	
Turn Bay Length (ft)	30			30								
Base Capacity (vph)	490	1884		384	1866			376			351	604
Starvation Cap Reductn	0	0		0	0			0			0	0
Spillback Cap Reductn	0	0		0	0			0			0	0
Storage Cap Reductn	0	0		0	0			0			0	0
Reduced v/c Ratio	0.64	0.34		0.01	0.24			0.03			0.30	0.48

Intersection Summary

Area Type: CBD
Cycle Length: 65
Actuated Cycle Length: 65
Offset: 10 (15%), Referenced to phase 2:EBTL, Start of Green
Natural Cycle: 60
Control Type: Pretimed
Maximum v/c Ratio: 0.64
Intersection Signal Delay: 7.4 — Intersection LOS: A
Intersection Capacity Utilization 49.4% — ICU Level of Service A
Analysis Period (min) 15

Splits and Phases: 16: University Way & Alder Street



Network Totals

Number of Intersections	8
Control Delay / Veh (s/v)	15
Queue Delay / Veh (s/v)	1
Total Delay / Veh (s/v)	16
Total Delay (hr)	59
Stops / Veh	0.47
Stops (#)	6323
Average Speed (mph)	13
Total Travel Time (hr)	144
Distance Traveled (mi)	1918
Fuel Consumed (gal)	153
Fuel Economy (mpg)	12.5
Unserved Vehicles (#)	0
Vehicles in dilemma zone (#)	0
Performance Index	76.7

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	26	338	88	95	418	91	97	307	94	49	216	62
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5	4.5		4.5	4.5		4.5	4.5		4.5	4.5	
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Frt	1.00	0.97		1.00	0.97		1.00	0.96		1.00	0.97	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770	1805		1770	1813		1770	1797		1770	1801	
Flt Permitted	0.21	1.00		0.27	1.00		0.54	1.00		0.40	1.00	
Satd. Flow (perm)	387	1805		503	1813		1000	1797		752	1801	
Peak-hour factor, PHF	0.90	0.90	0.90	0.96	0.96	0.96	0.89	0.89	0.89	0.92	0.92	0.92
Adj. Flow (vph)	29	376	98	99	435	95	109	345	106	53	235	67
RTOR Reduction (vph)	0	15	0	0	13	0	0	13	0	0	12	0
Lane Group Flow (vph)	29	459	0	99	517	0	109	438	0	53	290	0
Turn Type	Perm			Perm			Perm			Perm		
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)	25.4	25.4		25.4	25.4		35.6	35.6		35.6	35.6	
Effective Green, g (s)	25.4	25.4		25.4	25.4		35.6	35.6		35.6	35.6	
Actuated g/C Ratio	0.36	0.36		0.36	0.36		0.51	0.51		0.51	0.51	
Clearance Time (s)	4.5	4.5		4.5	4.5		4.5	4.5		4.5	4.5	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	140	655		183	658		509	914		382	916	
v/s Ratio Prot		0.25			c0.29			c0.24			0.16	
v/s Ratio Perm	0.08			0.20			0.11			0.07		
v/c Ratio	0.21	0.70		0.54	0.79		0.21	0.48		0.14	0.32	
Uniform Delay, d1	15.4	19.0		17.7	19.9		9.5	11.2		9.1	10.1	
Progression Factor	1.00	1.00		0.17	0.20		1.00	1.00		1.00	1.00	
Incremental Delay, d2	0.7	3.4		2.0	3.9		1.0	1.8		0.2	0.2	
Delay (s)	16.1	22.4		5.1	7.8		10.4	13.0		9.3	10.3	
Level of Service	B	C		A	A		B	B		A	B	
Approach Delay (s)		22.1			7.4			12.5			10.1	
Approach LOS		C			A			B			B	

Intersection Summary			
HCM Average Control Delay	12.9	HCM Level of Service	B
HCM Volume to Capacity ratio	0.61		
Actuated Cycle Length (s)	70.0	Sum of lost time (s)	9.0
Intersection Capacity Utilization	76.1%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	30	408	104	242	440	48	214	197	150	28	132	27
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5	4.5		4.5	4.5		4.5	4.5	4.5	4.5	4.5	4.5
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.97		1.00	0.99		1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	1806		1770	1835		1770	1863	1583	1770	1863	1583
Flt Permitted	0.16	1.00		0.46	1.00		0.67	1.00	1.00	0.16	1.00	1.00
Satd. Flow (perm)	291	1806		849	1835		1240	1863	1583	299	1863	1583
Peak-hour factor, PHF	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)	33	443	113	263	478	52	233	214	163	30	143	29
RTOR Reduction (vph)	0	13	0	0	6	0	0	0	105	0	0	18
Lane Group Flow (vph)	33	543	0	263	524	0	233	214	58	30	143	11
Turn Type	pm+pt			pm+pt			pm+pt		pm+ov	pm+pt		pm+ov
Protected Phases	5!	2!		3!	8!		7!	4!	3	1!	6!	5
Permitted Phases	2!			8!			4!		4	6!		6
Actuated Green, G (s)	27.7	25.6		26.8	21.3		23.2	19.5	25.0	26.3	24.9	27.0
Effective Green, g (s)	27.7	25.6		26.8	21.3		23.2	19.5	25.0	26.3	24.9	27.0
Actuated g/C Ratio	0.40	0.37		0.38	0.30		0.33	0.28	0.36	0.38	0.36	0.39
Clearance Time (s)	4.5	4.5		4.5	4.5		4.5	4.5	4.5	4.5	4.5	4.5
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	160	660		397	558		439	519	667	142	663	712
v/s Ratio Prot	c0.01	c0.30		c0.05	c0.29		0.03	0.11	c0.01	0.00	0.08	c0.00
v/s Ratio Perm	0.08			0.20			0.15		0.03	0.08		0.01
v/c Ratio	0.21	0.82		0.66	0.94		0.53	0.41	0.09	0.21	0.22	0.02
Uniform Delay, d1	16.4	20.1		19.3	23.7		19.3	20.6	14.9	17.0	15.7	13.3
Progression Factor	0.87	1.05		1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.6	10.1		4.1	23.8		1.2	2.4	0.1	0.7	0.7	0.0
Delay (s)	14.9	31.2		23.4	47.5		20.5	23.0	15.0	17.8	16.5	13.3
Level of Service	B	C		C	D		C	C	B	B	B	B
Approach Delay (s)		30.3			39.5			19.9			16.2	
Approach LOS		C			D			B			B	

Intersection Summary

HCM Average Control Delay	29.5	HCM Level of Service	C
HCM Volume to Capacity ratio	0.74		
Actuated Cycle Length (s)	70.0	Sum of lost time (s)	9.0
Intersection Capacity Utilization	75.0%	ICU Level of Service	D
Analysis Period (min)	15		

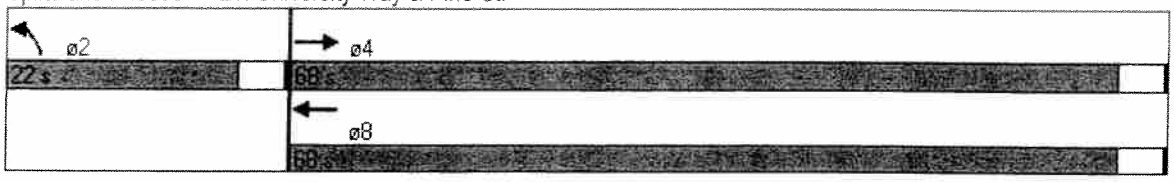
! Phase conflict between lane groups.
c Critical Lane Group

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (vph)	620	19	14	654	6	25
Satd. Flow (prot)	1855	0	1770	1863	1643	0
Flt Permitted			0.203		0.991	
Satd. Flow (perm)	1855	0	378	1863	1643	0
Satd. Flow (RTOR)	4				31	
Lane Group Flow (vph)	770	0	16	735	38	0
Turn Type			Perm			
Protected Phases	4			8	2	
Permitted Phases			8			
Total Split (s)	68.0	0.0	68.0	68.0	22.0	0.0
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Act Effct Green (s)	52.6		52.6	52.6	29.4	
Actuated g/C Ratio	0.58		0.58	0.58	0.33	
v/c Ratio	0.71		0.07	0.68	0.07	
Control Delay	16.4		5.0	10.8	12.9	
Queue Delay	0.0		0.0	0.6	0.0	
Total Delay	16.4		5.0	11.4	12.9	
LOS	B		A	B	B	
Approach Delay	16.4			11.2	12.9	
Approach LOS	B			B	B	
Queue Length 50th (ft)	274		2	181	3	
Queue Length 95th (ft)	232		m5	221	25	
Internal Link Dist (ft)	1338			395	279	
Turn Bay Length (ft)			100			
Base Capacity (vph)	1320		269	1325	558	
Starvation Cap Reductn	0		0	246	0	
Spillback Cap Reductn	0		0	0	0	
Storage Cap Reductn	0		0	0	0	
Reduced v/c Ratio	0.58		0.06	0.68	0.07	

Intersection Summary

Cycle Length: 90
Actuated Cycle Length: 90
Offset: 70 (78%), Referenced to phase 2:NBL and 6:, Start of Green
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.71
Intersection Signal Delay: 13.8 — Intersection LOS: B
Intersection Capacity Utilization 44.4% — ICU Level of Service A
Analysis Period (min) 15
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 21: University Way & Pine St.



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	115	527	8	26	530	90	20	62	19	109	132	232
Satd. Flow (prot)	1770	1859	0	1770	1822	0	1770	1798	0	1770	1684	0
Flt Permitted	0.287			0.354			0.165			0.689		
Satd. Flow (perm)	535	1859	0	659	1822	0	307	1798	0	1283	1684	0
Satd. Flow (RTOR)		1			15			19			108	
Lane Group Flow (vph)	124	576	0	29	681	0	26	106	0	135	449	0
Turn Type	Perm			Perm			Perm			Perm		
Protected Phases		2			2			1			1	
Permitted Phases	2			2			1			1		
Total Split (s)	54.0	54.0	0.0	54.0	54.0	0.0	36.0	36.0	0.0	36.0	36.0	0.0
Total Lost Time (s)	4.5	4.5	4.0	4.5	4.5	4.0	4.5	4.5	4.0	4.5	4.5	4.0
Act Effct Green (s)	55.7	55.7		55.7	55.7		25.3	25.3		25.3	25.3	
Actuated g/C Ratio	0.62	0.62		0.62	0.62		0.28	0.28		0.28	0.28	
v/c Ratio	0.37	0.50		0.07	0.60		0.30	0.20		0.38	0.81	
Control Delay	6.9	5.1		9.5	13.5		32.6	19.0		27.4	34.4	
Queue Delay	0.0	0.3		0.0	0.2		0.0	0.0		0.0	0.0	
Total Delay	6.9	5.4		9.5	13.7		32.6	19.0		27.4	34.4	
LOS	A	A		A	B		C	B		C	C	
Approach Delay		5.7			13.5			21.7			32.8	
Approach LOS		A			B			C			C	
Queue Length 50th (ft)	2	7		6	228		11	36		60	178	
Queue Length 95th (ft)	m67	235		m23	340		28	57		90	227	
Internal Link Dist (ft)		395			412			270			180	
Turn Bay Length (ft)	100			100			40			30		
Base Capacity (vph)	331	1152		408	1134		107	642		449	660	
Starvation Cap Reductn	0	167		0	61		0	0		0	0	
Spillback Cap Reductn	0	0		0	0		0	0		0	0	
Storage Cap Reductn	0	0		0	0		0	0		0	0	
Reduced v/c Ratio	0.37	0.58		0.07	0.63		0.24	0.17		0.30	0.68	

Intersection Summary

Cycle Length: 90
Actuated Cycle Length: 90
Offset: 26 (29%), Referenced to phase 2:EBWB and 6:, Start of Green
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.81
Intersection Signal Delay: 16.7 — Intersection LOS: B
Intersection Capacity Utilization 72.2% — ICU Level of Service C
Analysis Period (min) 15
m Volume for 95th percentile queue is metered by upstream signal.

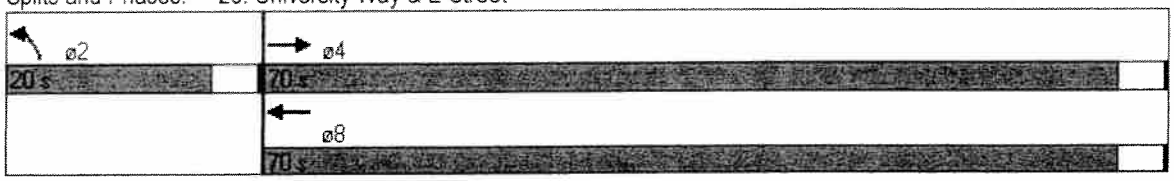
Splits and Phases: 11: University Way & D Street

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (vph)	673	0	0	530	0	0
Satd. Flow (prot)	1863	1863	1863	1863	1863	0
Flt Permitted						
Satd. Flow (perm)	1863	1863	1863	1863	1863	0
Satd. Flow (RTOR)						
Lane Group Flow (vph)	732	0	0	576	0	0
Turn Type		Perm	Perm			
Protected Phases	4			8	2	
Permitted Phases		4	8			
Total Split (s)	70.0	70.0	70.0	70.0	20.0	0.0
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Act Effct Green (s)	66.0			66.0		
Actuated g/C Ratio	0.73			0.73		
v/c Ratio	0.54			0.42		
Control Delay	3.0			1.0		
Queue Delay	0.3			0.2		
Total Delay	3.3			1.2		
LOS	A			A		
Approach Delay	3.3			1.2		
Approach LOS	A			A		
Queue Length 50th (ft)	24			3		
Queue Length 95th (ft)	62			11		
Internal Link Dist (ft)	412			391	145	
Turn Bay Length (ft)						
Base Capacity (vph)	1366			1366		
Starvation Cap Reductn	177			254		
Spillback Cap Reductn	0			0		
Storage Cap Reductn	0			0		
Reduced v/c Ratio	0.62			0.52		

Intersection Summary

Cycle Length: 90
Actuated Cycle Length: 90
Offset: 18 (20%), Referenced to phase 2:NBL and 6:, Start of Green
Control Type: Pretimed
Maximum v/c Ratio: 0.54
Intersection Signal Delay: 2.4 — Intersection LOS: A
Intersection Capacity Utilization 38.8% — ICU Level of Service A
Analysis Period (min) 15

Splits and Phases: 26: University Way & E Street



Lane Group	EBL2	EBL	EBR	NBL	NBT	NBR	SBL	SBT	SBR	SWL	SWR	SWR2
Lane Configurations												
Volume (vph)	59	605	117	88	25	296	23	46	83	248	508	2
Satd. Flow (prot)	1770	1745	0	1770	1606	0	1770	1684	0	1770	1583	0
Flt Permitted	0.373	0.960		0.639			0.297			0.230		
Satd. Flow (perm)	695	1745	0	1190	1606	0	553	1684	0	428	1583	0
Satd. Flow (RTOR)		21			286			90				
Lane Group Flow (vph)	64	785	0	96	349	0	25	140	0	270	554	0
Turn Type	Perm			Perm			Perm				Over	
Protected Phases		1			2			2			1	
Permitted Phases	1			2			2			1		
Total Split (s)	62.0	62.0	0.0	28.0	28.0	0.0	28.0	28.0	0.0	62.0	62.0	0.0
Total Lost Time (s)	4.5	4.5	4.0	4.5	4.5	4.0	4.5	4.5	4.0	4.5	4.5	4.0
Act Effct Green (s)	56.6	56.6		24.4	24.4		24.4	24.4		56.6	56.6	
Actuated g/C Ratio	0.63	0.63		0.27	0.27		0.27	0.27		0.63	0.63	
v/c Ratio	0.15	0.71		0.30	0.54		0.17	0.27		1.00	0.56	
Control Delay	2.4	6.3		29.8	9.7		29.3	12.4		74.2	10.5	
Queue Delay	0.0	0.3		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	2.4	6.6		29.8	9.7		29.3	12.4		74.2	10.5	
LOS	A	A		C	A		C	B		E	B	
Approach Delay		6.3			14.1			15.0		31.4		
Approach LOS		A			B			B		C		
Queue Length 50th (ft)	2	102		44	28		11	22		136	118	
Queue Length 95th (ft)	m5	245		88	105		33	68		#308	197	
Internal Link Dist (ft)		406			270			221		1592		
Turn Bay Length (ft)	100	100					20			200		
Base Capacity (vph)	444	1122		322	644		149	521		273	1011	
Starvation Cap Reductn	0	52		0	0		0	0		0	0	
Spillback Cap Reductn	0	0		0	0		0	0		0	0	
Storage Cap Reductn	0	0		0	0		0	0		0	0	
Reduced v/c Ratio	0.14	0.73		0.30	0.54		0.17	0.27		0.99	0.55	

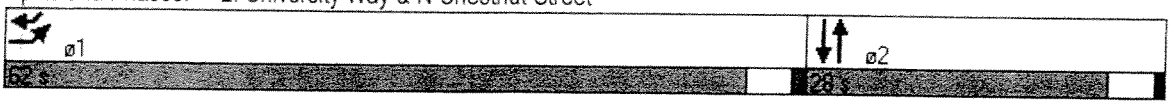
Intersection Summary

Cycle Length: 90
Actuated Cycle Length: 90
Offset: 18 (20%), Referenced to phase 2:NBSB and 6:, Start of Green
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 1.00
Intersection Signal Delay: 17.5 — Intersection LOS: B
Intersection Capacity Utilization 92.3% — ICU Level of Service F
Analysis Period (min) 15

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

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

Splits and Phases: 2: University Way & N Chestnut Street



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	673	23	23	684	0	9	0	19	0	0	0
Satd. Flow (prot)	1676	1668	0	1593	1676	0	0	1498	0	0	1676	0
Flt Permitted				0.247				0.941				
Satd. Flow (perm)	1676	1668	0	414	1676	0	0	1432	0	0	1676	0
Satd. Flow (RTOR)		5						28				
Lane Group Flow (vph)	0	791	0	26	769	0	0	41	0	0	0	0
Turn Type	Perm			Perm			Perm			Perm		
Protected Phases		1			1			2			2	
Permitted Phases	1			1			2			2		
Total Split (s)	69.0	69.0	0.0	69.0	69.0	0.0	21.0	21.0	0.0	21.0	21.0	0.0
Total Lost Time (s)	4.5	4.5	4.0	4.5	4.5	4.0	4.5	4.5	4.0	4.5	4.5	4.0
Act Effct Green (s)		59.5		59.5	59.5			21.5				
Actuated g/C Ratio		0.66		0.66	0.66			0.24				
v/c Ratio		0.72		0.09	0.69			0.11				
Control Delay		11.0		4.5	11.2			16.7				
Queue Delay		0.0		0.0	0.3			0.0				
Total Delay		11.0		4.5	11.5			16.7				
LOS		B		A	B			B				
Approach Delay		11.0			11.3			16.7				
Approach LOS		B			B			B				
Queue Length 50th (ft)		158		3	144			6				
Queue Length 95th (ft)		187		m8	186			21				
Internal Link Dist (ft)		391			406			219			173	
Turn Bay Length (ft)				100								
Base Capacity (vph)		1197		297	1201			363				
Starvation Cap Reductn		0		0	97			0				
Spillback Cap Reductn		0		0	0			0				
Storage Cap Reductn		0		0	0			0				
Reduced v/c Ratio		0.66		0.09	0.70			0.11				

Intersection Summary

Cycle Length: 90
Actuated Cycle Length: 90
Offset: 3 (3%), Referenced to phase 2:NBSB and 6:, Start of Green
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.72
Intersection Signal Delay: 11.3 — Intersection LOS: B
Intersection Capacity Utilization 51.7% — ICU Level of Service A
Analysis Period (min) 15
m Volume for 95th percentile queue is metered by upstream signal.

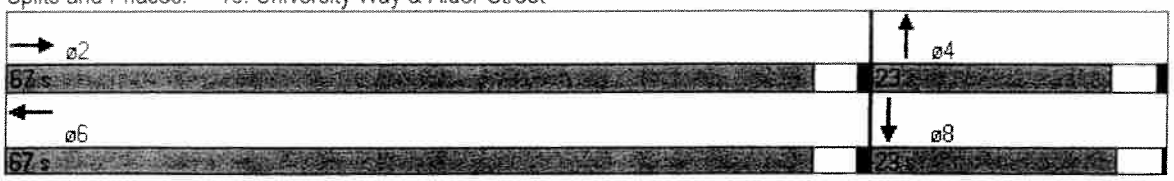
Splits and Phases: 23: University Way & Walnut St

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	287	584	13	2	353	56	9	1	0	88	8	266
Satd. Flow (prot)	1593	1671	0	1593	1641	0	0	1604	0	0	1603	1425
Flt Permitted	0.486			0.371				0.784			0.736	
Satd. Flow (perm)	815	1671	0	622	1641	0	0	1314	0	0	1234	1425
Satd. Flow (RTOR)		3			21							289
Lane Group Flow (vph)	312	649	0	2	445	0	0	11	0	0	105	289
Turn Type	Perm			Perm			Perm			Perm		Perm
Protected Phases		2			6			4			8	
Permitted Phases	2			6			4			8		8
Total Split (s)	67.0	67.0	0.0	67.0	67.0	0.0	23.0	23.0	0.0	23.0	23.0	23.0
Total Lost Time (s)	4.5	4.5	4.0	4.5	4.5	4.0	4.5	4.5	4.0	4.0	4.0	4.0
Act Effct Green (s)	68.4	68.4		68.4	68.4			12.6			13.1	13.1
Actuated g/C Ratio	0.76	0.76		0.76	0.76			0.14			0.15	0.15
v/c Ratio	0.50	0.51		0.00	0.36			0.06			0.58	0.64
Control Delay	5.5	4.0		4.0	4.9			31.2			47.9	10.9
Queue Delay	0.0	0.0		0.0	0.0			0.0			0.0	0.0
Total Delay	5.5	4.0		4.0	4.9			31.2			47.9	10.9
LOS	A	A		A	A			C			D	B
Approach Delay		4.5			4.9			31.2			20.8	
Approach LOS		A			A			C			C	
Queue Length 50th (ft)	27	55		0	61			6			57	0
Queue Length 95th (ft)	77	118		2	134			19			102	66
Internal Link Dist (ft)		1592			920			281			212	
Turn Bay Length (ft)	100			100								
Base Capacity (vph)	619	1271		473	1252			270			261	529
Starvation Cap Reductn	0	0		0	0			0			0	0
Spillback Cap Reductn	0	0		0	0			0			0	0
Storage Cap Reductn	0	0		0	0			0			0	0
Reduced v/c Ratio	0.50	0.51		0.00	0.36			0.04			0.40	0.55

Intersection Summary

Cycle Length: 90
Actuated Cycle Length: 90
Offset: 9 (10%), Referenced to phase 2:EBTL, Start of Green
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.64
Intersection Signal Delay: 8.3 — Intersection LOS: A
Intersection Capacity Utilization 66.1% — ICU Level of Service C
Analysis Period (min) 15

Splits and Phases: 16: University Way & Alder Street



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	29	382	100	107	473	103	110	347	106	55	244	70
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5	4.5		4.5	4.5		4.5	4.5		4.5	4.5	
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Frt	1.00	0.97		1.00	0.97		1.00	0.96		1.00	0.97	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770	1805		1770	1813		1770	1797		1770	1800	
Flt Permitted	0.17	1.00		0.24	1.00		0.49	1.00		0.33	1.00	
Satd. Flow (perm)	325	1805		447	1813		908	1797		621	1800	
Peak-hour factor, PHF	0.90	0.90	0.90	0.96	0.96	0.96	0.89	0.89	0.89	0.92	0.92	0.92
Adj. Flow (vph)	32	424	111	111	493	107	124	390	119	60	265	76
RTOR Reduction (vph)	0	15	0	0	13	0	0	14	0	0	13	0
Lane Group Flow (vph)	32	520	0	111	587	0	124	495	0	60	328	0
Turn Type	Perm			Perm			Perm			Perm		
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)	27.7	27.7		27.7	27.7		33.3	33.3		33.3	33.3	
Effective Green, g (s)	27.7	27.7		27.7	27.7		33.3	33.3		33.3	33.3	
Actuated g/C Ratio	0.40	0.40		0.40	0.40		0.48	0.48		0.48	0.48	
Clearance Time (s)	4.5	4.5		4.5	4.5		4.5	4.5		4.5	4.5	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	129	714		177	717		432	855		295	856	
v/s Ratio Prot		0.29			c0.32			c0.28			0.18	
v/s Ratio Perm	0.10			0.25			0.14			0.10		
v/c Ratio	0.25	0.73		0.63	0.82		0.29	0.58		0.20	0.38	
Uniform Delay, d1	14.2	18.0		17.0	18.9		11.1	13.3		10.7	11.8	
Progression Factor	1.00	1.00		0.17	0.15		1.00	1.00		1.00	1.00	
Incremental Delay, d2	1.0	3.7		2.8	3.1		1.7	2.9		0.3	0.3	
Delay (s)	15.2	21.7		5.7	5.9		12.8	16.1		11.0	12.1	
Level of Service	B	C		A	A		B	B		B	B	
Approach Delay (s)		21.3			5.9			15.5			11.9	
Approach LOS		C			A			B			B	

Intersection Summary			
HCM Average Control Delay	13.3	HCM Level of Service	B
HCM Volume to Capacity ratio	0.69		
Actuated Cycle Length (s)	70.0	Sum of lost time (s)	9.0
Intersection Capacity Utilization	82.5%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

University Way Channelization Study
University Way & Main

2009 w/3 Lane - Existing Speed 5yr Growth
PM Peak Hour

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	34	462	118	274	498	54	242	223	170	32	149	31
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5	4.5		4.5	4.5		4.5	4.5	4.5	4.5	4.5	4.5
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.97		1.00	0.99		1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	1806		1770	1835		1770	1863	1583	1770	1863	1583
Flt Permitted	0.16	1.00		0.43	1.00		0.65	1.00	1.00	0.16	1.00	1.00
Satd. Flow (perm)	291	1806		793	1835		1219	1863	1583	299	1863	1583
Peak-hour factor, PHF	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)	37	502	128	298	541	59	263	242	185	35	162	34
RTOR Reduction (vph)	0	13	0	0	6	0	0	0	119	0	0	21
Lane Group Flow (vph)	37	617	0	298	594	0	263	242	66	35	162	13
Turn Type	pm+pt			pm+pt			pm+pt		pm+ov	pm+pt		pm+ov
Protected Phases	5!	2!		3!	8!		7!	4!	3	1!	6!	5
Permitted Phases	2!			8!			4!		4	6!		6
Actuated Green, G (s)	27.7	25.6		21.5	21.5		19.5	19.5	25.0	26.3	24.9	27.0
Effective Green, g (s)	27.7	25.6		21.5	21.5		19.5	19.5	25.0	26.3	24.9	27.0
Actuated g/C Ratio	0.40	0.37		0.31	0.31		0.28	0.28	0.36	0.38	0.36	0.39
Clearance Time (s)	4.5	4.5		4.5	4.5		4.5	4.5	4.5	4.5	4.5	4.5
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	160	660		320	564		367	519	667	142	663	712
v/s Ratio Prot	c0.01	c0.34		0.07	c0.32		c0.04	0.13	0.01	0.00	0.09	c0.00
v/s Ratio Perm	0.08			0.21			0.16		0.03	0.09		0.01
v/c Ratio	0.23	0.94		0.93	1.05		0.72	0.47	0.10	0.25	0.24	0.02
Uniform Delay, d1	16.5	21.4		21.5	24.2		23.2	20.9	15.0	17.1	15.9	13.3
Progression Factor	0.85	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.6	20.1		32.8	52.9		6.5	3.0	0.1	0.9	0.9	0.0
Delay (s)	14.6	41.6		54.3	77.2		29.8	23.9	15.1	18.0	16.8	13.3
Level of Service	B	D		D	E		C	C	B	B	B	B
Approach Delay (s)		40.1			69.6			23.8			16.5	
Approach LOS		D			E			C			B	

Intersection Summary			
HCM Average Control Delay	44.0	HCM Level of Service	D
HCM Volume to Capacity ratio	0.83		
Actuated Cycle Length (s)	70.0	Sum of lost time (s)	9.0
Intersection Capacity Utilization	82.9%	ICU Level of Service	E
Analysis Period (min)	15		

! Phase conflict between lane groups.
c Critical Lane Group

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (vph)	701	22	16	740	7	28
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0		4.0	4.0	4.0	
Lane Util. Factor	1.00		1.00	1.00	1.00	
Frt	1.00		1.00	1.00	0.89	
Flt Protected	1.00		0.95	1.00	0.99	
Satd. Flow (prot)	1855		1770	1863	1646	
Flt Permitted	1.00		0.18	1.00	0.99	
Satd. Flow (perm)	1855		338	1863	1646	
Peak-hour factor, PHF	0.83	0.83	0.89	0.89	0.81	0.81
Adj. Flow (vph)	845	27	18	831	9	35
RTOR Reduction (vph)	1	0	0	0	25	0
Lane Group Flow (vph)	871	0	18	831	19	0
Turn Type			Perm			
Protected Phases	4			8	2	
Permitted Phases			8			
Actuated Green, G (s)	57.3		57.3	57.3	24.7	
Effective Green, g (s)	57.3		57.3	57.3	24.7	
Actuated g/C Ratio	0.64		0.64	0.64	0.27	
Clearance Time (s)	4.0		4.0	4.0	4.0	
Vehicle Extension (s)	3.0		3.0	3.0	3.0	
Lane Grp Cap (vph)	1181		215	1186	452	
v/s Ratio Prot	c0.47			0.45	c0.01	
v/s Ratio Perm			0.05			
v/c Ratio	0.74		0.08	0.70	0.04	
Uniform Delay, d1	11.2		6.3	10.7	24.0	
Progression Factor	1.00		1.01	0.95	1.00	
Incremental Delay, d2	2.4		0.1	1.3	0.2	
Delay (s)	13.6		6.4	11.5	24.1	
Level of Service	B		A	B	C	
Approach Delay (s)	13.6			11.4	24.1	
Approach LOS	B			B	C	

Intersection Summary			
HCM Average Control Delay	12.8	HCM Level of Service	B
HCM Volume to Capacity ratio	0.53		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	48.9%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	130	596	9	29	600	102	23	70	22	123	149	262
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5	4.5		4.5	4.5		4.5	4.5		4.5	4.5	
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Frt	1.00	1.00		1.00	0.98		1.00	0.96		1.00	0.90	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770	1858		1770	1822		1770	1795		1770	1685	
Flt Permitted	0.22	1.00		0.30	1.00		0.15	1.00		0.68	1.00	
Satd. Flow (perm)	412	1858		554	1822		280	1795		1265	1685	
Peak-hour factor, PHF	0.93	0.93	0.93	0.91	0.91	0.91	0.77	0.77	0.77	0.81	0.81	0.81
Adj. Flow (vph)	140	641	10	32	659	112	30	91	29	152	184	323
RTOR Reduction (vph)	0	0	0	0	6	0	0	13	0	0	73	0
Lane Group Flow (vph)	140	651	0	32	765	0	30	107	0	152	434	0
Turn Type	Perm			Perm			Perm			Perm		
Protected Phases		2			2			1			1	
Permitted Phases	2			2			1			1		
Actuated Green, G (s)	54.4	54.4		54.4	54.4		26.6	26.6		26.6	26.6	
Effective Green, g (s)	54.4	54.4		54.4	54.4		26.6	26.6		26.6	26.6	
Actuated g/C Ratio	0.60	0.60		0.60	0.60		0.30	0.30		0.30	0.30	
Clearance Time (s)	4.5	4.5		4.5	4.5		4.5	4.5		4.5	4.5	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	249	1123		335	1101		83	531		374	498	
v/s Ratio Prot		0.35			c0.42			0.06			c0.26	
v/s Ratio Perm	0.34			0.06			0.11			0.12		
v/c Ratio	0.56	0.58		0.10	0.69		0.36	0.20		0.41	0.87	
Uniform Delay, d1	10.7	10.8		7.5	12.1		25.0	23.7		25.4	30.1	
Progression Factor	0.47	0.38		0.27	0.32		1.00	1.00		1.00	1.00	
Incremental Delay, d2	6.9	1.7		0.5	2.9		2.7	0.2		0.7	15.3	
Delay (s)	11.9	5.8		2.5	6.8		27.7	23.9		26.1	45.4	
Level of Service	B	A		A	A		C	C		C	D	
Approach Delay (s)		6.9			6.6			24.7			40.9	
Approach LOS		A			A			C			D	

Intersection Summary			
HCM Average Control Delay	17.2	HCM Level of Service	B
HCM Volume to Capacity ratio	0.75		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	9.0
Intersection Capacity Utilization	80.1%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (vph)	851	0	0	764	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0			4.0		
Lane Util. Factor	1.00			1.00		
Frt	1.00			1.00		
Flt Protected	1.00			1.00		
Satd. Flow (prot)	1863			1863		
Flt Permitted	1.00			1.00		
Satd. Flow (perm)	1863			1863		
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	925	0	0	830	0	0
RTOR Reduction (vph)	0	0	0	0	0	0
Lane Group Flow (vph)	925	0	0	830	0	0
Turn Type		Perm	Perm			
Protected Phases	4			8	2	
Permitted Phases		4	8			
Actuated Green, G (s)	66.0			66.0		
Effective Green, g (s)	66.0			66.0		
Actuated g/C Ratio	0.73			0.73		
Clearance Time (s)	4.0			4.0		
Lane Grp Cap (vph)	1366			1366		
v/s Ratio Prot	c0.50			0.45		
v/s Ratio Perm						
v/c Ratio	0.68			0.61		
Uniform Delay, d1	6.4			5.8		
Progression Factor	1.07			0.04		
Incremental Delay, d2	2.4			1.4		
Delay (s)	9.2			1.6		
Level of Service	A			A		
Approach Delay (s)	9.2			1.6	0.0	
Approach LOS	A			A	A	

Intersection Summary			
HCM Average Control Delay	5.6	HCM Level of Service	A
HCM Volume to Capacity ratio	0.68		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	24.0
Intersection Capacity Utilization	48.1%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

University Way Channelization Study
University Way & Walnut

2009 w/3 Lane - Existing Speed 5yr Growth
PM Peak Hour

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	761	26	26	774	0	10	0	22	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.5		4.5	4.5			4.5				
Lane Util. Factor		1.00		1.00	1.00			1.00				
Frt		0.99		1.00	1.00			0.91				
Flt Protected		1.00		0.95	1.00			0.98				
Satd. Flow (prot)		1668		1593	1676			1497				
Flt Permitted		1.00		0.22	1.00			0.93				
Satd. Flow (perm)		1668		361	1676			1421				
Peak-hour factor, PHF	0.88	0.88	0.88	0.89	0.89	0.89	0.67	0.67	0.67	0.25	0.25	0.25
Adj. Flow (vph)	0	865	30	29	870	0	15	0	33	0	0	0
RTOR Reduction (vph)	0	2	0	0	0	0	0	26	0	0	0	0
Lane Group Flow (vph)	0	894	0	29	870	0	0	22	0	0	0	0
Turn Type	Perm			Perm			Perm			Perm		
Protected Phases		1			1			2			2	
Permitted Phases	1			1			2			2		
Actuated Green, G (s)		63.0		63.0	63.0			18.0				
Effective Green, g (s)		63.0		63.0	63.0			18.0				
Actuated g/C Ratio		0.70		0.70	0.70			0.20				
Clearance Time (s)		4.5		4.5	4.5			4.5				
Vehicle Extension (s)		3.0		3.0	3.0			3.0				
Lane Grp Cap (vph)		1168		253	1173			284				
v/s Ratio Prot		c0.54			0.52							
v/s Ratio Perm				0.08				c0.02				
v/c Ratio		0.76		0.11	0.74			0.08				
Uniform Delay, d1		8.7		4.4	8.4			29.2				
Progression Factor		0.92		0.80	0.71			1.00				
Incremental Delay, d2		2.2		0.2	2.2			0.5				
Delay (s)		10.3		3.7	8.2			29.8				
Level of Service		B		A	A			C				
Approach Delay (s)		10.3			8.1			29.8			0.0	
Approach LOS		B			A			C			A	

Intersection Summary			
HCM Average Control Delay	9.7	HCM Level of Service	A
HCM Volume to Capacity ratio	0.61		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	9.0
Intersection Capacity Utilization	57.1%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

University Way Channelization Study
University Way & N Chestnut

2009 w/3 Lane - Existing Speed 5yr Growth
PM Peak Hour

Movement	EBL2	EBL	EBR	NBL	NBT	NBR	SBL	SBT	SBR	SWL	SWR	SWR2
Lane Configurations												
Volume (vph)	67	685	132	100	28	335	26	52	94	281	575	2
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5	4.5		4.5	4.5		4.5	4.5		4.5	4.5	
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Frt	1.00	0.98		1.00	0.86		1.00	0.90		1.00	0.85	
Flt Protected	0.95	0.96		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770	1745		1770	1605		1770	1683		1770	1583	
Flt Permitted	0.33	0.96		0.60	1.00		0.21	1.00		0.18	1.00	
Satd. Flow (perm)	617	1745		1121	1605		393	1683		329	1583	
Peak-hour factor, PHF	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)	73	745	143	109	30	364	28	57	102	305	625	2
RTOR Reduction (vph)	0	8	0	0	176	0	0	72	0	0	0	0
Lane Group Flow (vph)	73	880	0	109	218	0	28	87	0	305	627	0
Turn Type	Perm			Perm			Perm				Over	
Protected Phases		1			2			2			1	
Permitted Phases	1			2			2			1		
Actuated Green, G (s)	57.5	57.5		23.5	23.5		23.5	23.5		57.5	57.5	
Effective Green, g (s)	57.5	57.5		23.5	23.5		23.5	23.5		57.5	57.5	
Actuated g/C Ratio	0.64	0.64		0.26	0.26		0.26	0.26		0.64	0.64	
Clearance Time (s)	4.5	4.5		4.5	4.5		4.5	4.5		4.5	4.5	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	394	1115		293	419		103	439		210	1011	
v/s Ratio Prot		0.50			c0.14			0.05			0.40	
v/s Ratio Perm	0.12			0.10			0.07			c0.93		
v/c Ratio	0.19	0.79		0.37	0.52		0.27	0.20		1.45	0.62	
Uniform Delay, d1	6.7	11.8		27.2	28.4		26.4	25.9		16.3	9.7	
Progression Factor	0.57	0.39		1.00	1.00		1.00	1.00		0.91	0.85	
Incremental Delay, d2	0.2	2.8		3.6	4.6		6.4	1.0		226.7	1.1	
Delay (s)	4.0	7.4		30.8	33.0		32.8	26.9		241.5	9.4	
Level of Service	A	A		C	C		C	C		F	A	
Approach Delay (s)		7.2			32.5			27.8		85.4		
Approach LOS		A			C			C		F		

Intersection Summary

HCM Average Control Delay	41.8	HCM Level of Service	D
HCM Volume to Capacity ratio	1.18		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	9.0
Intersection Capacity Utilization	102.1%	ICU Level of Service	G
Analysis Period (min)	15		

c Critical Lane Group

2009 w/3 Lane - Existing Speed 5yr Growth

PM Peak Hour

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	325	661	15	2	399	63	10	1	0	100	9	301
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5	4.5		4.5	4.5			4.5			4.0	4.0
Lane Util. Factor	1.00	1.00		1.00	1.00			1.00			1.00	1.00
Frt	1.00	1.00		1.00	0.98			1.00			1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00			0.96			0.96	1.00
Satd. Flow (prot)	1593	1671		1593	1642			1603			1603	1425
Flt Permitted	0.45	1.00		0.32	1.00			0.78			0.74	1.00
Satd. Flow (perm)	755	1671		544	1642			1303			1233	1425
Peak-hour factor, PHF	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)	353	718	16	2	434	68	11	1	0	109	10	327
RTOR Reduction (vph)	0	1	0	0	5	0	0	0	0	0	0	277
Lane Group Flow (vph)	353	733	0	2	497	0	0	12	0	0	119	50
Turn Type	Perm			Perm			Perm			Perm		Perm
Protected Phases		2			6			4			8	
Permitted Phases	2			6			4			8		8
Actuated Green, G (s)	67.7	67.7		67.7	67.7			13.3			13.8	13.8
Effective Green, g (s)	67.7	67.7		67.7	67.7			13.3			13.8	13.8
Actuated g/C Ratio	0.75	0.75		0.75	0.75			0.15			0.15	0.15
Clearance Time (s)	4.5	4.5		4.5	4.5			4.5			4.0	4.0
Vehicle Extension (s)	3.0	3.0		3.0	3.0			3.0			3.0	3.0
Lane Grp Cap (vph)	568	1257		409	1235			193			189	219
v/s Ratio Prot		0.44			0.30							
v/s Ratio Perm	c0.47			0.00				0.01			c0.10	0.04
v/c Ratio	0.62	0.58		0.00	0.40			0.06			0.63	0.23
Uniform Delay, d1	5.2	4.9		2.8	4.0			33.0			35.7	33.4
Progression Factor	0.66	0.64		1.00	1.00			1.00			1.00	1.00
Incremental Delay, d2	3.4	1.3		0.0	0.2			0.1			6.4	0.5
Delay (s)	6.8	4.5		2.8	4.2			33.1			42.1	34.0
Level of Service	A	A		A	A			C			D	C
Approach Delay (s)		5.2			4.2			33.1			36.1	
Approach LOS		A			A			C			D	

Intersection Summary

HCM Average Control Delay	11.8	HCM Level of Service	B
HCM Volume to Capacity ratio	0.62		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	8.5
Intersection Capacity Utilization	70.8%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	33	433	113	122	535	116	124	393	120	63	277	79
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5	4.5		4.5	4.5		4.5	4.5		4.5	4.5	
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Frt	1.00	0.97		1.00	0.97		1.00	0.96		1.00	0.97	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770	1805		1770	1813		1770	1797		1770	1801	
Flt Permitted	0.14	1.00		0.20	1.00		0.43	1.00		0.25	1.00	
Satd. Flow (perm)	251	1805		374	1813		799	1797		467	1801	
Peak-hour factor, PHF	0.90	0.90	0.90	0.96	0.96	0.96	0.89	0.89	0.89	0.92	0.92	0.92
Adj. Flow (vph)	37	481	126	127	557	121	139	442	135	68	301	86
RTOR Reduction (vph)	0	14	0	0	12	0	0	14	0	0	14	0
Lane Group Flow (vph)	37	593	0	127	666	0	139	563	0	68	373	0
Turn Type	Perm			Perm			Perm			Perm		
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)	29.7	29.7		29.7	29.7		31.3	31.3		31.3	31.3	
Effective Green, g (s)	29.7	29.7		29.7	29.7		31.3	31.3		31.3	31.3	
Actuated g/C Ratio	0.42	0.42		0.42	0.42		0.45	0.45		0.45	0.45	
Clearance Time (s)	4.5	4.5		4.5	4.5		4.5	4.5		4.5	4.5	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	106	766		159	769		357	804		209	805	
v/s Ratio Prot		0.33			c0.37			c0.31			0.21	
v/s Ratio Perm	0.15			0.34			0.17			0.15		
v/c Ratio	0.35	0.77		0.80	0.87		0.39	0.70		0.33	0.46	
Uniform Delay, d1	13.6	17.3		17.5	18.3		13.0	15.6		12.5	13.5	
Progression Factor	1.00	1.00		0.45	0.42		1.00	1.00		1.00	1.00	
Incremental Delay, d2	2.0	4.9		2.6	1.0		3.2	5.0		0.9	0.4	
Delay (s)	15.6	22.2		10.6	8.8		16.1	20.6		13.4	13.9	
Level of Service	B	C		B	A		B	C		B	B	
Approach Delay (s)		21.8			9.1			19.7			13.8	
Approach LOS		C			A			B			B	

Intersection Summary

HCM Average Control Delay	15.9	HCM Level of Service	B
HCM Volume to Capacity ratio	0.78		
Actuated Cycle Length (s)	70.0	Sum of lost time (s)	9.0
Intersection Capacity Utilization	90.0%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	38	522	133	310	563	61	274	252	192	36	169	35
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5	4.5		4.5	4.5		4.5	4.5	4.5	4.5	4.5	4.5
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.97		1.00	0.99		1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	1806		1770	1836		1770	1863	1583	1770	1863	1583
Flt Permitted	0.15	1.00		0.39	1.00		0.64	1.00	1.00	0.15	1.00	1.00
Satd. Flow (perm)	288	1806		735	1836		1195	1863	1583	288	1863	1583
Peak-hour factor, PHF	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)	41	567	145	337	612	66	298	274	209	39	184	38
RTOR Reduction (vph)	0	13	0	0	6	0	0	0	125	0	0	23
Lane Group Flow (vph)	41	699	0	337	672	0	298	274	84	39	184	15
Turn Type	pm+pt			pm+pt			pm+pt		pm+ov	pm+pt		pm+ov
Protected Phases	5!	2!		3!	8!		7!	4!	3	1!	6!	5
Permitted Phases	2!			8!			4!		4	6!		6
Actuated Green, G (s)	28.0	25.9		20.5	20.5		19.5	19.5	24.0	28.0	25.9	28.0
Effective Green, g (s)	28.0	25.9		20.5	20.5		19.5	19.5	24.0	28.0	25.9	28.0
Actuated g/C Ratio	0.40	0.37		0.29	0.29		0.28	0.28	0.34	0.40	0.37	0.40
Clearance Time (s)	4.5	4.5		4.5	4.5		4.5	4.5	4.5	4.5	4.5	4.5
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	160	668		282	538		362	519	645	160	689	735
v/s Ratio Prot	c0.01	c0.39		0.08	c0.37		c0.04	0.15	0.01	0.01	0.10	0.00
v/s Ratio Perm	0.10			0.27			0.19		0.04	0.09		0.01
v/c Ratio	0.26	1.05		1.20	1.25		0.82	0.53	0.13	0.24	0.27	0.02
Uniform Delay, d1	16.4	22.0		24.0	24.7		22.9	21.4	15.8	16.4	15.4	12.7
Progression Factor	0.85	1.01		1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.7	44.0		117.1	127.2		14.0	3.8	0.1	0.8	0.9	0.0
Delay (s)	14.7	66.2		141.1	151.9		36.9	25.2	15.9	17.2	16.4	12.7
Level of Service	B	E		F	F		D	C	B	B	B	B
Approach Delay (s)		63.4			148.3			27.2			16.0	
Approach LOS		E			F			C			B	

Intersection Summary

HCM Average Control Delay	79.6	HCM Level of Service	E
HCM Volume to Capacity ratio	1.10		
Actuated Cycle Length (s)	70.0	Sum of lost time (s)	18.0
Intersection Capacity Utilization	91.8%	ICU Level of Service	F
Analysis Period (min)	15		

! Phase conflict between lane groups.

c Critical Lane Group

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (vph)	794	24	18	837	8	32
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0		4.0	4.0	4.0	
Lane Util. Factor	1.00		1.00	1.00	1.00	
Frt	1.00		1.00	1.00	0.89	
Flt Protected	1.00		0.95	1.00	0.99	
Satd. Flow (prot)	1855		1770	1863	1645	
Flt Permitted	1.00		0.16	1.00	0.99	
Satd. Flow (perm)	1855		291	1863	1645	
Peak-hour factor, PHF	0.83	0.83	0.89	0.89	0.81	0.81
Adj. Flow (vph)	957	29	20	940	10	40
RTOR Reduction (vph)	1	0	0	0	31	0
Lane Group Flow (vph)	985	0	20	940	19	0
Turn Type			Perm			
Protected Phases	4			8	2	
Permitted Phases			8			
Actuated Green, G (s)	61.8		61.8	61.8	20.2	
Effective Green, g (s)	61.8		61.8	61.8	20.2	
Actuated g/C Ratio	0.69		0.69	0.69	0.22	
Clearance Time (s)	4.0		4.0	4.0	4.0	
Vehicle Extension (s)	3.0		3.0	3.0	3.0	
Lane Grp Cap (vph)	1274		200	1279	369	
v/s Ratio Prot	c0.53			0.50	c0.01	
v/s Ratio Perm			0.07			
v/c Ratio	0.77		0.10	0.73	0.05	
Uniform Delay, d1	9.4		4.7	8.9	27.4	
Progression Factor	1.00		0.96	0.98	1.00	
Incremental Delay, d2	3.0		0.1	1.1	0.3	
Delay (s)	12.4		4.7	9.8	27.6	
Level of Service	B		A	A	C	
Approach Delay (s)	12.4			9.7	27.6	
Approach LOS	B			A	C	

Intersection Summary			
HCM Average Control Delay	11.5	HCM Level of Service	B
HCM Volume to Capacity ratio	0.60		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	54.1%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

University Way Channelization Study
University Way & D St

2009 w/3 Lane - Existing Speed 10yr Growth
PM Peak Hour

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	147	675	10	33	678	115	26	79	24	140	169	297
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5	4.5		4.5	4.5		4.5	4.5		4.5	4.5	
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Frt	1.00	1.00		1.00	0.98		1.00	0.97		1.00	0.90	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770	1859		1770	1822		1770	1798		1770	1685	
Flt Permitted	0.15	1.00		0.23	1.00		0.14	1.00		0.66	1.00	
Satd. Flow (perm)	274	1859		433	1822		267	1798		1228	1685	
Peak-hour factor, PHF	0.93	0.93	0.93	0.91	0.91	0.91	0.77	0.77	0.77	0.81	0.81	0.81
Adj. Flow (vph)	158	726	11	36	745	126	34	103	31	173	209	367
RTOR Reduction (vph)	0	0	0	0	7	0	0	12	0	0	70	0
Lane Group Flow (vph)	158	737	0	36	864	0	34	122	0	173	506	0
Turn Type	Perm			Perm			Perm			Perm		
Protected Phases		2			2			1			1	
Permitted Phases	2			2			1			1		
Actuated Green, G (s)	53.1	53.1		53.1	53.1		27.9	27.9		27.9	27.9	
Effective Green, g (s)	53.1	53.1		53.1	53.1		27.9	27.9		27.9	27.9	
Actuated g/C Ratio	0.59	0.59		0.59	0.59		0.31	0.31		0.31	0.31	
Clearance Time (s)	4.5	4.5		4.5	4.5		4.5	4.5		4.5	4.5	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	162	1097		255	1075		83	557		381	522	
v/s Ratio Prot		0.40			0.47			0.07			c0.30	
v/s Ratio Perm	c0.58			0.08			0.13			0.14		
v/c Ratio	0.98	0.67		0.14	0.80		0.41	0.22		0.45	0.97	
Uniform Delay, d1	17.8	12.5		8.3	14.4		24.5	23.0		24.9	30.6	
Progression Factor	0.55	0.49		0.48	0.43		1.00	1.00		1.00	1.00	
Incremental Delay, d2	52.7	2.3		0.8	4.8		3.3	0.2		0.9	31.1	
Delay (s)	62.5	8.4		4.8	10.9		27.8	23.2		25.8	61.7	
Level of Service	E	A		A	B		C	C		C	E	
Approach Delay (s)		18.0			10.7			24.1			53.4	
Approach LOS		B			B			C			D	

Intersection Summary			
HCM Average Control Delay	25.7	HCM Level of Service	C
HCM Volume to Capacity ratio	0.97		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	9.0
Intersection Capacity Utilization	89.2%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (vph)	963	0	0	846	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0			4.0		
Lane Util. Factor	1.00			1.00		
Frt	1.00			1.00		
Flt Protected	1.00			1.00		
Satd. Flow (prot)	1863			1863		
Flt Permitted	1.00			1.00		
Satd. Flow (perm)	1863			1863		
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	1047	0	0	920	0	0
RTOR Reduction (vph)	0	0	0	0	0	0
Lane Group Flow (vph)	1047	0	0	920	0	0
Turn Type		Perm	Perm			
Protected Phases	4			8	2	
Permitted Phases		4	8			
Actuated Green, G (s)	66.0			66.0		
Effective Green, g (s)	66.0			66.0		
Actuated g/C Ratio	0.73			0.73		
Clearance Time (s)	4.0			4.0		
Lane Grp Cap (vph)	1366			1366		
v/s Ratio Prot	c0.56			0.49		
v/s Ratio Perm						
v/c Ratio	0.77			0.67		
Uniform Delay, d1	7.3			6.3		
Progression Factor	0.92			0.02		
Incremental Delay, d2	3.5			1.6		
Delay (s)	10.3			1.7		
Level of Service	B			A		
Approach Delay (s)	10.3			1.7	0.0	
Approach LOS	B			A	A	

Intersection Summary			
HCM Average Control Delay	6.3	HCM Level of Service	A
HCM Volume to Capacity ratio	0.77		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	24.0
Intersection Capacity Utilization	54.0%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	862	29	29	876	0	12	0	24	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.5		4.5	4.5			4.5				
Lane Util. Factor		1.00		1.00	1.00			1.00				
Frt		1.00		1.00	1.00			0.91				
Flt Protected		1.00		0.95	1.00			0.98				
Satd. Flow (prot)		1668		1593	1676			1501				
Flt Permitted		1.00		0.17	1.00			0.92				
Satd. Flow (perm)		1668		285	1676			1409				
Peak-hour factor, PHF	0.88	0.88	0.88	0.89	0.89	0.89	0.67	0.67	0.67	0.25	0.25	0.25
Adj. Flow (vph)	0	980	33	33	984	0	18	0	36	0	0	0
RTOR Reduction (vph)	0	1	0	0	0	0	0	30	0	0	0	0
Lane Group Flow (vph)	0	1012	0	33	984	0	0	24	0	0	0	0
Turn Type	Perm			Perm			Perm			Perm		
Protected Phases		1			1			2			2	
Permitted Phases	1			1			2			2		
Actuated Green, G (s)		64.9		64.9	64.9			16.1				
Effective Green, g (s)		64.9		64.9	64.9			16.1				
Actuated g/C Ratio		0.72		0.72	0.72			0.18				
Clearance Time (s)		4.5		4.5	4.5			4.5				
Vehicle Extension (s)		3.0		3.0	3.0			3.0				
Lane Grp Cap (vph)		1203		206	1209			252				
v/s Ratio Prot		c0.61			0.59							
v/s Ratio Perm				0.12				c0.02				
v/c Ratio		0.84		0.16	0.81			0.10				
Uniform Delay, d1		8.9		4.0	8.5			30.9				
Progression Factor		1.14		0.91	0.72			1.00				
Incremental Delay, d2		3.5		0.3	3.6			0.8				
Delay (s)		13.6		3.9	9.7			31.6				
Level of Service		B		A	A			C				
Approach Delay (s)		13.6			9.5			31.6			0.0	
Approach LOS		B			A			C			A	

Intersection Summary

HCM Average Control Delay	12.0	HCM Level of Service	B
HCM Volume to Capacity ratio	0.69		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	9.0
Intersection Capacity Utilization	63.2%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL2	EBL	EBR	NBL	NBT	NBR	SBL	SBT	SBR	SWL	SWR	SWR2
Lane Configurations												
Volume (vph)	76	774	150	113	32	379	29	59	106	317	650	3
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5	4.5		4.5	4.5		4.5	4.5		4.5	4.5	
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Frt	1.00	0.98		1.00	0.86		1.00	0.90		1.00	0.85	
Flt Protected	0.95	0.96		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770	1744		1770	1605		1770	1683		1770	1583	
Flt Permitted	0.28	0.96		0.57	1.00		0.17	1.00		0.11	1.00	
Satd. Flow (perm)	523	1744		1055	1605		317	1683		204	1583	
Peak-hour factor, PHF	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)	83	841	163	123	35	412	32	64	115	345	707	3
RTOR Reduction (vph)	0	8	0	0	144	0	0	72	0	0	0	0
Lane Group Flow (vph)	83	996	0	123	303	0	32	107	0	345	710	0
Turn Type	Perm			Perm			Perm				Over	
Protected Phases		1			2			2			1	
Permitted Phases	1			2			2			1		
Actuated Green, G (s)	57.5	57.5		23.5	23.5		23.5	23.5		57.5	57.5	
Effective Green, g (s)	57.5	57.5		23.5	23.5		23.5	23.5		57.5	57.5	
Actuated g/C Ratio	0.64	0.64		0.26	0.26		0.26	0.26		0.64	0.64	
Clearance Time (s)	4.5	4.5		4.5	4.5		4.5	4.5		4.5	4.5	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	334	1114		275	419		83	439		130	1011	
v/s Ratio Prot		0.57			c0.19			0.06			0.45	
v/s Ratio Perm	0.16			0.12			0.10			c1.69		
v/c Ratio	0.25	0.89		0.45	0.72		0.39	0.24		2.65	0.70	
Uniform Delay, d1	7.0	13.7		27.8	30.3		27.3	26.2		16.3	10.6	
Progression Factor	0.54	0.38		1.00	1.00		1.00	1.00		0.91	0.86	
Incremental Delay, d2	0.2	6.3		5.2	10.4		13.0	1.3		764.0	2.0	
Delay (s)	4.0	11.5		33.0	40.6		40.3	27.6		778.8	11.1	
Level of Service	A	B		C	D		D	C		F	B	
Approach Delay (s)		10.9			39.0			29.5		262.2		
Approach LOS		B			D			C		F		

Intersection Summary

HCM Average Control Delay	108.4	HCM Level of Service	F
HCM Volume to Capacity ratio	2.09		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	9.0
Intersection Capacity Utilization	113.0%	ICU Level of Service	H
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	367	748	17	3	452	72	12	1	0	113	10	341
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5	4.5		4.5	4.5			4.5			4.0	4.0
Lane Util. Factor	1.00	1.00		1.00	1.00			1.00			1.00	1.00
Frt	1.00	1.00		1.00	0.98			1.00			1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00			0.96			0.96	1.00
Satd. Flow (prot)	1593	1671		1593	1642			1602			1603	1425
Flt Permitted	0.41	1.00		0.27	1.00			0.77			0.73	1.00
Satd. Flow (perm)	686	1671		457	1642			1283			1230	1425
Peak-hour factor, PHF	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)	399	813	18	3	491	78	13	1	0	123	11	371
RTOR Reduction (vph)	0	1	0	0	6	0	0	0	0	0	0	311
Lane Group Flow (vph)	399	830	0	3	563	0	0	14	0	0	134	60
Turn Type	Perm			Perm			Perm			Perm		Perm
Protected Phases		2			6			4			8	
Permitted Phases	2			6			4			8		8
Actuated Green, G (s)	67.0	67.0		67.0	67.0			14.0			14.5	14.5
Effective Green, g (s)	67.0	67.0		67.0	67.0			14.0			14.5	14.5
Actuated g/C Ratio	0.74	0.74		0.74	0.74			0.16			0.16	0.16
Clearance Time (s)	4.5	4.5		4.5	4.5			4.5			4.0	4.0
Vehicle Extension (s)	3.0	3.0		3.0	3.0			3.0			3.0	3.0
Lane Grp Cap (vph)	511	1244		340	1222			200			198	230
v/s Ratio Prot		0.50			0.34							
v/s Ratio Perm	c0.58			0.01				0.01			c0.11	0.04
v/c Ratio	0.78	0.67		0.01	0.46			0.07			0.68	0.26
Uniform Delay, d1	7.0	5.8		3.0	4.5			32.4			35.5	33.1
Progression Factor	0.72	0.70		1.00	1.00			1.00			1.00	1.00
Incremental Delay, d2	5.9	1.4		0.0	0.3			0.1			8.8	0.6
Delay (s)	10.9	5.5		3.0	4.8			32.6			44.4	33.7
Level of Service	B	A		A	A			C			D	C
Approach Delay (s)		7.3			4.7			32.6			36.5	
Approach LOS		A			A			C			D	

Intersection Summary

HCM Average Control Delay	13.2	HCM Level of Service	B
HCM Volume to Capacity ratio	0.76		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	8.5
Intersection Capacity Utilization	76.1%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

2: University Way & N Chestnut Street

Direction	
Volume (vph)	2100
Control Delay / Veh (s/v)	19
Queue Delay / Veh (s/v)	0
Total Delay / Veh (s/v)	19
Total Delay (hr)	11
Stops / Veh	0.43
Stops (#)	908
Average Speed (mph)	13
Total Travel Time (hr)	29
Distance Traveled (mi)	393
Fuel Consumed (gal)	30
Fuel Economy (mpg)	13.1
Unserved Vehicles (#)	0
Vehicles in dilemma zone (#)	0

5: University Way & Water Street

Direction: [illegible]	
Volume (vph)	1882
Control Delay / Veh (s/v)	17
Queue Delay / Veh (s/v)	4
Total Delay / Veh (s/v)	20
Total Delay (hr)	11
Stops / Veh	0.52
Stops (#)	977
Average Speed (mph)	9
Total Travel Time (hr)	17
Distance Traveled (mi)	159
Fuel Consumed (gal)	18
Fuel Economy (mpg)	8.7
Unserved Vehicles (#)	0
Vehicles in dilemma zone (#)	0

8: University Way & Main Street

Direction	All
Volume (vph)	2020
Control Delay / Veh (s/v)	25
Queue Delay / Veh (s/v)	6
Total Delay / Veh (s/v)	30
Total Delay (hr)	17
Stops / Veh	0.66
Stops (#)	1334
Average Speed (mph)	9
Total Travel Time (hr)	28
Distance Traveled (mi)	261
Fuel Consumed (gal)	29
Fuel Economy (mpg)	9.1
Unserved Vehicles (#)	0
Vehicles in dilemma zone (#)	0

11: University Way & D Street

Direction	All
Volume (vph)	1872
Control Delay / Veh (s/v)	15
Queue Delay / Veh (s/v)	0
Total Delay / Veh (s/v)	16
Total Delay (hr)	8
Stops / Veh	0.52
Stops (#)	967
Average Speed (mph)	10
Total Travel Time (hr)	14
Distance Traveled (mi)	149
Fuel Consumed (gal)	16
Fuel Economy (mpg)	9.3
Unserved Vehicles (#)	0
Vehicles in dilemma zone (#)	0

16: University Way & Alder Street

Direction	
Volume (vph)	1668
Control Delay / Veh (s/v)	9
Queue Delay / Veh (s/v)	0
Total Delay / Veh (s/v)	9
Total Delay (hr)	4
Stops / Veh	0.28
Stops (#)	466
Average Speed (mph)	21
Total Travel Time (hr)	23
Distance Traveled (mi)	484
Fuel Consumed (gal)	26
Fuel Economy (mpg)	18.5
Unserved Vehicles (#)	0
Vehicles in dilemma zone (#)	0

21: University Way & Pine St.

Direction	All
Volume (vph)	1338
Control Delay / Veh (s/v)	11
Queue Delay / Veh (s/v)	0
Total Delay / Veh (s/v)	11
Total Delay (hr)	4
Stops / Veh	0.42
Stops (#)	567
Average Speed (mph)	17
Total Travel Time (hr)	14
Distance Traveled (mi)	234
Fuel Consumed (gal)	16
Fuel Economy (mpg)	14.8
Unserved Vehicles (#)	0
Vehicles in dilemma zone (#)	0

23: University Way & Walnut St

Direction, Lane	All
Volume (vph)	1430
Control Delay / Veh (s/v)	9
Queue Delay / Veh (s/v)	0
Total Delay / Veh (s/v)	9
Total Delay (hr)	4
Stops / Veh	0.30
Stops (#)	424
Average Speed (mph)	15
Total Travel Time (hr)	9
Distance Traveled (mi)	129
Fuel Consumed (gal)	10
Fuel Economy (mpg)	12.8
Unserved Vehicles (#)	0
Vehicles in dilemma zone (#)	0

26: University Way & E Street

Direction	
Volume (vph)	1203
Control Delay / Veh (s/v)	3
Queue Delay / Veh (s/v)	0
Total Delay / Veh (s/v)	3
Total Delay (hr)	1
Stops / Veh	0.18
Stops (#)	212
Average Speed (mph)	20
Total Travel Time (hr)	6
Distance Traveled (mi)	110
Fuel Consumed (gal)	7
Fuel Economy (mpg)	16.7
Unserved Vehicles (#)	0
Vehicles in dilemma zone (#)	0

- **QUEUING**

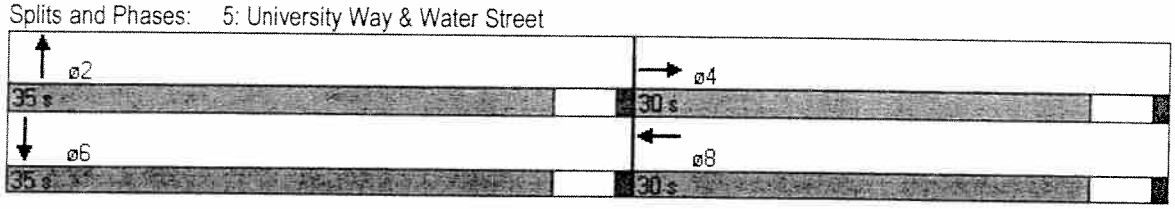
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	26	338	88	95	418	91	97	307	94	49	216	62
Satd. Flow (prot)	0	3426	0	0	3430	0	1770	1798	0	1770	1801	0
Flt Permitted		0.897			0.741		0.554			0.429		
Satd. Flow (perm)	0	3083	0	0	2562	0	1032	1798	0	799	1801	0
Satd. Flow (RTOR)		53			37			32			30	
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.90	0.90	0.90	0.96	0.96	0.96	0.89	0.89	0.89	0.92	0.92	0.92
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	29	376	98	99	435	95	109	345	106	53	235	67
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	503	0	0	629	0	109	451	0	53	302	0
Turn Type	Perm			Perm			Perm			Perm		
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Total Split (s)	30.0	30.0	0.0	30.0	30.0	0.0	35.0	35.0	0.0	35.0	35.0	0.0
Total Lost Time (s)	4.5	4.5	4.0	4.5	4.5	4.0	4.5	4.5	4.0	4.5	4.5	4.0
Act Effct Green (s)		20.1			20.1		35.9	35.9		35.9	35.9	
Actuated g/C Ratio		0.31			0.31		0.55	0.55		0.55	0.55	
v/c Ratio		0.51			0.77		0.19	0.45		0.12	0.30	
Control Delay		17.5			10.7		10.0	10.9		9.6	9.1	
Queue Delay		0.0			0.0		0.0	0.0		0.0	0.0	
Total Delay		17.5			10.7		10.0	10.9		9.6	9.1	
LOS		B			B		A	B		A	A	
Approach Delay		17.5			10.7			10.7			9.1	
Approach LOS		B			B			B			A	
Queue Length 50th (ft)		74			7		20	89		9	52	
Queue Length 95th (ft)		101			7		53	182		30	114	
Internal Link Dist (ft)		920			248			152			141	
Turn Bay Length (ft)							30			30		
Base Capacity (vph)		1242			1028		569	1006		441	1007	
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		0.40			0.61		0.19	0.45		0.12	0.30	

Intersection Summary

Cycle Length: 65
Actuated Cycle Length: 65
Offset: 46 (71%), Referenced to phase 2:NBTL, Start of Green
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.77
Intersection Signal Delay: 12.1 — Intersection LOS: B
Intersection Capacity Utilization 70.3% — ICU Level of Service C

Analysis Period (min) 15

Splits and Phases: 5: University Way & Water Street



2009 Existing Optimized Lanes\Volumes\Queues

PM Peak Hour

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	30	408	104	242	440	48	214	197	150	28	132	27
Satd. Flow (prot)	1770	3433	0	1770	3486	0	1770	1863	1583	1770	1863	1583
Flt Permitted	0.206			0.444			0.666			0.214		
Satd. Flow (perm)	384	3433	0	827	3486	0	1241	1863	1583	399	1863	1583
Satd. Flow (RTOR)		47			18				163			29
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
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
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	33	443	113	263	478	52	233	214	163	30	143	29
Shared Lane Traffic (%)												
Lane Group Flow (vph)	33	556	0	263	530	0	233	214	163	30	143	29
Turn Type	pm+pt			pm+pt			pm+pt		pm+ov	pm+pt		pm+ov
Protected Phases	5!	2!		3!	8!		7!	4!	3	1!	6!	5
Permitted Phases	2!			8!			4!		4	6!		6
Total Split (s)	8.0	21.5	0.0	12.0	22.5	0.0	13.0	23.5	12.0	8.0	21.5	8.0
Total Lost Time (s)	4.5	4.5	4.0	4.5	4.5	4.0	4.5	4.5	4.5	4.5	4.5	4.5
Act Effct Green (s)	23.6	22.2		21.7	14.6		29.5	19.0	30.6	22.7	20.6	25.4
Actuated g/C Ratio	0.36	0.34		0.33	0.22		0.45	0.29	0.47	0.35	0.32	0.39
v/c Ratio	0.15	0.46		0.69	0.67		0.35	0.39	0.20	0.14	0.24	0.05
Control Delay	12.7	17.2		14.0	11.5		13.2	21.0	2.5	14.1	19.6	5.6
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	12.7	17.2		14.0	11.5		13.2	21.0	2.5	14.1	19.6	5.6
LOS	B	B		B	B		B	C	A	B	B	A
Approach Delay		17.0			12.4			13.1			16.8	
Approach LOS		B			B			B			B	
Queue Length 50th (ft)	10	90		12	27		52	67	0	7	45	0
Queue Length 95th (ft)	m25	140		51	40		94	121	26	22	88	14
Internal Link Dist (ft)		248			1338			138			147	
Turn Bay Length (ft)	30			30			50		50	30		
Base Capacity (vph)	222	1202		389	978		658	545	840	221	589	635
Starvation Cap Reductn	0	0		0	0		0	0	0	0	0	0
Spillback Cap Reductn	0	0		0	0		0	0	0	0	0	0
Storage Cap Reductn	0	0		0	0		0	0	0	0	0	0
Reduced v/c Ratio	0.15	0.46		0.68	0.54		0.35	0.39	0.19	0.14	0.24	0.05

Intersection Summary

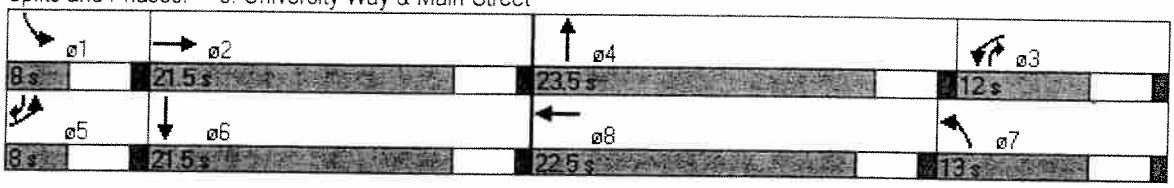
Cycle Length: 65
Actuated Cycle Length: 65
Offset: 50 (77%), Referenced to phase 2:EBTL and 6:SBTL, Start of Green
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.69
Intersection Signal Delay: 14.2 — Intersection LOS: B
Intersection Capacity Utilization 61.8% — ICU Level of Service B

Analysis Period (min) 15

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

! Phase conflict between lane groups.

Splits and Phases: 8: University Way & Main Street



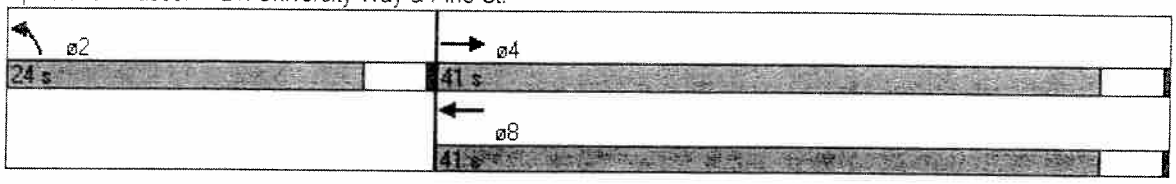
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (vph)	620	19	14	654	6	25
Satd. Flow (prot)	3525	0	0	3536	1643	0
Flt Permitted				0.934	0.991	
Satd. Flow (perm)	3525	0	0	3306	1643	0
Satd. Flow (RTOR)	8				31	
Confl. Peds. (#/hr)						
Confl. Bikes (#/hr)						
Peak Hour Factor	0.83	0.83	0.89	0.89	0.81	0.81
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)	0%			0%	0%	
Adj. Flow (vph)	747	23	16	735	7	31
Shared Lane Traffic (%)						
Lane Group Flow (vph)	770	0	0	751	38	0
Turn Type			Perm			
Protected Phases	4			8	2	
Permitted Phases			8			
Total Split (s)	41.0	0.0	41.0	41.0	24.0	0.0
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Act Effct Green (s)	23.6			23.6	33.4	
Actuated g/C Ratio	0.36			0.36	0.51	
v/c Ratio	0.60			0.62	0.04	
Control Delay	9.9			20.7	5.5	
Queue Delay	0.0			0.0	0.0	
Total Delay	9.9			20.7	5.5	
LOS	A			C	A	
Approach Delay	9.9			20.7	5.5	
Approach LOS	A			C	A	
Queue Length 50th (ft)	48			128	1	
Queue Length 95th (ft)	55			153	14	
Internal Link Dist (ft)	1338			395	279	
Turn Bay Length (ft)						
Base Capacity (vph)	2010			1882	858	
Starvation Cap Reductn	0			0	0	
Spillback Cap Reductn	0			0	0	
Storage Cap Reductn	0			0	0	
Reduced v/c Ratio	0.38			0.40	0.04	

Intersection Summary

Cycle Length: 65
Actuated Cycle Length: 65
Offset: 0 (0%), Referenced to phase 2:NBL and 6:, Start of Green
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.62
Intersection Signal Delay: 15.0 — Intersection LOS: B
Intersection Capacity Utilization 38.1% — ICU Level of Service A

Analysis Period (min) 15

Splits and Phases: 21: University Way & Pine St.



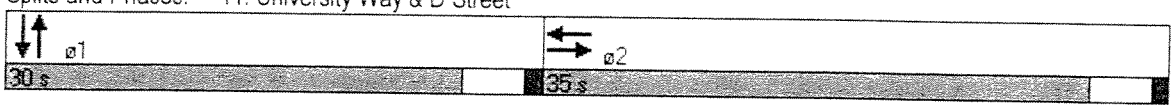
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	115	527	8	26	530	90	20	62	19	109	132	232
Satd. Flow (prot)	0	3500	0	0	3458	0	1770	1798	0	1770	1684	0
Flt Permitted		0.726			0.913		0.220			0.689		
Satd. Flow (perm)	0	2564	0	0	3163	0	410	1798	0	1283	1684	0
Satd. Flow (RTOR)		3			38			25			160	
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.93	0.93	0.93	0.91	0.91	0.91	0.77	0.77	0.77	0.81	0.81	0.81
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	124	567	9	29	582	99	26	81	25	135	163	286
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	700	0	0	710	0	26	106	0	135	449	0
Turn Type	Perm			Perm			Perm			Perm		
Protected Phases		2			2			1			1	
Permitted Phases	2			2			1			1		
Total Split (s)	35.0	35.0	0.0	35.0	35.0	0.0	30.0	30.0	0.0	30.0	30.0	0.0
Total Lost Time (s)	4.5	4.5	4.0	4.5	4.5	4.0	4.5	4.5	4.0	4.5	4.5	4.0
Act Effct Green (s)		36.9			36.9		19.1	19.1		19.1	19.1	
Actuated g/C Ratio		0.57			0.57		0.29	0.29		0.29	0.29	
v/c Ratio		0.48			0.39		0.21	0.19		0.36	0.74	
Control Delay		3.0			6.9		19.0	12.2		18.8	19.8	
Queue Delay		0.0			0.0		0.0	0.0		0.0	0.0	
Total Delay		3.0			6.9		19.0	12.2		18.8	19.8	
LOS		A			A		B	B		B	B	
Approach Delay		3.0			6.9			13.6			19.6	
Approach LOS		A			A			B			B	
Queue Length 50th (ft)		14			70		8	23		41	98	
Queue Length 95th (ft)		18			76		19	39		63	136	
Internal Link Dist (ft)		395			412			270			180	
Turn Bay Length (ft)							40			30		
Base Capacity (vph)		1456			1811		161	721		503	758	
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		0.48			0.39		0.16	0.15		0.27	0.59	

Intersection Summary

Cycle Length: 65
Actuated Cycle Length: 65
Offset: 33 (51%), Referenced to phase 2:EBWB and 6:, Start of Green
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.74
Intersection Signal Delay: 9.5 — Intersection LOS: A
Intersection Capacity Utilization 68.9% — ICU Level of Service C

Analysis Period (min) 15

Splits and Phases: 11: University Way & D Street



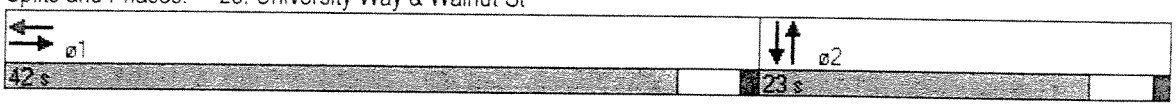
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	673	23	23	684	0	9	0	19	0	0	0
Satd. Flow (prot)	0	3169	0	0	3179	0	0	1498	0	0	1676	0
Flt Permitted					0.917			0.947				
Satd. Flow (perm)	0	3169	0	0	2921	0	0	1442	0	0	1676	0
Satd. Flow (RTOR)		9						28				
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.88	0.88	0.88	0.89	0.89	0.89	0.67	0.67	0.67	0.25	0.25	0.25
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	0	765	26	26	769	0	13	0	28	0	0	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	791	0	0	795	0	0	41	0	0	0	0
Turn Type	Perm			Perm			Perm			Perm		
Protected Phases		1			1			2			2	
Permitted Phases	1			1			2			2		
Total Split (s)	42.0	42.0	0.0	42.0	42.0	0.0	23.0	23.0	0.0	23.0	23.0	0.0
Total Lost Time (s)	4.5	4.5	4.0	4.5	4.5	4.0	4.5	4.5	4.0	4.5	4.5	4.0
Act Effct Green (s)		33.8			33.8			22.2				
Actuated g/C Ratio		0.52			0.52			0.34				
v/c Ratio		0.48			0.52			0.08				
Control Delay		5.5			14.0			9.9				
Queue Delay		0.0			0.0			0.0				
Total Delay		5.5			14.0			9.9				
LOS		A			B			A				
Approach Delay		5.5			14.0			9.9				
Approach LOS		A			B			A				
Queue Length 50th (ft)		13			72			4				
Queue Length 95th (ft)		46			146			15				
Internal Link Dist (ft)		391			406			219			173	
Turn Bay Length (ft)												
Base Capacity (vph)		1832			1685			510				
Starvation Cap Reductn		0			0			0				
Spillback Cap Reductn		0			0			0				
Storage Cap Reductn		0			0			0				
Reduced v/c Ratio		0.43			0.47			0.08				

Intersection Summary

Cycle Length: 65
Actuated Cycle Length: 65
Offset: 54 (83%), Referenced to phase 2:NBSB and 6:, Start of Green
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.52
Intersection Signal Delay: 9.8 — Intersection LOS: A
Intersection Capacity Utilization 50.4% — ICU Level of Service A

Analysis Period (min) 15

Splits and Phases: 23: University Way & Walnut St



Lane Group	EBL2	EBL	EBR	NBL	NBT	NBR	SBL	SBT	SBR	SWL	SWR	SWR2
Lane Configurations												
Volume (vph)	59	605	117	88	25	296	23	46	83	248	508	2
Satd. Flow (prot)	1770	3386	0	1770	1606	0	1770	1684	0	1770	2787	0
Flt Permitted	0.393	0.960		0.668			0.427			0.304		
Satd. Flow (perm)	732	3386	0	1244	1606	0	795	1684	0	566	2787	0
Satd. Flow (RTOR)		51			195			90			1	
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
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
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%		0%		
Adj. Flow (vph)	64	658	127	96	27	322	25	50	90	270	552	2
Shared Lane Traffic (%)												
Lane Group Flow (vph)	64	785	0	96	349	0	25	140	0	270	554	0
Turn Type	Perm			Perm			Perm				Over	
Protected Phases		1			2			2			1	
Permitted Phases	1			2			2			1		
Total Split (s)	37.0	37.0	0.0	28.0	28.0	0.0	28.0	28.0	0.0	37.0	37.0	0.0
Total Lost Time (s)	4.5	4.5	4.0	4.5	4.5	4.0	4.5	4.5	4.0	4.5	4.5	4.0
Act Effct Green (s)	32.1	32.1		23.9	23.9		23.9	23.9		32.1	32.1	
Actuated g/C Ratio	0.49	0.49		0.37	0.37		0.37	0.37		0.49	0.49	
v/c Ratio	0.18	0.46		0.21	0.49		0.09	0.21		0.96	0.40	
Control Delay	3.3	2.3		16.0	9.7		14.8	7.1		65.6	10.5	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	3.3	2.3		16.0	9.7		14.8	7.1		65.6	10.5	
LOS	A	A		B	A		B	A		E	B	
Approach Delay		2.4			11.0			8.3		28.5		
Approach LOS		A			B			A		C		
Queue Length 50th (ft)	2	9		26	42		6	13		76	71	
Queue Length 95th (ft)	8	23		57	106		21	46		#229	86	
Internal Link Dist (ft)		406			270			221		1592		
Turn Bay Length (ft)	30	30		20			20			30		
Base Capacity (vph)	366	1719		458	714		292	676		283	1394	
Starvation Cap Reductn	0	0		0	0		0	0		0	0	
Spillback Cap Reductn	0	0		0	0		0	0		0	0	
Storage Cap Reductn	0	0		0	0		0	0		0	0	
Reduced v/c Ratio	0.17	0.46		0.21	0.49		0.09	0.21		0.95	0.40	

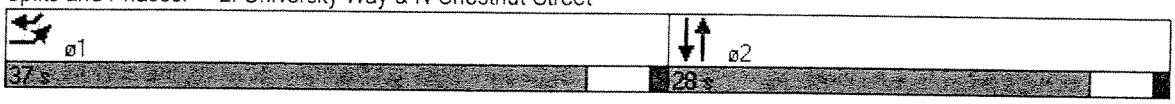
Intersection Summary

Cycle Length: 65
Actuated Cycle Length: 65
Offset: 63 (97%), Referenced to phase 2:NBSB and 6:, Start of Green
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.96
Intersection Signal Delay: 13.9 — Intersection LOS: B
Intersection Capacity Utilization 72.6% — ICU Level of Service C

Analysis Period (min) 15

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

Splits and Phases: 2: University Way & N Chestnut Street



2009 Existing Optimized Lanes\Volumes\Queues

PM Peak Hour

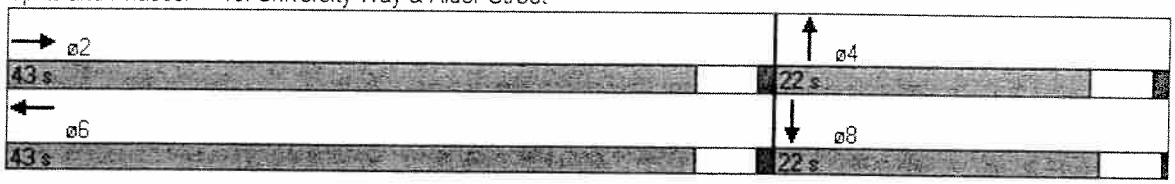
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	287	584	13	2	353	56	9	1	0	88	8	266
Satd. Flow (prot)	1593	3176	0	1593	3118	0	0	1604	0	0	1603	1425
Flt Permitted	0.494			0.404				0.778			0.736	
Satd. Flow (perm)	828	3176	0	677	3118	0	0	1304	0	0	1234	1425
Satd. Flow (RTOR)		6			48							289
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
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
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	312	635	14	2	384	61	10	1	0	96	9	289
Shared Lane Traffic (%)												
Lane Group Flow (vph)	312	649	0	2	445	0	0	11	0	0	105	289
Turn Type	Perm			Perm			Perm			Perm		Perm
Protected Phases		2			6			4			8	
Permitted Phases	2			6			4			8		8
Total Split (s)	43.0	43.0	0.0	43.0	43.0	0.0	22.0	22.0	0.0	22.0	22.0	22.0
Total Lost Time (s)	4.5	4.5	4.0	4.5	4.5	4.0	4.5	4.5	4.0	4.0	4.0	4.0
Act Effct Green (s)	45.3	45.3		45.3	45.3			10.7			11.2	11.2
Actuated g/C Ratio	0.70	0.70		0.70	0.70			0.16			0.17	0.17
v/c Ratio	0.54	0.29		0.00	0.20			0.05			0.49	0.60
Control Delay	8.0	3.1		4.5	3.9			20.5			31.0	8.6
Queue Delay	0.0	0.0		0.0	0.0			0.0			0.0	0.0
Total Delay	8.0	3.1		4.5	3.9			20.5			31.0	8.6
LOS	A	A		A	A			C			C	A
Approach Delay		4.7			3.9			20.5			14.6	
Approach LOS		A			A			C			B	
Queue Length 50th (ft)	34	25		0	22			4			39	0
Queue Length 95th (ft)	91	51		2	51			14			72	52
Internal Link Dist (ft)		1592			920			281			212	
Turn Bay Length (ft)	30			30								
Base Capacity (vph)	577	2215		472	2188			351			342	604
Starvation Cap Reductn	0	0		0	0			0			0	0
Spillback Cap Reductn	0	0		0	0			0			0	0
Storage Cap Reductn	0	0		0	0			0			0	0
Reduced v/c Ratio	0.54	0.29		0.00	0.20			0.03			0.31	0.48

Intersection Summary

Cycle Length: 65
Actuated Cycle Length: 65
Offset: 0 (0%), Referenced to phase 2:EBTL, Start of Green
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.60
Intersection Signal Delay: 6.7 — Intersection LOS: A
Intersection Capacity Utilization 49.4% — ICU Level of Service A

Analysis Period (min) 15

Splits and Phases: 16: University Way & Alder Street



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	26	338	88	95	418	91	97	307	94	49	216	62
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	0		0	30		0	30		0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (ft)	25		25	25		25	25		25	25		25
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.969			0.973			0.965			0.967	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	1805	0	1770	1812	0	1770	1798	0	1770	1801	0
Flt Permitted	0.248			0.314			0.560			0.404		
Satd. Flow (perm)	462	1805	0	585	1812	0	1043	1798	0	753	1801	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		35			29			41			38	
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		1000			328			232			221	
Travel Time (s)		22.7			7.5			5.3			5.0	
Peak Hour Factor	0.90	0.90	0.90	0.96	0.96	0.96	0.89	0.89	0.89	0.92	0.92	0.92
Adj. Flow (vph)	29	376	98	99	435	95	109	345	106	53	235	67
Shared Lane Traffic (%)												
Lane Group Flow (vph)	29	474	0	99	530	0	109	451	0	53	302	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		24			24			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	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	
Turn Type	Perm			Perm			Perm			Perm		
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Detector Phase	4	4		8	8		2	2		6	6	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Switch Phase												
Minimum Initial (s)	10.0	10.0		4.0	4.0		10.0	10.0		4.0	4.0	
Minimum Split (s)	22.5	22.5		22.5	22.5		22.0	22.0		22.5	22.5	
Total Split (s)	22.5	22.5	0.0	22.5	22.5	0.0	22.5	22.5	0.0	22.5	22.5	0.0
Total Split (%)	50.0%	50.0%	0.0%	50.0%	50.0%	0.0%	50.0%	50.0%	0.0%	50.0%	50.0%	0.0%
Maximum Green (s)	18.0	18.0		18.0	18.0		18.0	18.0		18.0	18.0	
Yellow Time (s)	3.5	3.5		3.5	3.5		3.5	3.5		3.5	3.5	
All-Red Time (s)	1.0	1.0		1.0	1.0		1.0	1.0		1.0	1.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.5	4.5	4.0	4.5	4.5	4.0	4.5	4.5	4.0	4.5	4.5	4.0
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Minimum Gap (s)	2.0	2.0		2.0	2.0		2.0	2.0		2.0	2.0	
Time Before Reduce (s)	10.0	10.0		10.0	10.0		10.0	10.0		10.0	10.0	
Time To Reduce (s)	10.0	10.0		10.0	10.0		10.0	10.0		10.0	10.0	
Recall Mode	None	None		None	None		C-Max	C-Max		None	None	
Walk Time (s)	7.0	7.0		7.0	7.0		7.0	7.0		7.0	7.0	
Flash Dont Walk (s)	11.0	11.0		9.0	9.0		8.0	8.0		8.0	8.0	
Pedestrian Calls (#/hr)	0	0		0	0		0	0		0	0	
Act Effct Green (s)	16.1	16.1		16.1	16.1		19.9	19.9		19.9	19.9	
Actuated g/C Ratio	0.36	0.36		0.36	0.36		0.44	0.44		0.44	0.44	
v/c Ratio	0.18	0.71		0.47	0.79		0.24	0.55		0.16	0.37	
Control Delay	11.9	17.7		18.9	22.4		10.7	12.3		10.2	9.7	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	11.9	17.7		18.9	22.4		10.7	12.3		10.2	9.7	
LOS	B	B		B	C		B	B		B	A	
Approach Delay		17.3			21.9			12.0			9.8	
Approach LOS		B			C			B			A	
Queue Length 50th (ft)	5	86		18	103		18	77		8	45	
Queue Length 95th (ft)	18	162		52	#230		44	147		26	92	
Internal Link Dist (ft)		920			248			152			141	
Turn Bay Length (ft)							30			30		
Base Capacity (vph)	185	743		234	742		461	818		333	818	
Starvation Cap Reductn	0	0		0	0		0	0		0	0	
Spillback Cap Reductn	0	0		0	0		0	0		0	0	
Storage Cap Reductn	0	0		0	0		0	0		0	0	
Reduced v/c Ratio	0.16	0.64		0.42	0.71		0.24	0.55		0.16	0.37	

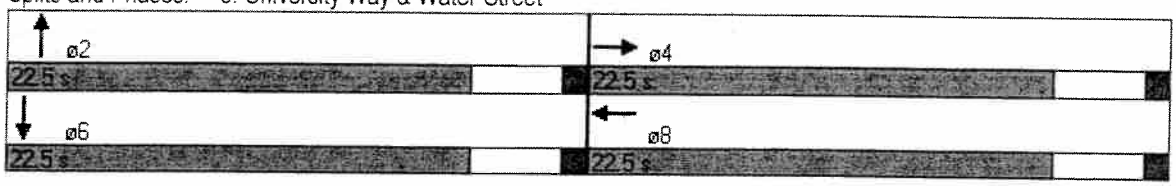
Intersection Summary

Area Type: Other
Cycle Length: 45
Actuated Cycle Length: 45
Offset: 0 (0%), Referenced to phase 2:NBTL, Start of Green
Natural Cycle: 45
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.79
Intersection Signal Delay: 16.0 Intersection LOS: B
Intersection Capacity Utilization 76.1% ICU Level of Service D

Analysis Period (min) 15

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

Splits and Phases: 5: University Way & Water Street



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	30	408	104	242	440	48	214	197	150	28	132	27
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	30		0	30		0	50		50	30		0
Storage Lanes	1		0	1		0	1		1	1		1
Taper Length (ft)	25		25	25		25	25		25	25		25
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.970			0.985				0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	1807	0	1770	1835	0	1770	1863	1583	1770	1863	1583
Flt Permitted	0.127			0.456			0.666			0.129		
Satd. Flow (perm)	237	1807	0	849	1835	0	1241	1863	1583	240	1863	1583
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		18			7				163			29
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		328			1418			218			227	
Travel Time (s)		7.5			32.2			5.0			5.2	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	33	443	113	263	478	52	233	214	163	30	143	29
Shared Lane Traffic (%)												
Lane Group Flow (vph)	33	556	0	263	530	0	233	214	163	30	143	29
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	1
Detector Template	Left	Thru		Left	Thru		Left	Thru	Right	Left	Thru	Right
Leading Detector (ft)	20	100		20	100		20	100	20	20	100	20
Trailing Detector (ft)	0	0		0	0		0	0	0	0	0	0
Detector 1 Position(ft)	0	0		0	0		0	0	0	0	0	0
Detector 1 Size(ft)	20	6		20	6		20	6	20	20	6	20
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
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			pm+pt			pm+pt		pm+ov	pm+pt		pm+ov
Protected Phases	5!	2!		3!	8!		7!	4!	3	1!	6!	5
Permitted Phases	2!			8!			4!		4	6!		6
Detector Phase	5	2		3	8		7	4	3	1	6	5

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Switch Phase												
Minimum Initial (s)	3.0	5.0		3.0	5.0		3.0	5.0	3.0	3.0	5.0	3.0
Minimum Split (s)	8.0	21.5		8.0	20.5		8.0	23.5	8.0	8.0	21.5	8.0
Total Split (s)	8.0	34.0	0.0	13.0	30.0	0.0	8.0	25.0	13.0	8.0	34.0	8.0
Total Split (%)	10.0%	42.5%	0.0%	16.3%	37.5%	0.0%	10.0%	31.3%	16.3%	10.0%	42.5%	10.0%
Maximum Green (s)	3.5	29.5		8.5	25.5		3.5	20.5	8.5	3.5	29.5	3.5
Yellow Time (s)	3.5	3.5		3.5	3.5		3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	1.0	1.0		1.0	1.0		1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.5	4.5	4.0	4.5	4.5	4.0	4.5	4.5	4.5	4.5	4.5	4.5
Lead/Lag	Lead	Lag		Lead	Lag		Lead	Lag	Lead	Lead	Lag	Lead
Lead-Lag Optimize?	Yes	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	3.0
Minimum Gap (s)	0.2	0.2		0.2	0.2		0.2	0.2	0.2	0.2	0.2	0.2
Time Before Reduce (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Time To Reduce (s)	1.0	1.0		1.0	1.0		1.0	1.0	1.0	1.0	1.0	1.0
Recall Mode	None	C-Max		None	None		None	Max	None	None	C-Max	None
Walk Time (s)		5.0			5.0			5.0			5.0	
Flash Dont Walk (s)		12.0			10.0			14.0			12.0	
Pedestrian Calls (#/hr)		0			0			0			0	
Act Effct Green (s)	35.7	34.3		33.5	25.5		24.0	20.5	33.5	34.8	32.7	37.5
Actuated g/C Ratio	0.45	0.43		0.42	0.32		0.30	0.26	0.42	0.44	0.41	0.47
v/c Ratio	0.19	0.71		0.58	0.90		0.59	0.45	0.22	0.18	0.19	0.04
Control Delay	14.3	25.8		22.0	46.6		27.4	28.6	3.4	14.0	17.2	4.7
Queue Delay	0.0	33.3		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	14.3	59.1		22.0	46.6		27.4	28.6	3.4	14.0	17.2	4.7
LOS	B	E		C	D		C	C	A	B	B	A
Approach Delay		56.5			38.5			21.4			14.9	
Approach LOS		E			D			C			B	
Queue Length 50th (ft)	9	196		87	247		76	90	0	8	48	0
Queue Length 95th (ft)	23	#413		144	#435		128	153	34	22	88	13
Internal Link Dist (ft)		248			1338			138			147	
Turn Bay Length (ft)	30			30			50		50	30		
Base Capacity (vph)	173	785		453	590		395	477	758	171	761	757
Starvation Cap Reductn	0	254		0	0		0	0	0	0	0	0
Spillback Cap Reductn	0	0		0	0		0	0	0	0	0	0
Storage Cap Reductn	0	0		0	0		0	0	0	0	0	0
Reduced v/c Ratio	0.19	1.05		0.58	0.90		0.59	0.45	0.22	0.18	0.19	0.04

Intersection Summary

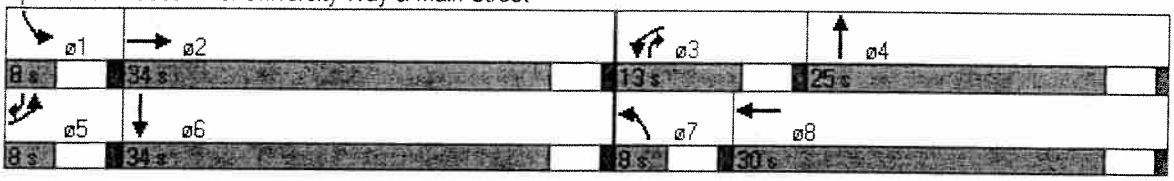
Area Type: Other
Cycle Length: 80
Actuated Cycle Length: 80
Offset: 0 (0%), Referenced to phase 2:EBTL and 6:SBTL, Start of Green
Natural Cycle: 80
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.90
Intersection Signal Delay: 36.4 — Intersection LOS: D
Intersection Capacity Utilization 75.0% — ICU Level of Service D

Analysis Period (min) 15

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

! Phase conflict between lane groups.

Splits and Phases: 8: University Way & Main Street



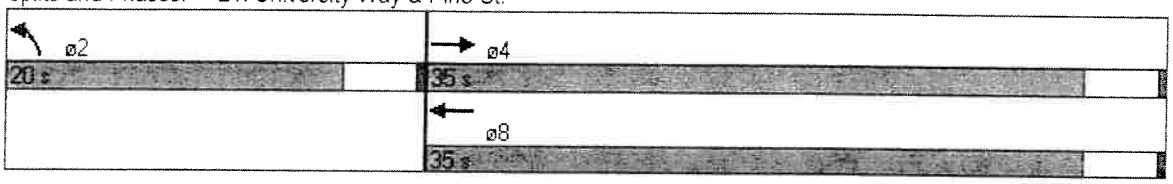
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (vph)	620	19	14	654	6	25
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.996				0.890	
Flt Protected			0.950		0.991	
Satd. Flow (prot)	1855	0	1770	1863	1643	0
Flt Permitted			0.151		0.991	
Satd. Flow (perm)	1855	0	281	1863	1643	0
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)	5				31	
Link Speed (mph)	30			30	30	
Link Distance (ft)	1418			475	359	
Travel Time (s)	32.2			10.8	8.2	
Peak Hour Factor	0.83	0.83	0.89	0.89	0.81	0.81
Adj. Flow (vph)	747	23	16	735	7	31
Shared Lane Traffic (%)						
Lane Group Flow (vph)	770	0	16	735	38	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	12			12	12	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)		9	15		15	9
Number of Detectors	2		1	2	1	
Detector Template	Thru		Left	Thru	Left	
Leading Detector (ft)	100		20	100	20	
Trailing Detector (ft)	0		0	0	0	
Detector 1 Position(ft)	0		0	0	0	
Detector 1 Size(ft)	6		20	6	20	
Detector 1 Type	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	
Detector 1 Channel						
Detector 1 Extend (s)	0.0		0.0	0.0	0.0	
Detector 1 Queue (s)	0.0		0.0	0.0	0.0	
Detector 1 Delay (s)	0.0		0.0	0.0	0.0	
Detector 2 Position(ft)	94			94		
Detector 2 Size(ft)	6			6		
Detector 2 Type	Cl+Ex			Cl+Ex		
Detector 2 Channel						
Detector 2 Extend (s)	0.0			0.0		
Turn Type			Perm			
Protected Phases	4			8	2	
Permitted Phases			8			
Detector Phase	4		8	8	2	
Switch Phase						
Minimum Initial (s)	4.0		4.0	4.0	4.0	
Minimum Split (s)	20.0		20.0	20.0	20.0	

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Total Split (s)	35.0	0.0	35.0	35.0	20.0	0.0
Total Split (%)	63.6%	0.0%	63.6%	63.6%	36.4%	0.0%
Maximum Green (s)	31.0		31.0	31.0	16.0	
Yellow Time (s)	3.5		3.5	3.5	3.5	
All-Red Time (s)	0.5		0.5	0.5	0.5	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0		3.0	3.0	3.0	
Recall Mode	None		None	None	C-Max	
Walk Time (s)	5.0		5.0	5.0	5.0	
Flash Dont Walk (s)	11.0		11.0	11.0	11.0	
Pedestrian Calls (#/hr)	0		0	0	0	
Act Effct Green (s)	27.6		27.6	27.6	19.4	
Actuated g/C Ratio	0.50		0.50	0.50	0.35	
v/c Ratio	0.82		0.11	0.79	0.06	
Control Delay	19.7		7.9	17.7	7.5	
Queue Delay	0.0		0.0	0.1	0.0	
Total Delay	19.7		7.9	17.8	7.5	
LOS	B		A	B	A	
Approach Delay	19.7			17.5	7.5	
Approach LOS	B			B	A	
Queue Length 50th (ft)	179		2	166	2	
Queue Length 95th (ft)	240		10	256	16	
Internal Link Dist (ft)	1338			395	279	
Turn Bay Length (ft)						
Base Capacity (vph)	1048		158	1050	600	
Starvation Cap Reductn	0		0	14	0	
Spillback Cap Reductn	0		0	0	0	
Storage Cap Reductn	0		0	0	0	
Reduced v/c Ratio	0.73		0.10	0.71	0.06	

Intersection Summary

Area Type: Other
Cycle Length: 55
Actuated Cycle Length: 55
Offset: 0 (0%), Referenced to phase 2:NBL and 6:, Start of Green
Natural Cycle: 55
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.82
Intersection Signal Delay: 18.4 Intersection LOS: B
Intersection Capacity Utilization 44.4% ICU Level of Service A
Analysis Period (min) 15

Splits and Phases: 21: University Way & Pine St.



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	115	527	8	26	530	90	20	62	19	109	132	232
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	0		0	40		0	30		0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (ft)	25		25	25		25	25		25	25		25
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.998			0.978			0.965			0.904	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	1859	0	1770	1822	0	1770	1798	0	1770	1684	0
Flt Permitted	0.285			0.357			0.255			0.689		
Satd. Flow (perm)	531	1859	0	665	1822	0	475	1798	0	1283	1684	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		2			21			25			156	
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		475			492			350			260	
Travel Time (s)		10.8			11.2			8.0			5.9	
Peak Hour Factor	0.93	0.93	0.93	0.91	0.91	0.91	0.77	0.77	0.77	0.81	0.81	0.81
Adj. Flow (vph)	124	567	9	29	582	99	26	81	25	135	163	286
Shared Lane Traffic (%)												
Lane Group Flow (vph)	124	576	0	29	681	0	26	106	0	135	449	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		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	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	Perm			Perm			Perm			Perm		
Protected Phases		2			2			1			1	
Permitted Phases	2			2			1			1		
Detector Phase	2	2		2	2		1	1		1	1	

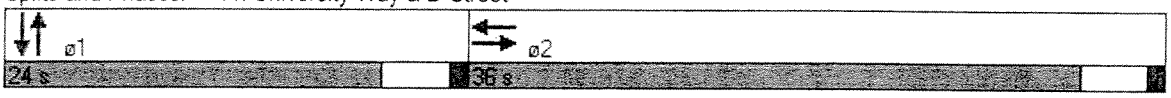
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Switch Phase												
Minimum Initial (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Minimum Split (s)	28.5	28.5		28.5	28.5		23.5	23.5		23.5	23.5	
Total Split (s)	36.0	36.0	0.0	36.0	36.0	0.0	24.0	24.0	0.0	24.0	24.0	0.0
Total Split (%)	60.0%	60.0%	0.0%	60.0%	60.0%	0.0%	40.0%	40.0%	0.0%	40.0%	40.0%	0.0%
Maximum Green (s)	31.5	31.5		31.5	31.5		19.5	19.5		19.5	19.5	
Yellow Time (s)	3.5	3.5		3.5	3.5		3.5	3.5		3.5	3.5	
All-Red Time (s)	1.0	1.0		1.0	1.0		1.0	1.0		1.0	1.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.5	4.5	4.0	4.5	4.5	4.0	4.5	4.5	4.0	4.5	4.5	4.0
Lead/Lag	Lag	Lag		Lag	Lag		Lead	Lead		Lead	Lead	
Lead-Lag Optimize?	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	
Minimum Gap (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Time Before Reduce (s)	0.0	0.0		0.0	0.0		10.0	10.0		10.0	10.0	
Time To Reduce (s)	1.0	1.0		1.0	1.0		5.0	5.0		5.0	5.0	
Recall Mode	C-Max	C-Max		C-Max	C-Max		None	None		None	None	
Walk Time (s)	13.0	13.0		13.0	13.0		8.0	8.0		8.0	8.0	
Flash Dont Walk (s)	7.0	7.0		7.0	7.0		8.0	8.0		8.0	8.0	
Pedestrian Calls (#/hr)	0	0		0	0		0	0		0	0	
Act Effct Green (s)	35.3	35.3		35.3	35.3		15.7	15.7		15.7	15.7	
Actuated g/C Ratio	0.59	0.59		0.59	0.59		0.26	0.26		0.26	0.26	
v/c Ratio	0.40	0.53		0.07	0.63		0.21	0.22		0.40	0.81	
Control Delay	13.2	10.6		7.5	12.3		19.8	13.5		20.7	24.9	
Queue Delay	0.0	0.0		0.0	0.1		0.0	0.0		0.0	0.0	
Total Delay	13.2	10.6		7.5	12.4		19.8	13.5		20.7	24.9	
LOS	B	B		A	B		B	B		C	C	
Approach Delay		11.1			12.2			14.7			24.0	
Approach LOS		B			B			B			C	
Queue Length 50th (ft)	23	118		4	148		7	22		38	93	
Queue Length 95th (ft)	68	216		16	278		20	41		67	146	
Internal Link Dist (ft)		395			412			270			180	
Turn Bay Length (ft)							40			30		
Base Capacity (vph)	313	1095		391	1082		154	601		417	653	
Starvation Cap Reductn	0	0		0	25		0	0		0	0	
Spillback Cap Reductn	0	0		0	0		0	0		0	0	
Storage Cap Reductn	0	0		0	0		0	0		0	0	
Reduced v/c Ratio	0.40	0.53		0.07	0.64		0.17	0.18		0.32	0.69	

Intersection Summary

Area Type: Other
Cycle Length: 60
Actuated Cycle Length: 60
Offset: 0 (0%), Referenced to phase 2:EBWB and 6:, Start of Green
Natural Cycle: 60
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.81
Intersection Signal Delay: 15.2 Intersection LOS: B
Intersection Capacity Utilization 72.2% ICU Level of Service C

Analysis Period (min) 15

Splits and Phases: 11: University Way & D Street



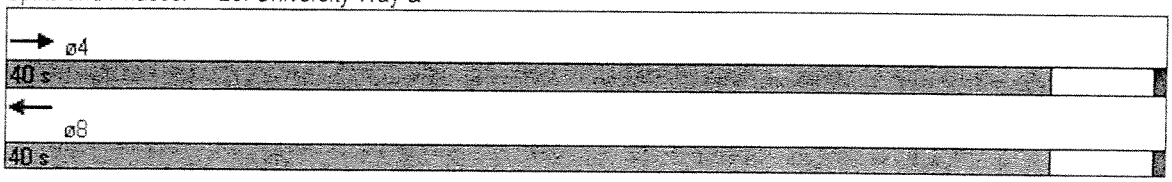
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑			↑↑		
Volume (vph)	673	0	0	530	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	0.95	1.00	1.00	0.95	1.00	1.00
Frt						
Flt Protected						
Satd. Flow (prot)	3539	0	0	3539	0	0
Flt Permitted						
Satd. Flow (perm)	3539	0	0	3539	0	0
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)						
Link Speed (mph)	30			30	30	
Link Distance (ft)	492			471	225	
Travel Time (s)	11.2			10.7	5.1	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	732	0	0	576	0	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	732	0	0	576	0	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	0			0	0	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)		9	15		15	9
Number of Detectors	2			2		
Detector Template	Thru			Thru		
Leading Detector (ft)	100			100		
Trailing Detector (ft)	0			0		
Detector 1 Position(ft)	0			0		
Detector 1 Size(ft)	6			6		
Detector 1 Type	Cl+Ex			Cl+Ex		
Detector 1 Channel						
Detector 1 Extend (s)	0.0			0.0		
Detector 1 Queue (s)	0.0			0.0		
Detector 1 Delay (s)	0.0			0.0		
Detector 2 Position(ft)	94			94		
Detector 2 Size(ft)	6			6		
Detector 2 Type	Cl+Ex			Cl+Ex		
Detector 2 Channel						
Detector 2 Extend (s)	0.0			0.0		
Turn Type						
Protected Phases	4			8		
Permitted Phases						
Detector Phase	4			8		
Switch Phase						
Minimum Initial (s)	4.0			4.0		
Minimum Split (s)	20.0			20.0		

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Total Split (s)	40.0	0.0	0.0	40.0	0.0	0.0
Total Split (%)	100.0%	0.0%	0.0%	100.0%	0.0%	0.0%
Maximum Green (s)	36.0			36.0		
Yellow Time (s)	3.5			3.5		
All-Red Time (s)	0.5			0.5		
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0			3.0		
Recall Mode	None			None		
Walk Time (s)	5.0			5.0		
Flash Dont Walk (s)	11.0			11.0		
Pedestrian Calls (#/hr)	0			0		
Act Effct Green (s)	40.0			40.0		
Actuated g/C Ratio	1.00			1.00		
v/c Ratio	0.21			0.16		
Control Delay	0.1			0.1		
Queue Delay	0.0			0.0		
Total Delay	0.1			0.1		
LOS	A			A		
Approach Delay	0.1			0.1		
Approach LOS	A			A		
Queue Length 50th (ft)	0			0		
Queue Length 95th (ft)	0			0		
Internal Link Dist (ft)	412			391	145	
Turn Bay Length (ft)						
Base Capacity (vph)	3539			3539		
Starvation Cap Reductn	0			0		
Spillback Cap Reductn	0			0		
Storage Cap Reductn	0			0		
Reduced v/c Ratio	0.21			0.16		

Intersection Summary

Area Type: Other
Cycle Length: 40
Actuated Cycle Length: 40
Offset: 0 (0%), Referenced to phase 2: and 6:, Start of Green
Natural Cycle: 40
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.21
Intersection Signal Delay: 0.1 Intersection LOS: A
Intersection Capacity Utilization 21.9% ICU Level of Service A
Analysis Period (min) 15

Splits and Phases: 26: University Way &



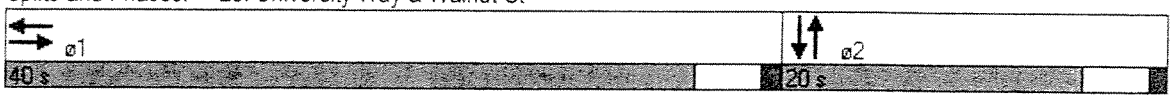
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	673	23	23	684	0	9	0	19	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.995						0.908				
Flt Protected				0.950				0.984				
Satd. Flow (prot)	1676	1668	0	1593	1676	0	0	1498	0	0	1676	0
Flt Permitted				0.187				0.943				
Satd. Flow (perm)	1676	1668	0	314	1676	0	0	1435	0	0	1676	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		5						28				
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		471			486			299			253	
Travel Time (s)		10.7			11.0			6.8			5.8	
Peak Hour Factor	0.88	0.88	0.88	0.89	0.89	0.89	0.67	0.67	0.67	0.25	0.25	0.25
Adj. Flow (vph)	0	765	26	26	769	0	13	0	28	0	0	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	791	0	26	769	0	0	41	0	0	0	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		24			24			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.14	1.14	1.14	1.14	1.14	1.14	1.14	1.14	1.14	1.14	1.14	1.14
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	
Turn Type	Perm			Perm			Perm			Perm		
Protected Phases		1			1			2			2	
Permitted Phases	1			1			2			2		
Detector Phase	1	1		1	1		2	2		2	2	
Switch Phase												
Minimum Initial (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Minimum Split (s)	22.5	22.5		22.5	22.5		20.0	20.0		20.0	20.0	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Total Split (s)	40.0	40.0	0.0	40.0	40.0	0.0	20.0	20.0	0.0	20.0	20.0	0.0
Total Split (%)	66.7%	66.7%	0.0%	66.7%	66.7%	0.0%	33.3%	33.3%	0.0%	33.3%	33.3%	0.0%
Maximum Green (s)	35.5	35.5		35.5	35.5		15.5	15.5		15.5	15.5	
Yellow Time (s)	3.5	3.5		3.5	3.5		3.5	3.5		3.5	3.5	
All-Red Time (s)	1.0	1.0		1.0	1.0		1.0	1.0		1.0	1.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.5	4.5	4.0	4.5	4.5	4.0	4.5	4.5	4.0	4.5	4.5	4.0
Lead/Lag	Lead	Lead		Lead	Lead		Lag	Lag		Lag	Lag	
Lead-Lag Optimize?	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	
Minimum Gap (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Time Before Reduce (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Time To Reduce (s)	1.0	1.0		1.0	1.0		1.0	1.0		1.0	1.0	
Recall Mode	None	None		None	None		C-Max	C-Max		C-Max	C-Max	
Walk Time (s)	7.0	7.0		7.0	7.0		7.0	7.0		7.0	7.0	
Flash Dont Walk (s)	8.0	8.0		8.0	8.0		4.0	4.0		4.0	4.0	
Pedestrian Calls (#/hr)	0	0		0	0		0	0		0	0	
Act Effct Green (s)		33.4		33.4	33.4			17.6				
Actuated g/C Ratio		0.56		0.56	0.56			0.29				
v/c Ratio		0.85		0.15	0.82			0.09				
Control Delay		21.5		8.0	19.6			10.1				
Queue Delay		0.6		0.0	0.2			0.0				
Total Delay		22.1		8.0	19.8			10.1				
LOS		C		A	B			B				
Approach Delay		22.1			19.4			10.1				
Approach LOS		C			B			B				
Queue Length 50th (ft)		192		4	183			4				
Queue Length 95th (ft)		#352		14	#325			15				
Internal Link Dist (ft)		391			406			219			173	
Turn Bay Length (ft)												
Base Capacity (vph)		989		186	992			440				
Starvation Cap Reductn		40		0	15			0				
Spillback Cap Reductn		0		0	0			0				
Storage Cap Reductn		0		0	0			0				
Reduced v/c Ratio		0.83		0.14	0.79			0.09				

Intersection Summary

Area Type: CBD
Cycle Length: 60
Actuated Cycle Length: 60
Offset: 0 (0%), Referenced to phase 2:NBSB and 6:, Start of Green
Natural Cycle: 60
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.85
Intersection Signal Delay: 20.5 — Intersection LOS: C
Intersection Capacity Utilization 51.7% — ICU Level of Service A
Analysis Period (min) 15
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 23: University Way & Walnut St



Lane Group	EBL2	EBL	EBR	NBL	NBT	NBR	SBL	SBT	SBR	SWL	SWR	SWR2
Lane Configurations												
Volume (vph)	59	605	117	88	25	296	23	46	83	248	508	2
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)		30	0	20		0	20		0	30	0	
Storage Lanes		1	0	1		0	1		0	1	1	
Taper Length (ft)		25	25	25		25	25		25	25	25	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.976			0.862			0.904			0.850	
Flt Protected	0.950	0.960		0.950			0.950			0.950		
Satd. Flow (prot)	1770	1745	0	1770	1606	0	1770	1684	0	1770	1583	0
Flt Permitted	0.374	0.960		0.639			0.293			0.231		
Satd. Flow (perm)	697	1745	0	1190	1606	0	546	1684	0	430	1583	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		21			286			90				
Link Speed (mph)		30			30			30		30		
Link Distance (ft)		486			350			301		1672		
Travel Time (s)		11.0			8.0			6.8		38.0		
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)	64	658	127	96	27	322	25	50	90	270	552	2
Shared Lane Traffic (%)												
Lane Group Flow (vph)	64	785	0	96	349	0	25	140	0	270	554	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	Right	Right
Median Width(ft)		24			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	15	9	15		9	15		9	15	9	9
Number of Detectors	1	1		1	2		1	2		1	1	
Detector Template	Left	Left		Left	Thru		Left	Thru		Left	Right	
Leading Detector (ft)	20	20		20	100		20	100		20	20	
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	20		20	6		20	6		20	20	
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				
Detector 2 Size(ft)					6			6				
Detector 2 Type					Cl+Ex			Cl+Ex				
Detector 2 Channel												
Detector 2 Extend (s)					0.0			0.0				
Turn Type	Perm			Perm			Perm				Over	
Protected Phases		1			2			2			1	
Permitted Phases	1			2			2			1		
Detector Phase	1	1		2	2		2	2		1	1	

Lane Group	EBL2	EBL	EBR	NBL	NBT	NBR	SBL	SBT	SBR	SWL	SWR	SWR2
Switch Phase												
Minimum Initial (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Minimum Split (s)	16.0	16.0		27.5	27.5		27.5	27.5		16.0	16.0	
Total Split (s)	62.0	62.0	0.0	28.0	28.0	0.0	28.0	28.0	0.0	62.0	62.0	0.0
Total Split (%)	68.9%	68.9%	0.0%	31.1%	31.1%	0.0%	31.1%	31.1%	0.0%	68.9%	68.9%	0.0%
Maximum Green (s)	57.5	57.5		23.5	23.5		23.5	23.5		57.5	57.5	
Yellow Time (s)	3.5	3.5		3.5	3.5		3.5	3.5		3.5	3.5	
All-Red Time (s)	1.0	1.0		1.0	1.0		1.0	1.0		1.0	1.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.5	4.5	4.0	4.5	4.5	4.0	4.5	4.5	4.0	4.5	4.5	4.0
Lead/Lag	Lead	Lead		Lag	Lag		Lag	Lag		Lead	Lead	
Lead-Lag Optimize?	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	
Minimum Gap (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Time Before Reduce (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Time To Reduce (s)	0.0	0.0		1.0	1.0		1.0	1.0		0.0	0.0	
Recall Mode	None	None		C-Max	C-Max		C-Max	C-Max		None	None	
Walk Time (s)				12.0	12.0		12.0	12.0				
Flash Dont Walk (s)				8.0	8.0		8.0	8.0				
Pedestrian Calls (#/hr)				0	0		0	0				
Act Effct Green (s)	56.8	56.8		24.2	24.2		24.2	24.2		56.8	56.8	
Actuated g/C Ratio	0.63	0.63		0.27	0.27		0.27	0.27		0.63	0.63	
v/c Ratio	0.15	0.71		0.30	0.54		0.17	0.27		1.00	0.56	
Control Delay	7.5	15.0		29.8	9.8		29.4	12.4		74.0	11.9	
Queue Delay	0.0	3.5		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	7.5	18.5		29.8	9.8		29.4	12.4		74.0	11.9	
LOS	A	B		C	A		C	B		E	B	
Approach Delay		17.6			14.1			15.0		32.2		
Approach LOS		B			B			B		C		
Queue Length 50th (ft)	13	255		44	28		11	22		134	157	
Queue Length 95th (ft)	30	390		88	105		33	68		#310	242	
Internal Link Dist (ft)		406			270			221		1592		
Turn Bay Length (ft)	30	30		20			20			30		
Base Capacity (vph)	445	1122		321	642		147	519		275	1011	
Starvation Cap Reductn	0	241		0	0		0	0		0	0	
Spillback Cap Reductn	0	0		0	0		0	0		0	0	
Storage Cap Reductn	0	0		0	0		0	0		0	0	
Reduced v/c Ratio	0.14	0.89		0.30	0.54		0.17	0.27		0.98	0.55	

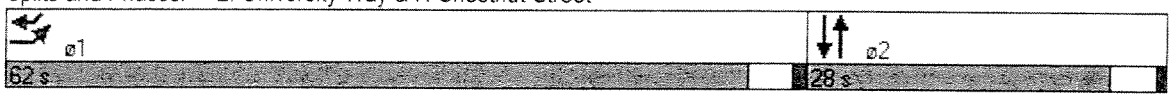
Intersection Summary

Area Type: Other
Cycle Length: 90
Actuated Cycle Length: 90
Offset: 8 (9%), Referenced to phase 2:NBSB and 6:, Start of Green
Natural Cycle: 90
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 1.00
Intersection Signal Delay: 22.0 — Intersection LOS: C
Intersection Capacity Utilization 92.3% — ICU Level of Service F

Analysis Period (min) 15

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

Splits and Phases: 2: University Way & N Chestnut Street



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	287	584	13	2	353	56	9	1	0	88	8	266
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	30		0	30		0	0		0	0		0
Storage Lanes	1		0	1		0	0		0	0		1
Taper Length (ft)	25		25	25		25	25		25	25		25
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.997			0.979							0.850
Flt Protected	0.950			0.950				0.957			0.956	
Satd. Flow (prot)	1593	1671	0	1593	1641	0	0	1604	0	0	1603	1425
Flt Permitted	0.484			0.356				0.771			0.736	
Satd. Flow (perm)	811	1671	0	597	1641	0	0	1293	0	0	1234	1425
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		3			22							289
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		1672			1000			361			292	
Travel Time (s)		38.0			22.7			8.2			6.6	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	312	635	14	2	384	61	10	1	0	96	9	289
Shared Lane Traffic (%)												
Lane Group Flow (vph)	312	649	0	2	445	0	0	11	0	0	105	289
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.14	1.14	1.14	1.14	1.14	1.14	1.14	1.14	1.14	1.14	1.14	1.14
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2		1	2		1	2	1
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	Right
Leading Detector (ft)	20	100		20	100		20	100		20	100	20
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	6	20
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	Perm			Perm			Perm			Perm		Perm
Protected Phases		2			6			4			8	
Permitted Phases	2			6			4			8		8
Detector Phase	2	2		6	6		4	4		8	8	8

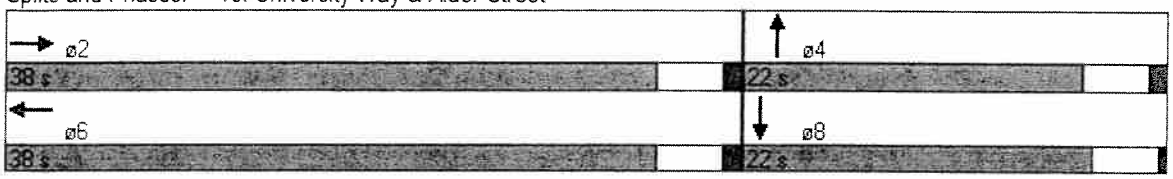
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Switch Phase												
Minimum Initial (s)	15.0	15.0		15.0	15.0		5.0	5.0		5.0	5.0	5.0
Minimum Split (s)	22.5	22.5		20.0	20.0		20.5	20.5		22.0	22.0	22.0
Total Split (s)	38.0	38.0	0.0	38.0	38.0	0.0	22.0	22.0	0.0	22.0	22.0	22.0
Total Split (%)	63.3%	63.3%	0.0%	63.3%	63.3%	0.0%	36.7%	36.7%	0.0%	36.7%	36.7%	36.7%
Maximum Green (s)	33.5	33.5		33.5	33.5		17.5	17.5		18.0	18.0	18.0
Yellow Time (s)	3.5	3.5		3.5	3.5		3.5	3.5		3.5	3.5	3.5
All-Red Time (s)	1.0	1.0		1.0	1.0		1.0	1.0		0.5	0.5	0.5
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.5	4.5	4.0	4.5	4.5	4.0	4.5	4.5	4.0	4.0	4.0	4.0
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	3.0
Minimum Gap (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	3.0
Time Before Reduce (s)	10.0	10.0		10.0	10.0		10.0	10.0		0.0	0.0	0.0
Time To Reduce (s)	10.0	10.0		10.0	10.0		10.0	10.0		10.0	10.0	10.0
Recall Mode	C-Max	C-Max		None	None		None	None		None	None	None
Walk Time (s)	7.0	7.0		7.0	7.0		5.0	5.0		7.0	7.0	7.0
Flash Dont Walk (s)	5.0	5.0		7.0	7.0		11.0	11.0		11.0	11.0	11.0
Pedestrian Calls (#/hr)	0	0		0	0		0	0		0	0	0
Act Effct Green (s)	41.1	41.1		41.1	41.1			9.9			10.4	10.4
Actuated g/C Ratio	0.68	0.68		0.68	0.68			0.16			0.17	0.17
v/c Ratio	0.56	0.57		0.00	0.39			0.05			0.49	0.59
Control Delay	11.2	8.2		4.5	5.9			19.1			29.1	8.5
Queue Delay	0.0	0.0		0.0	0.0			0.0			0.0	0.0
Total Delay	11.2	8.2		4.5	5.9			19.1			29.1	8.5
LOS	B	A		A	A			B			C	A
Approach Delay		9.2			5.8			19.1			14.0	
Approach LOS		A			A			B			B	
Queue Length 50th (ft)	45	93		0	50			3			35	0
Queue Length 95th (ft)	150	231		2	127			14			68	50
Internal Link Dist (ft)		1592			920			281			212	
Turn Bay Length (ft)	30			30								
Base Capacity (vph)	555	1144		409	1130			377			370	630
Starvation Cap Reductn	0	0		0	0			0			0	0
Spillback Cap Reductn	0	0		0	0			0			0	0
Storage Cap Reductn	0	0		0	0			0			0	0
Reduced v/c Ratio	0.56	0.57		0.00	0.39			0.03			0.28	0.46

Intersection Summary

Area Type: CBD
Cycle Length: 60
Actuated Cycle Length: 60
Offset: 0 (0%), Referenced to phase 2:EBTL, Start of Green
Natural Cycle: 60
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.59
Intersection Signal Delay: 9.5 — Intersection LOS: A
Intersection Capacity Utilization 66.1% — ICU Level of Service C

Analysis Period (min) 15

Splits and Phases: 16: University Way & Alder Street



Lane Group	EBL2	EBL	NBL	NBT	SBL	SBT	SWL	SWR
Lane Group Flow (vph)	64	785	96	349	25	140	270	554
v/c Ratio	0.15	0.71	0.30	0.54	0.17	0.27	1.00	0.56
Control Delay	2.9	7.3	29.8	9.8	29.4	12.4	74.0	11.9
Queue Delay	0.0	0.3	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	2.9	7.5	29.8	9.8	29.4	12.4	74.0	11.9
Queue Length 50th (ft)	2	17	44	28	11	22	134	157
Queue Length 95th (ft)	m6	243	88	105	33	68	#310	242
Internal Link Dist (ft)		406		270		221	1592	
Turn Bay Length (ft)	30	30	20		20		30	
Base Capacity (vph)	445	1122	321	642	147	519	275	1011
Starvation Cap Reductn	0	52	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.14	0.73	0.30	0.54	0.17	0.27	0.98	0.55

Intersection Summary

\# 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.

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	29	474	99	530	109	451	53	302
v/c Ratio	0.11	0.55	0.32	0.61	0.28	0.58	0.20	0.39
Control Delay	14.7	19.1	2.7	4.0	19.3	22.2	18.6	18.2
Queue Delay	0.0	2.2	0.0	0.2	0.0	2.0	0.4	0.0
Total Delay	14.7	21.3	2.7	4.2	19.3	24.2	19.1	18.2
Queue Length 50th (ft)	9	177	2	5	39	180	18	106
Queue Length 95th (ft)	26	270	m3	m14	78	272	45	172
Internal Link Dist (ft)		920		248		152		141
Turn Bay Length (ft)					30		30	
Base Capacity (vph)	263	863	305	865	389	781	268	782
Starvation Cap Reductn	0	0	0	49	0	0	0	0
Spillback Cap Reductn	0	252	0	0	0	192	65	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.11	0.78	0.32	0.65	0.28	0.77	0.26	0.39

Intersection Summary

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

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	33	556	263	530	233	214	163	30	143	29
v/c Ratio	0.22	0.72	0.54	0.87	0.61	0.48	0.21	0.20	0.18	0.04
Control Delay	16.2	31.1	15.6	35.9	30.5	34.2	3.6	15.9	18.4	5.1
Queue Delay	0.0	18.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	16.2	49.3	15.6	35.9	30.5	34.2	3.6	15.9	18.4	5.1
Queue Length 50th (ft)	12	302	40	234	85	107	1	9	53	0
Queue Length 95th (ft)	m24	#440	111	#460	139	176	36	24	95	14
Internal Link Dist (ft)		248		1338		138			147	
Turn Bay Length (ft)	30		30		50		50	30		
Base Capacity (vph)	152	767	501	606	385	445	757	152	780	763
Starvation Cap Reductn	0	209	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.22	1.00	0.52	0.87	0.61	0.48	0.22	0.20	0.18	0.04

Intersection Summary

\# 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.

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	124	576	29	681	26	106	135	449
v/c Ratio	0.50	0.56	0.09	0.67	0.15	0.17	0.30	0.68
Control Delay	11.5	6.4	8.4	11.6	23.0	17.3	23.6	24.8
Queue Delay	0.0	0.4	0.0	0.8	0.0	0.0	0.0	0.0
Total Delay	11.5	6.8	8.4	12.4	23.0	17.3	23.6	24.8
Queue Length 50th (ft)	2	8	4	91	10	33	55	163
Queue Length 95th (ft)	m56	188	15	247	25	57	90	227
Internal Link Dist (ft)		395		412		270		180
Turn Bay Length (ft)					40		30	
Base Capacity (vph)	247	1023	324	1009	173	642	449	660
Starvation Cap Reductn	0	116	0	115	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.50	0.64	0.09	0.76	0.15	0.17	0.30	0.68

Intersection Summary

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

Lane Group	EBL	EBT	WBL	WBT	NBT	SBT	SBR
Lane Group Flow (vph)	312	649	2	445	11	105	289
v/c Ratio	0.75	0.69	0.01	0.48	0.03	0.27	0.46
Control Delay	25.3	14.5	6.0	9.7	15.5	18.5	5.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	25.3	14.5	6.0	9.7	15.5	18.5	5.2
Queue Length 50th (ft)	77	150	0	81	3	29	0
Queue Length 95th (ft)	#215	262	3	144	13	64	47
Internal Link Dist (ft)		1592		920	281	212	
Turn Bay Length (ft)	30		30				
Base Capacity (vph)	414	934	270	926	409	383	630
Starvation Cap Reductn	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.75	0.69	0.01	0.48	0.03	0.27	0.46

Intersection Summary

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

Lane Group	EBT	WBL	WBT	NBL
Lane Group Flow (vph)	770	16	735	38
v/c Ratio	0.72	0.08	0.68	0.07
Control Delay	9.4	5.8	15.2	12.8
Queue Delay	0.0	0.0	0.3	0.0
Total Delay	9.4	5.8	15.4	12.8
Queue Length 50th (ft)	92	4	254	3
Queue Length 95th (ft)	91	m3	192	25
Internal Link Dist (ft)	1338		395	279
Turn Bay Length (ft)				
Base Capacity (vph)	1320	261	1325	570
Starvation Cap Reductn	0	0	163	0
Spillback Cap Reductn	0	0	0	0
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	0.58	0.06	0.63	0.07

Intersection Summary

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

Lane Group	EBT	WBL	WBT	NBT
Lane Group Flow (vph)	791	26	769	41
v/c Ratio	0.74	0.10	0.71	0.11
Control Delay	20.6	4.3	11.3	16.5
Queue Delay	0.2	0.0	0.1	0.0
Total Delay	20.8	4.3	11.3	16.5
Queue Length 50th (ft)	329	3	176	6
Queue Length 95th (ft)	330	m6	217	21
Internal Link Dist (ft)	391		406	219
Turn Bay Length (ft)				
Base Capacity (vph)	1197	282	1201	390
Starvation Cap Reductn	48	0	25	0
Spillback Cap Reductn	0	0	0	0
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	0.69	0.09	0.65	0.11

Intersection Summary

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

Lane Group	EBT	WBT
Lane Group Flow (vph)	732	576
v/c Ratio	0.21	0.16
Control Delay	0.1	0.1
Queue Delay	0.0	0.0
Total Delay	0.1	0.1
Queue Length 50th (ft)	0	0
Queue Length 95th (ft)	0	0
Internal Link Dist (ft)	412	391
Turn Bay Length (ft)		
Base Capacity (vph)	3539	3539
Starvation Cap Reductn	0	0
Spillback Cap Reductn	0	0
Storage Cap Reductn	0	0
Reduced v/c Ratio	0.21	0.16

Intersection Summary

Network Totals

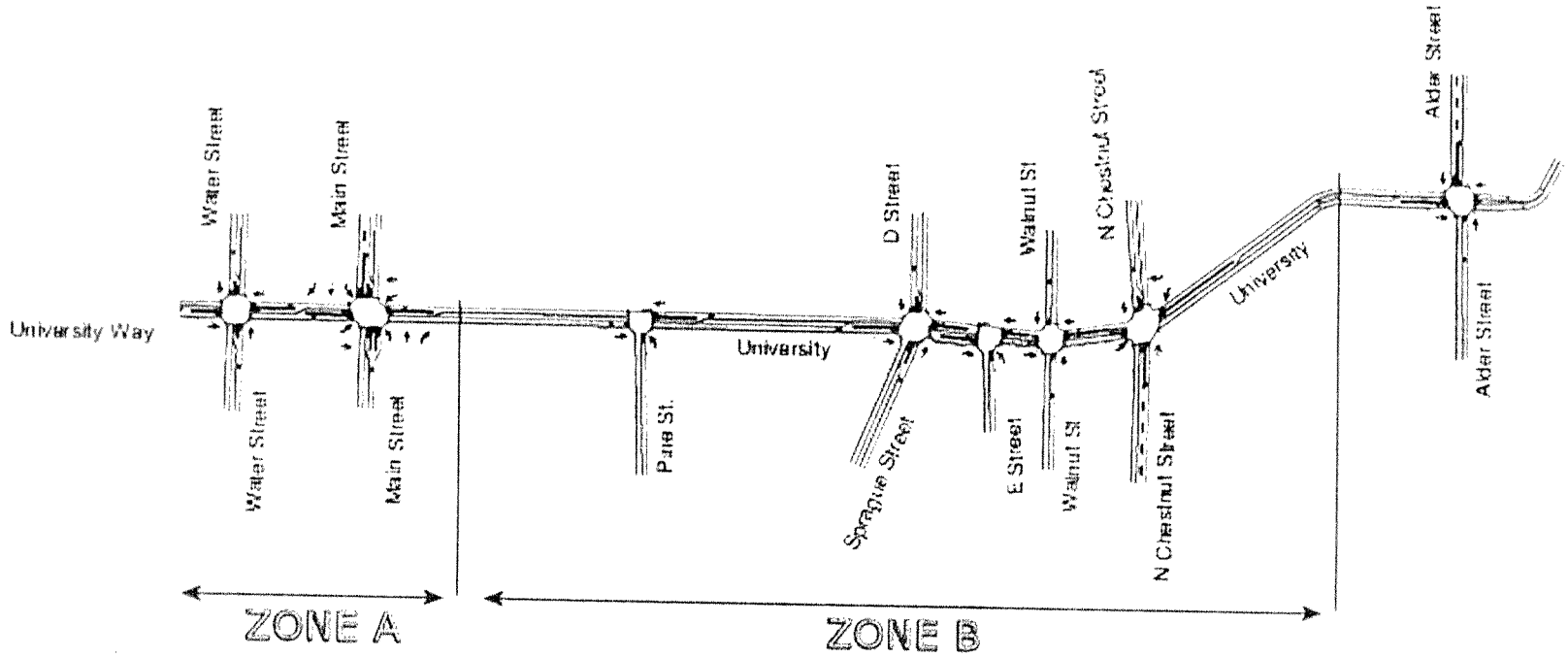
Number of Intersections	8
Control Delay / Veh (s/v)	17
Queue Delay / Veh (s/v)	2
Total Delay / Veh (s/v)	18
Total Delay (hr)	69
Stops / Veh	0.58
Stops (#)	7857
Average Speed (mph)	14
Total Travel Time (hr)	133
Distance Traveled (mi)	1918
Fuel Consumed (gal)	173
Fuel Economy (mpg)	11.1
Unserved Vehicles (#)	0
Vehicles in dilemma zone (#)	0
Performance Index	91.1

Network Totals

Number of Intersections	8
Control Delay / Veh (s/v)	16
Queue Delay / Veh (s/v)	0
Total Delay / Veh (s/v)	16
Total Delay (hr)	59
Stops (#)	7666
Average Speed (mph)	16
Total Travel Time (hr)	123
Distance Traveled (mi)	1918
Fuel Consumed (gal)	164
Fuel Economy (mpg)	11.7
Unserved Vehicles (#)	43
Vehicles in dilemma zone (#)	0
Performance Index	79.9

University Way Corridor

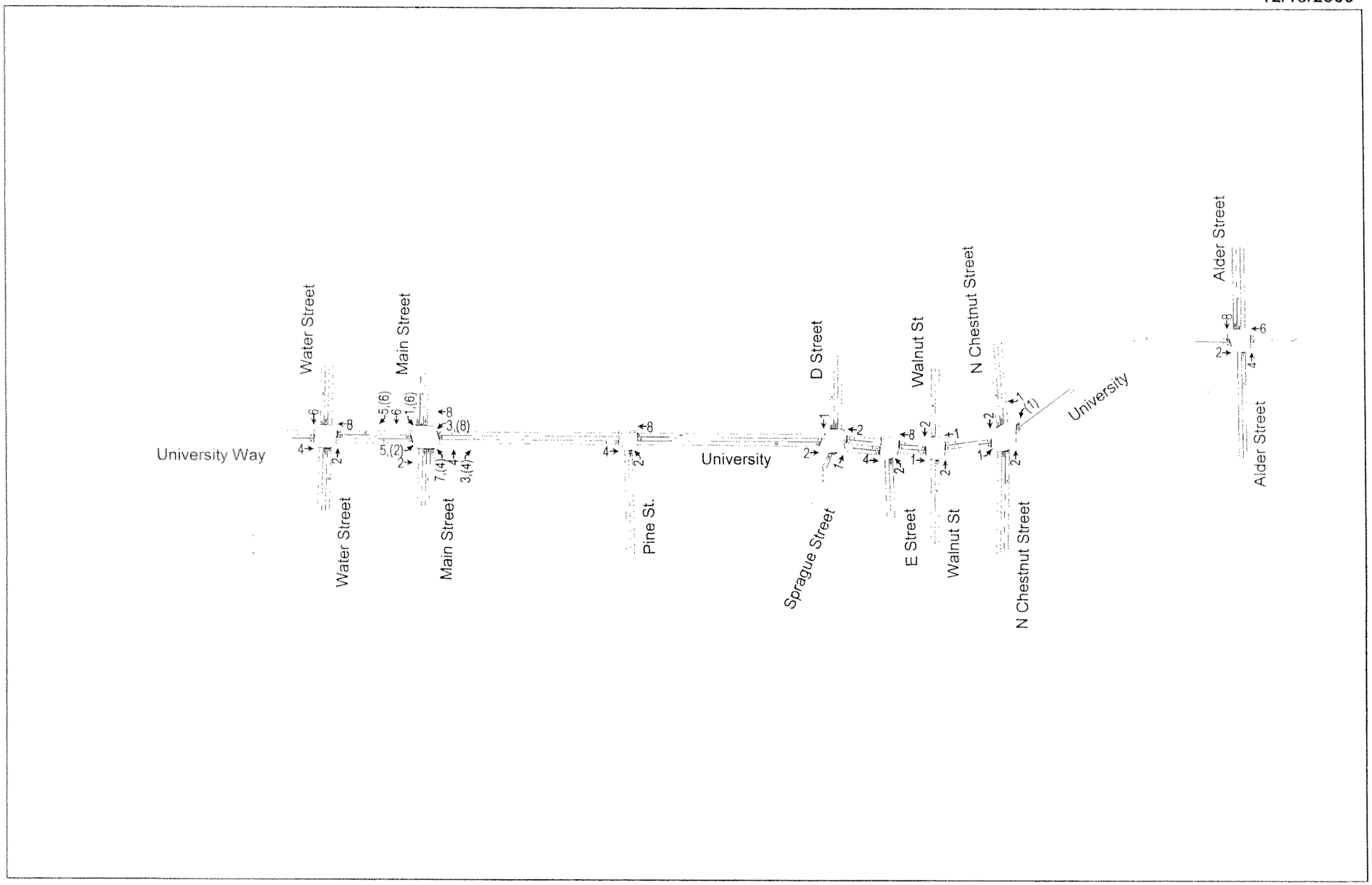
Proposed Optimized 3-Lane Configuration
12/18/2009



C Norris

University Way Corridor

Proposed Optimized 3-Lane Configuration
12/18/2009



C Norris

• SPEED AND DELAY RESULTS

	CONTROL POINTS	
	LOCATION	TIME
1	Brick Road	00:00.0
2	Alder	00:24.2
3	Chestut	01:11.9
4	Walnut	01:42.0
5	E St	01:56.4
6	D St	02:11.0
7	Pine	02:26.0
8	Main	02:49.2
9	Water	03:04.6
10	Wenas	03:40.4
11		
12		
13		

	STOPS OR SLOWS		
	LOCATION	SECS	CAUSE
1			
2	Alder	00:22.2	Signal
3	Chest	00:05.2	Bus
4			
5	D St	00:14.5	LT
6			
7			
8	Water	00:17.2	LT
9			
10			
11			
12			
13			

Trip Length (mi.)= 1.30

Trip Time (mm:ss.0)= 03:40.4

Travel Speed (MPH)= 21

Running Time = 02:41.3

Stopped Time = 00:59.1

Running Speed = 29

Symbols of Delay Cause: S = Traffic Signal; LT = Left Turns:T = General;PED = Pedestrian:B = Bus

Date: 11/22/09 **Weather** **Trip # 4**

Route **Direction: WB**

Trip Started AT **Brick Road** **AT** **108.9**
(Location/Mileage)

Trip Ended AT **D St** **AT** **110.2**
(Location/Mileage)

Comments:

00:00.0

RECORDER

UB

	CONTROL POINTS	
	LOCATION	TIME
1	Brick Road	00:00.0
2	Alder	00:14.3
3	Chestut	00:59.1
4	Walnut	01:29.2
5	E St	01:43.9
6	D St	02:09.1
7	Pine	02:27.1
8	Main	02:42.0
9	Water	03:06.1
10	Wenas	03:38.8
11		
12		
13		

	STOPS OR SLOWS		
	LOCATION	SECS	CAUSE
1			
2			
3			
4	Walnut	00:17.4	Signal
5			
6	D St	00:09.7	Signal
7			
8			
9	Water	00:07.9	Signal
10			
11			
12			
13			

Symbols of Delay Cause: S = Traffic Signal; LT = Left Turns:T = General;PED = Pedestrian:B = Bus

Trip Length (mi.)= 1.30

Trip Time (mm:ss.0)= 03:38.8

Travel Speed (MPH)= 21

Running Time = 03:03.8

Stopped Time = 00:35.0

Running Speed = 25

Comments:

00:00.0

RECORDER

Date: 11/22/09 **Weather: OVC** **Trip # 1**

Route **Direction:**

Trip Started AT Brick **AT 98.4 mi**
(Location/Mileage)

Trip Ended AT Wenas **AT 99.7 mi**
(Location/Mileage)

WB

	CONTROL POINTS	
	LOCATION	TIME
1	Brick Road	00:00.0
2	Alder	00:14.4
3	Chestut	00:58.0
4	Walnut	01:25.3
5	E St	01:43.9
6	D St	02:09.0
7	Pine	02:28.4
8	Main	02:51.5
9	Water	03:16.9
10	Wenas	03:52.6
11		
12		
13		

	STOPS OR SLOWS		
	LOCATION	SECS	CAUSE
1			
2			
3			
4	Walnut	00:25.0	Signal
5	D St	00:14.1	Signal
6			
7			
8			
9	Water	00:03.2	Signal
10			
11			
12			
13			

Symbols of Delay Cause: S = Traffic Signal; LT = Left Turns:T = General;PED = Pedestrian:B = Bus

Trip Length (mi.)= 1.30

Trip Time (mm:ss.0)= 03:52.6

Travel Speed (MPH)= 20

Running Time = 03:10.3

Stopped Time = 00:42.3

Running Speed = 24

Comments:

00:00.0

RECORDER

Date: 11/22/09 **Weather** **Trip # 2**

Route **Direction: WB**

Trip Started AT **Brick Road** **AT** **102.00**
(Location/Mileage)

Trip Ended AT **D St** **AT** **103.30**
(Location/Mileage)

WB

	CONTROL POINTS	
	LOCATION	TIME
1	Brick Road	00:00.0
2	Alder	00:14.2
3	Chestut	00:59.5
4	Walnut	01:15.9
5	E St	01:30.4
6	D St	02:11.3
7	Pine	03:00.0
8	Main	03:36.3
9	Water	04:11.4
10	Wenas	04:36.1
11		
12		
13		

	STOPS OR SLOWS		
	LOCATION	SECS	CAUSE
1			
2			
3			
4			
5			
6	D St	00:13.1	Left Turn
7			
8	Main	00:31.9	Signal
9	Water	00:31.0	Signal
10			
11			
12			
13			

Symbols of Delay Cause: S = Traffic Signal; LT = Left Turns:T = General;PED = Pedestrian:B = Bus

Trip Length (mi.)= 1.30

Trip Time (mm:ss.0)= 04:36.1

Travel Speed (MPH)= 16

Running Time = 03:20.1

Stopped Time = 01:16.0

Running Speed = 23

Comments:

00:00.0

RECORDER

Date: 11/22/09 **Weather** **Trip # 3**

Route **Direction: WB**

Trip Started AT **Brick Road** **AT** **105.50**
(Location/Mileage)

Trip Ended AT **D St** **AT** **106.80**
(Location/Mileage)

WB

	CONTROL POINTS	
	LOCATION	TIME
1	Brick Road	00:00.0
2	Alder	00:24.2
3	Chestut	01:11.9
4	Walnut	01:42.0
5	E St	01:56.4
6	D St	02:11.0
7	Pine	02:26.0
8	Main	02:49.2
9	Water	03:04.6
10	Wenas	03:40.4
11		
12		
13		

	STOPS OR SLOWS		
	LOCATION	SECS	CAUSE
1			
2	Alder	00:22.2	Signal
3	Chest	00:05.2	Bus
4			
5	D St	00:14.5	LT
6			
7			
8	Water	00:17.2	LT
9			
10			
11			
12			
13			

Symbols of Delay Cause: S = Traffic Signal; LT = Left Turns;T = General;PED = Pedestrian;B = Bus

Trip Length (mi.)= 1.30

Trip Time (mm:ss.0)= 03:40.4

Travel Speed (MPH)= 21

Running Time = 02:41.3

Stopped Time = 00:59.1

Running Speed = 29

Comments:

00:00.0

RECORDER

Date: 11/22/09 **Weather** **Trip # 4**

Route **Direction: WB**

Trip Started AT **Brick Road** **AT** 108.9
(Location/Mileage)

Trip Ended AT **D St** **AT** 110.2
(Location/Mileage)

WB

	CONTROL POINTS	
	LOCATION	TIME
1	Brick Road	00:00.0
2	Alder	00:14.1
3	Chestut	00:58.1
4	Walnut	01:12.0
5	E St	01:26.6
6	D St	01:42.2
7	Pine	02:02.2
8	Main	02:54.0
9	Water	03:08.1
10	Wenas	03:41.2
11		
12		
13		

	STOPS OR SLOWS		
	LOCATION	SECS	CAUSE
1			
2			
3			
4			
5			
6			
7			
8	Main	00:38.1	Signal
9			
10			
11			
12			
13			

Symbols of Delay Cause: S = Traffic Signal; LT = Left Turns:T = General;PED = Pedestrian:B = Bus

Trip Length (mi.)= 1.30

Trip Time (mm:ss.0)= 03:41.2

Travel Speed (MPH)= 21

Running Time = 03:03.1

Stopped Time = 00:38.1

Running Speed = 25

Comments:

00:00.0

RECORDER

Date: 11/22/09 **Weather** **Trip # 5**

Route **Direction: WB**

Trip Started AT **Brick Road** **AT** **111.90**
(Location/Mileage)

Trip Ended AT **D St** **AT** **113.20**
(Location/Mileage)

WL

	CONTROL POINTS	
	LOCATION	TIME
1	Brick Road	00:00.0
2	Alder	00:15.6
3	Chestut	01:28.8
4	Walnut	01:44.4
5	E St	01:58.9
6	D St	02:13.9
7	Pine	02:32.3
8	Main	02:55.5
9	Water	03:05.4
10	Wenas	03:39.5
11		
12		
13		

	STOPS OR SLOWS		
	LOCATION	SECS	CAUSE
1			
2	Alder	00:06.8	Signal
3	Chestnut	00:44.6	LT + Signal
4			
5			
6			
7			
8			
9			
10			
11			
12			
13			

Symbols of Delay Cause: S = Traffic Signal; LT = Left Turns:T = General;PED = Pedestrian:B = Bus

Trip Length (mi.)= 1.30

Trip Time (mm:ss.0)= 03:39.5

Travel Speed (MPH)= 21

Running Time = 02:48.1

Stopped Time = 00:51.4

Running Speed = 27

Comments:

00:00.0

RECORDER

Date: 11/22/09 **Weather** **Trip # 6**

Route **Direction: WB**

Trip Started AT **Brick Road** **AT** **117.3**
(Location/Mileage)

Trip Ended AT **D St** **AT** **118.6**
(Location/Mileage)

2 B

	CONTROL POINTS	
	LOCATION	TIME
1	Wenas	00:00.0
2	Water	00:33.7
3	Main	01:18.2
4	Pine	01:39.1
5	D St	02:08.5
6	E St	02:28.1
7	Walnut	02:35.5
8	Chestnut	02:48.5
9	Alder	03:33.0
10	Brick Rd	03:49.0
11		
12		
13		

	STOPS OR SLOWS		
	LOCATION	SECS	CAUSE
1			
2			
3	Main	00:33.6	Signal
4			
5	D St	00:14.8	LT
6			
7			
8	Alder	00:13.4	Signal
9			
10			
11			
12			
13			

Symbols of Delay Cause: S = Traffic Signal; LT = Left Turns:T = General;PED = Pedestrian:B = Bus

Trip Length (mi.)= 1.30

Trip Time (mm:ss.0)= 03:49.0

Travel Speed (MPH)= 20

Running Time = 02:47.2

Stopped Time = 01:01.8

Running Speed = 27

Comments:

00:00.0

RECORDER

Date: 11/22/09 **Weather** **Trip # 1**

Route **Direction: EB**

Trip Started AT **Wenas** **AT** **100.3**

Trip Ended AT **E St** **AT** **101.7**

(Location/Mileage)

EB

	CONTROL POINTS	
	LOCATION	TIME
1	Wenas	00:00.0
2	Water	00:34.1
3	Main	01:17.5
4	Pine	01:48.8
5	D St	02:39.2
6	E St	02:56.1
7	Walnut	03:16.6
8	Chestnut	03:34.6
9	Alder	04:18.6
10	Brick Rd	04:32.0
11		
12		
13		

	STOPS OR SLOWS		
	LOCATION	SECS	CAUSE
1			
2			
3	Main	00:43.6	Signal
4	Pine	00:17.9	Signal
5	D St	00:34.9	Signal
6	Walnut	00:17.9	Signal
7			
8			
9			
10			
11			
12			
13			

Symbols of Delay Cause: S = Traffic Signal; LT = Left Turns:T = General;PED = Pedestrian:B = Bus

Trip Length (mi.)= 1.30

Trip Time (mm:ss.0)= 04:32.0

Travel Speed (MPH)= 17

Running Time = 02:37.7

Stopped Time = 01:54.3

Running Speed = 29

Comments:

00:00.0

RECORDER

Date: 11/22/09 **Weather** **Trip # 2**

Route **Direction: EB**

Trip Started AT **Wenas** **AT** 103.8

Trip Ended AT **E St** **AT** 105.1

(Location/Mileage)

EB

	CONTROL POINTS	
	LOCATION	TIME
1	Wenas	00:00.0
2	Water	00:40.2
3	Main	00:51.0
4	Pine	01:12.6
5	D St	01:32.7
6	E St	01:47.5
7	Walnut	02:01.5
8	Chestnut	02:15.8
9	Alder	03:00.4
10	Brick Rd	03:14.1
11		
12		
13		

	STOPS OR SLOWS		
	LOCATION	SECS	CAUSE
1			
2	Water	00:11.2	Signal
3			
4			
5			
6			
7			
8			
9			
10			
11			
12			
13			

Symbols of Delay Cause: S = Traffic Signal; LT = Left Turns:T = General;PED = Pedestrian:B = Bus

Trip Length (mi.)= 1.30

Trip Time (mm:ss.0)= 03:14.1

Travel Speed (MPH)= 24

Running Time = 03:02.9

Stopped Time = 00:11.2

Running Speed = 25

Comments:

00:00.0

RECORDER

Date: 11/22/09 **Weather** **Trip # 3**

Route **Direction: EB**

Trip Started AT **Wenas** **AT** **107**

Trip Ended AT **E St** **AT** **108.3**
(Location/Mileage)

	CONTROL POINTS	
	LOCATION	TIME
1	Wenas	00:00.0
2	Water	01:14.4
3	Main	02:15.0
4	Pine	02:37.3
5	D St	03:02.5
6	E St	03:37.2
7	Walnut	03:50.8
8	Chestnut	04:15.0
9	Alder	05:01.4
10	Brick Rd	05:14.2
11		
12		
13		

	STOPS OR SLOWS		
	LOCATION	SECS	CAUSE
1			
2	Water	00:43.7	Signal+ LT
3	Main	00:57.2	Signal
4			
5	D St	00:10.3	LT
6	E St	00:15.8	Signal
7	Chestnut	00:17.0	Signal
8			
9			
10			
11			
12			
13			

Symbols of Delay Cause: S = Traffic Signal; LT = Left Turns:T = General;PED = Pedestrian:B = Bus

Trip Length (mi.)= 1.30

Trip Time (mm:ss.0)= 05:14.2

Travel Speed (MPH)= 14

Running Time = 02:50.2

Stopped Time = 02:24.0

Running Speed = 27

Comments:

00:00.0

RECORDER

Date: 11/22/09 **Weather** **Trip # 4**

Route **Direction: EB**

Trip Started AT **Wenas** **AT** 110.3

Trip Ended AT **E St** **AT** 111.7

(Location/Mileage)

	CONTROL POINTS	
	LOCATION	TIME
1	Wenas	00:00.0
2	Water	00:35.0
3	Main	00:45.0
4	Pine	01:07.4
5	D St	01:26.7
6	E St	01:41.8
7	Walnut	01:55.2
8	Chestnut	02:36.2
9	Alder	03:19.8
10	Brick Rd	03:31.8
11		
12		
13		

	STOPS OR SLOWS		
	LOCATION	SECS	CAUSE
1			
2			
3			
4			
5			
6			
7			
8	Chestnut	00:33.9	Signal
9			
10			
11			
12			
13			

Symbols of Delay Cause: S = Traffic Signal; LT = Left Turns;T = General;PED = Pedestrian;B = Bus

Trip Length (mi.)= 1.30

Trip Time (mm:ss.0)= 03:31.8

Travel Speed (MPH)= 22

Running Time = 02:57.9

Stopped Time = 00:33.9

Running Speed = 26

Comments:

00:00.0

RECORDER

Date: 11/22/09 **Weather** **Trip # 5**

Route **Direction: EB**

Trip Started AT **Wenas** **AT** **115.8**

Trip Ended AT **E St** **AT** **117.1**

(Location/Mileage)

EL

	CONTROL POINTS	
	LOCATION	TIME
1	Wenas	00:00.0
2	Water	00:45.7
3	Main	00:55.9
4	Pine	01:18.3
5	D St	01:40.4
6	E St	01:55.5
7	Walnut	02:09.3
8	Chestnut	02:48.9
9	Alder	03:32.3
10	Brick Rd	03:45.2
11		
12		
13		

	STOPS OR SLOWS		
	LOCATION	SECS	CAUSE
1			
2	Water	00:16.7	Signal
3			
4			
5	D St	00:06.5	LT
6			
7	Chestnut	00:33.5	Signal
8			
9			
10			
11			
12			
13			

Symbols of Delay Cause: S = Traffic Signal; LT = Left Turns:T = General;PED = Pedestrian:B = Bus

Trip Length (mi.)= 1.30

Trip Time (mm:ss.0)= 03:45.2

Travel Speed (MPH)= 20

Running Time = 02:48.5

Stopped Time = 00:56.7

Running Speed = 27

Comments:

00:00.0

RECORDER

Date: 11/22/09 **Weather** **Trip # 6**

Route **Direction: EB**

Trip Started AT **Wenas** **AT** 118.8

Trip Ended AT **E St** **AT** 120

(Location/Mileage)

Travel Speed	Running Speed
21	16
22	19
14	11
21	16
14	12
17	17
19	13
11	8
28	28

#8

City of Ellensburg
University Way

Travel Time and Delay Study

	CONTROL POINTS	
	LOCATION	TIME
1	Wenas	0
2	Water	114.43
3	Main	214.98
4	Pine	237.27
5	D Street (E ST : 337.24)	302.52
6	Walnut	350.77
7	Chestnut	415.02
8	Alder	501.4
9	Brick Road	514.24
10		
11		
12		
13		

	STOPS OR SLOWS		
	LOCATION	SECS	CAUSE
1			
2	WATER	43.74	SIGNAL + LT
3	MAIN	57.16	SIGNAL
4			
5	D ST	10.31	LT
6	E ST	75.83	SIGNAL
7	CHESTNUT	17.00	" "
8			
9			
10			
11			
12			
13			

Symbols of Delay Cause: S = Traffic Signal; LT = Left Turns:T = General;PED = Pedestrian:B = Bus

Trip Length =

Trip Time =

Travel Speed =

Running Time =

Stopped Time =

Running Speed =

Comments:

RECORDER

Date: Weather Trip #

Route Direction: EB

Trip Started AT WENAS AT 110.3 (Location/Mileage)

Trip Ended AT BRICK AT 111.7 (Location/Mileage)

#10

City of Ellensburg
University Way

SPEEDS

Travel Time and Delay Study

	CONTROL POINTS	
	LOCATION	TIME
1	Wenas	0
2	Water	34.99
3	Main	44.9
4	Pine	107.4
5	D Street (E ST: 141.8)	126.69
6	Walnut	155.2
7	Chestnut	236.2
8	Alder	319.8
9	Brick Road	331.77
10		
11		
12		
13		

25MPH

	STOPS OR SLOWS		
	LOCATION	SECS	CAUSE
1			
2			
3			
4			
5			
6			
7	CHESTNUT	33.9	SIGNAL
8			
9			
10			
11			
12			
13			

Symbols of Delay Cause: S = Traffic Signal; LT = Left Turns;T = General;PED = Pedestrian;B = Bus

Trip Length =

Trip Time =

Travel Speed = 20MPH

Running Time =

Stopped Time =

Running Speed =

Comments:

RECORDER

Date: 11/23/09 Weather PT OVERCAST/DARK Trip #

Route Direction: EB

Trip Started AT AT 115.8 (Location/Mileage)

Trip Ended AT AT 117.1 (Location/Mileage)

DN Traffic Consultants

#12 NEED TO ADD STOP!

City of Ellensburg
University Way

Travel Time and Delay Study

	CONTROL POINTS	
	LOCATION	TIME
1	Wenas	0
2	Water	45.7
3	Main	55.88
4	Pine	118.33
5	D Street (E ST: 155.52)	140.42
6	Walnut	209.27
7	Chestnut	248.88
8	Alder	332.3
9	Brick Road	345.17
10		
11		
12		
13		

	STOPS OR SLOWS		
	LOCATION	SECS	CAUSE
1			
2	WATER	16.7	SIGNAL
3			
4			
5	D ST	6.5	LT
6			
7	CHESTNUT	33.5	SIGNAL
8			
9			
10			
11			
12			
13			

Symbols of Delay Cause: S = Traffic Signal; LT = Left Turns:T = General;PED = Pedestrian:B = Bus

Trip Length =

Trip Time =

Travel Speed = 20 mph ; 25 mph

Running Time =

Stopped Time =

Running Speed =

Comments:

RECORDER

Date: 11/23/09 Weather Trip #

Route Direction: EB

Trip Started AT AT 118.8
(Location/Mileage)

Trip Ended AT AT 120.0
(Location/Mileage)

DN Traffic Consultants

#4

City of Ellensburg
University Way

Travel Time and Delay Study

	CONTROL POINTS	
	LOCATION	TIME
1	Wenas	0
2	Water	34.98
3	Main	117.52
4	Pine	148.80
5	D Street (E ST : 256.1)	239.2
6	Walnut	316.6
7	Chestnut	334.6
8	Alder	418.6
9	Brick Road	432.0
10		
11		
12		
13		

	STOPS OR SLOWS		
	LOCATION	SECS	CAUSE
1			
2			
3	MAIN	43.59	SIGNAL
4	PINE	17.88	SIGNAL
5	D ST	34.94	SIGNAL
6	WALNUT	17.94	SIGNAL
7			
8			
9			
10			
11			
12			
13			

Trip Length =

Trip Time =

Travel Speed =

Running Time =

Stopped Time =

Running Speed =

Comments:

RECORDER

Symbols of Delay Cause: S = Traffic Signal; LT = Left Turns:T = General;PED = Pedestrian:B = Bus

Date: 11/23/09 Weather Trip #

Route Direction: EASTBOUND

Trip Started AT WENAS AT 103.8 (Location/Mileage)

Trip Ended AT BRICK AT 105.1 (Location/Mileage)

DN Traffic Consultants

6

City of Ellensburg
University Way

Travel Time and Delay Study

	CONTROL POINTS	
	LOCATION	TIME
1	Wenas	0
2	Water	40.2
3	Main	51.0
4	Pine	112.59
5	D Street (E ST: 147.49)	132.68
6	Walnut	201.48
7	Chestnut	215.8
8	Alder	300.4
9	Brick Road	314.12
10		
11		
12		
13		

	STOPS OR SLOWS		
	LOCATION	SECS	CAUSE
1			
2	WATER	11.19	SIGNAL
3			
4			
5			
6			
7			
8			
9			
10			
11			
12			
13			

Symbols of Delay Cause: S = Traffic Signal; LT = Left Turns:T = General;PED = Pedestrian:B = Bus

Trip Length =

Trip Time =

Travel Speed =

Running Time =

Stopped Time =

Running Speed =

Comments:

RECORDER

Date: 11/23/09 Weather Trip #

Route Direction: E ~~B~~

Trip Started AT AT 107.0
(Location/Mileage)

Trip Ended AT AT 108.3
(Location/Mileage)

DN Traffic Consultants

#11

City of Ellensburg
University Way

Travel Time and Delay Study

	CONTROL POINTS	
	LOCATION	TIME
1	Brick Road	0
2	Alder	15.6
3	Chestnut	128.8
4	Walnut (E ST: 158.9	144.4
5	D Street	213.9
6	Pine	232.33
7	Main	255.52
8	Water	305.37
9	Wenas	339.49
10		
11		
12		
13		

	STOPS OR SLOWS		
	LOCATION	SECS	CAUSE
1			
2	ALDER	6.8	SIGNAL
3	CHESTNUT	44.6	LT + SIGNAL
4			
5			
6			
7			
8			
9			
10			
11			
12			
13			

Trip Length =

Trip Time =

Travel Speed =

Running Time =

Stopped Time =

Running Speed =

Comments:

RECORDER

Symbols of Delay Cause: S = Traffic Signal; LT = Left Turns:T = General;PED = Pedestrian:B = Bus

Date: Weather Trip #

Route Direction:

Trip Started AT AT 117.2
(Location/Mileage)

Trip Ended AT AT 118.6
(Location/Mileage)

DN Traffic Consultants

#9

City of Ellensburg
University Way

Travel Time and Delay Study

	CONTROL POINTS	
	LOCATION	TIME
1	Brick Road	0
2	Alder	14.09
3	Chestnut	58.08
4	Walnut (E ST: 126.58)	112.02
5	D Street	142.2
6	Pine	202.2
7	Main	254
8	Water	
9	Wenas	
10		
11		
12		
13		

+12.12
+45.1

	STOPS OR SLOWS		
	LOCATION	SECS	CAUSE
1			
2			
3			
4			
5			
6			
7	MAIN ST	38.12	SIGNAL
8			
9			
10			
11			
12			
13			

Symbols of Delay Cause: S = Traffic Signal; LT = Left Turns:T = General;PED = Pedestrian:B = Bus

Trip Length =

Trip Time =

Travel Speed =

Running Time =

Stopped Time =

Running Speed =

Date: 11/23/09 Weather Trip #

Route Direction: WB

Trip Started AT BRICK AT 111.9
(Location/Mileage)

Trip Ended AT WENAS AT
(Location/Mileage)

Comments:

RECORDER

DN Traffic Consultants

#7

City of Ellensburg
University Way

Travel Time and Delay Study

	CONTROL POINTS	
	LOCATION	TIME
1	Brick Road	0
2	Alder	24.24
3	Chestnut	111.90
4	Walnut LE ST:	141.98
5	D Street	
6	Pine	226.02
7	Main	249.24
8	Water	304.59
9	Wenas	340.43
10		
11		
12		
13		

	STOPS OR SLOWS		
	LOCATION	SECS	CAUSE
1			
2	ALDER	22.19	SIGNAL
3	CHEST	5.81	CAR
4			
5	D ST	14.5	CAR
6			
7			
8	WATER	17.19	LT
9			
10			
11			
12			
13			

Symbols of Delay Cause: S = Traffic Signal; LT = Left Turns:T = General;PED = Pedestrian:B = Bus

Trip Length =

Trip Time =

Travel Speed =

Running Time =

Stopped Time =

Running Speed =

Comments:

RECORDER

Date: 11/23/09 Weather DARK Trip #

Route Direction:

Trip Started AT AT 108.9
(Location/Mileage)

Trip Ended AT AT 110.2
(Location/Mileage)

DN Traffic Consultants

#5

City of Ellensburg
University Way

Travel Time and Delay Study

	CONTROL POINTS	
	LOCATION	TIME
1	Brick Road	0
2	Alder	14.2
3	Chestnut	59.5
4	Walnut (E ST : 130.4)	115.8
5	D Street	151.9
6	Pine	211.34
7	Main	300.0
8	Water	336.34
9	Wenas	411.4
10		
11		
12		
13		

	STOPS OR SLOWS		
	LOCATION	SECS	CAUSE
1			
2			
3			
4			
5	D ST	13.03	LT
6			
7	MAIN	31.94	SIGNAL
8	WATER	31.00	SIGNAL
9			
10			
11			
12			
13			

Trip Length =

Trip Time =

Travel Speed =

Running Time =

Stopped Time =

Running Speed =

Comments:

RECORDER

Symbols of Delay Cause: S = Traffic Signal; LT = Left Turns:T = General;PED = Pedestrian:B = Bus

Date: 11/23/09 Weather Trip #

Route Direction: WB

Trip Started AT BRICK AT 105.5
(Location/Mileage)

Trip Ended AT AT 106.8
(Location/Mileage)

DN Traffic Consultants

#3

City of Ellensburg
University Way

Travel Time and Delay Study

	CONTROL POINTS	
	LOCATION	TIME
1	Brick Road	0
2	Alder	14.42
3	Chestnut	57.99
4	Walnut (E ST: 143.88)	
5	D Street	
6	Pine — 229.39	(209.04)
7	Main	251.49
8	Water	316.89
9	Wenas	352.58
10		
11		
12		
13		

	STOPS OR SLOWS		
	LOCATION	SECS	CAUSE
1			
2			
3			
4	WALNUT	24.97	SIGNAL
5	D1	14.	SIGNAL
6			
7			
8	WATER	3.22	
9			
10			
11			
12			
13			

Symbols of Delay Cause: S = Traffic Signal; LT = Left Turns:T = General;PED = Pedestrian:B = Bus

Trip Length =

Trip Time =

Travel Speed =

Running Time =

Stopped Time =

Running Speed =

Comments:

RECORDER

Date: Weather Trip #

Route Direction: WEST B

Trip Started AT AT 102.0
(Location/Mileage)

Trip Ended AT AT 103.3
(Location/Mileage)

DN Traffic Consultants

#1

City of Ellensburg
University Way

Travel Time and Delay Study

	CONTROL POINTS	
	LOCATION	TIME
1	Brick Road	0:00
2	Alder	
3	Chestnut	59.11
4	Walnut (E ST) 143.88	129.19
5	D Street	209.10
6	Pine	227.08
7	Main	241.99
8	Water	306.09
9	Wenas	338.83
10		
11		
12		
13		

	STOPS OR SLOWS		
	LOCATION	SECS	CAUSE
1			
2			
3	WALNUT	17.41	SIGNAL
4			
5	D ST	9.72	SIGNAL
6			
7			
8	WATER	7.91	SIGNAL
9			
10			
11			
12			
13			

Symbols of Delay Cause: S = Traffic Signal; LT = Left Turns;T = General;PED = Pedestrian;B = Bus

Trip Length =

Trip Time =

Travel Speed =

Running Time =

Stopped Time =

Running Speed =

Comments:

RECORDER

Date: 11/23/09 Weather Trip #

Route Direction: WEST BOUND

Trip Started AT BRICK AT 144615 (98.4)
(Location/Mileage)

Trip Ended AT WENAS AT 99.8
(Location/Mileage)

DN Traffic Consultants

#2

City of Ellensburg
University Way

Travel Time and Delay Study

	CONTROL POINTS	
	LOCATION	TIME
1	Wenas	0:00
2	Water	33.74
3	Main	118.24
4	Pine	139.12
5	D Street (E ST ~~235.52~~ (228.08)	208.48
6	Walnut	
7	Chestnut	248.48
8	Alder	333.00
9	Brick Road	348.98
10		
11		
12		
13		

	STOPS OR SLOWS		
	LOCATION	SECS	CAUSE
1			
2			
3	MAIN	33.63	SIGNAL
4			
5	D ST	14.78	LT
6			
7			
8	ALDER	13.37	SIGNAL
9			
10			
11			
12			
13			

Symbols of Delay Cause: S = Traffic Signal; LT = Left Turns:T = General;PED = Pedestrian:B = Bus

Trip Length =

Trip Time =

Travel Speed =

Running Time =

Stopped Time =

Running Speed =

Comments:

RECORDER

Date: 11/23/09 Weather COLD & OVERCAST Trip # 1

Route Direction: EAST BOUND

Trip Started AT WENAS AT 100.3 (Location/Mileage)

Trip Ended AT BRICK AT 101.8 (101.7) (Location/Mileage)

25 MPH

DN Traffic Consultants

	CONTROL POINTS	
	LOCATION	TIME
1	Brick Road	00:00.0
2	Alder	00:14.3
3	Chestut	00:59.1
4	Walnut	01:29.2
5	E St	01:43.9
6	D St	02:09.1
7	Pine	02:27.1
8	Main	02:42.0
9	Water	03:06.1
10	Wenas	03:38.8
11		
12		
13		

	STOPS OR SLOWS		
	LOCATION	SECS	CAUSE
1			
2			
3			
4	Walnut	00:17.4	Signal
5			
6	D St	00:09.7	Signal
7			
8			
9	Water	00:07.9	Signal
10			
11			
12			
13			

Symbols of Delay Cause: S = Traffic Signal; LT = Left Turns:T = General;PED = Pedestrian:B = Bus

Trip Length (mi.)= 1.30

Trip Time (mm:ss.0)= 03:38.8

Travel Speed (MPH)= 21

Running Time = 03:03.8

Stopped Time = 00:35.0

Running Speed = 25

Comments:

00:00.0

RECORDER

Date: 11/22/09 **Weather: OVC** **Trip # 1**

Route **Direction:**

Trip Started AT Brick **AT 98.4 mi**
(Location/Mileage)

Trip Ended AT Wenas **AT 99.7 mi**
(Location/Mileage)

	CONTROL POINTS	
	LOCATION	TIME
1	Brick Road	00:00.0
2	Alder	00:14.4
3	Chestut	00:58.0
4	Walnut	01:25.3
5	E St	01:43.9
6	D St	02:09.0
7	Pine	02:28.4
8	Main	02:51.5
9	Water	03:16.9
10	Wenas	03:52.6
11		
12		
13		

	STOPS OR SLOWS		
	LOCATION	SECS	CAUSE
1			
2			
3			
4	Walnut	00:25.0	Signal
5	D St	00:14.1	Signal
6			
7			
8			
9	Water	00:03.2	Signal
10			
11			
12			
13			

Symbols of Delay Cause: S = Traffic Signal; LT = Left Turns:T = General;PED = Pedestrian:B = Bus

Trip Length (mi.)= 1.30

Trip Time (mm:ss.0)= 03:52.6

Travel Speed (MPH)= 20

Running Time = 03:10.3

Stopped Time = 00:42.3

Running Speed = 24

Comments:

00:00.0

RECORDER

Date: 11/22/09 **Weather** **Trip # 2**

Route **Direction: WB**

Trip Started AT **Brick Road** **AT** 102.00
(Location/Mileage)

Trip Ended AT **D St** **AT** 103.30
(Location/Mileage)

	CONTROL POINTS	
	LOCATION	TIME
1	Brick Road	00:00.0
2	Alder	00:14.2
3	Chestut	00:59.5
4	Walnut	01:15.9
5	E St	01:30.4
6	D St	02:11.3
7	Pine	03:00.0
8	Main	03:36.3
9	Water	04:11.4
10	Wenas	04:36.1
11		
12		
13		

	STOPS OR SLOWS		
	LOCATION	SECS	CAUSE
1			
2			
3			
4			
5			
6	D St	00:13.1	Left Turn
7			
8	Main	00:31.9	Signal
9	Water	00:31.0	Signal
10			
11			
12			
13			

Symbols of Delay Cause: S = Traffic Signal; LT = Left Turns:T = General;PED = Pedestrian:B = Bus

Trip Length (mi.)= 1.30

Trip Time (mm:ss.0)= 04:36.1

Travel Speed (MPH)= 16

Running Time = 03:20.1

Stopped Time = 01:16.0

Running Speed = 23

Comments:

00:00.0

RECORDER

Date: 11/22/09 **Weather** **Trip # 3**

Route **Direction: WB**

Trip Started AT **Brick Road** **AT** **105.50**
(Location/Mileage)

Trip Ended AT **D St** **AT** **106.80**
(Location/Mileage)

	CONTROL POINTS	
	LOCATION	TIME
1	Brick Road	00:00.0
2	Alder	00:14.1
3	Chestut	00:58.1
4	Walnut	01:12.0
5	E St	01:26.6
6	D St	01:42.2
7	Pine	02:02.2
8	Main	02:54.0
9	Water	03:08.1
10	Wenas	03:41.2
11		
12		
13		

	STOPS OR SLOWS		
	LOCATION	SECS	CAUSE
1			
2			
3			
4			
5			
6			
7			
8	Main	00:38.1	Signal
9			
10			
11			
12			
13			

Symbols of Delay Cause: S = Traffic Signal; LT = Left Turns;T = General;PED = Pedestrian;B = Bus

Trip Length (mi.)= 1.30

Trip Time (mm:ss.0)= 03:41.2

Travel Speed (MPH)= 21

Running Time = 03:03.1

Stopped Time = 00:38.1

Running Speed = 25

Comments:

00:00.0

RECORDER

Date: 11/22/09 **Weather** **Trip # 5**

Route **Direction: WB**

Trip Started AT **Brick Road** **AT** **111.90**
(Location/Mileage)

Trip Ended AT **D St** **AT** **113.20**
(Location/Mileage)

	CONTROL POINTS	
	LOCATION	TIME
1	Brick Road	00;00.0
2	Alder	00:15.6
3	Chestut	01:28.8
4	Walnut	01:44.4
5	E St	01:58.9
6	D St	02:13.9
7	Pine	02:32.3
8	Main	02:55.5
9	Water	03:05.4
10	Wenas	03:39.5
11		
12		
13		

	STOPS OR SLOWS		
	LOCATION	SECS	CAUSE
1			
2	Alder	00:06.8	Signal
3	Chestnut	00:44.6	LT + Signal
4			
5			
6			
7			
8			
9			
10			
11			
12			
13			

Symbols of Delay Cause: S = Traffic Signal; LT = Left Turns:T = General;PED = Pedestrian:B = Bus

Trip Length (mi.)= 1.30

Trip Time (mm:ss.0)= 03:39.5

Travel Speed (MPH)= 21

Running Time = 02:48.1

Stopped Time = 00:51.4

Running Speed = 27

Comments:

00:00.0

RECORDER

Date: 11/22/09 **Weather** **Trip # 6**

Route **Direction: WB**

Trip Started AT **Brick Road** **AT** **117.3**
(Location/Mileage)

Trip Ended AT **D St** **AT** **118.6**
(Location/Mileage)

• COLLISION HISTORY

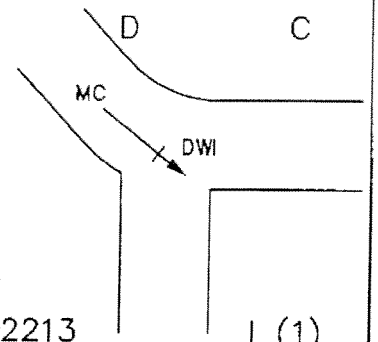
Table . University Way Three Year Collision Analysis

	YEAR																						
	2006							2007							2008								
Intersection	RA	RE	LT	SS	FO	B	P	RA	RE	LT	SS	FO	B	P	RA	RE	LT	SS	FO	B	P	Total	ACC Rate
Okanogan					1			1							1							3	
Columbia								1	1							1						3	
Water	7	1		1				5	1		1				2	1		1				20	0.94
Main	1		1							1	1			1		4		1				10	0.43
Pearl	1							1														2	
B Street	1																					1	
Pine Street			1																			1	
Ruby Street	1	1				1		2														5	
C Street									1													1	
D/Sprague	1		1					1	1		1	1		2	1	1	2					12	0.75
Walnut																1						1	0.06
Chestnut			2														1					3	0.13
Maple																		1				1	
Alder		1							2	1							1			1		6	0.32
TOTAL	12	3	5	1	1	1	0	11	6	2	3	1	0	3	4	8	4	3	0	1	0	69	

RA = 12 + 11 + 4 = 27 39%
RE = 3 + 6 + 8 17 25%
LT = 5 + 2 + 4 11 16%
SS = 1 + 3 + 3 7 10%
FO = 1 + 1 2 3
B = 1 + 1 2 3

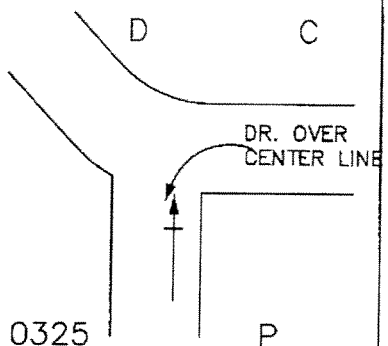
8 TH & WENAS/CASCADE WAY

5-26-92



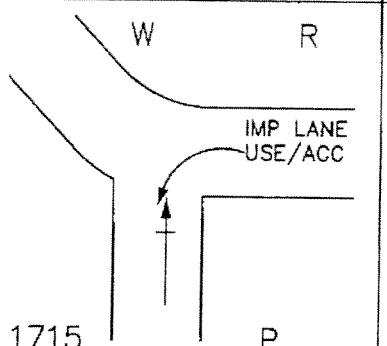
2213 / DKN — I (1) / $?

6-26-92



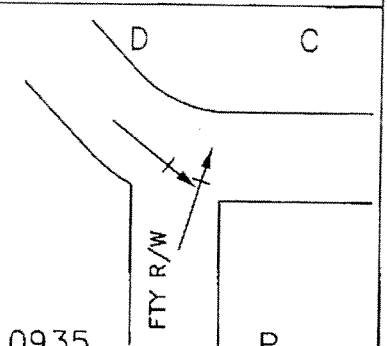
0325 / DKN — P / $3000

9-24-92



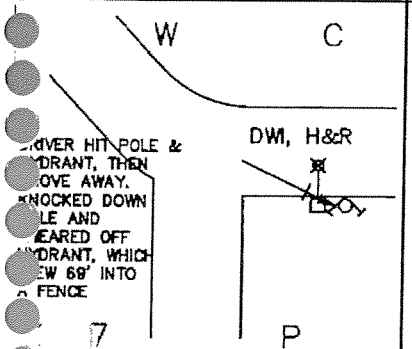
1715 / DL — P / $3000

9-25-93



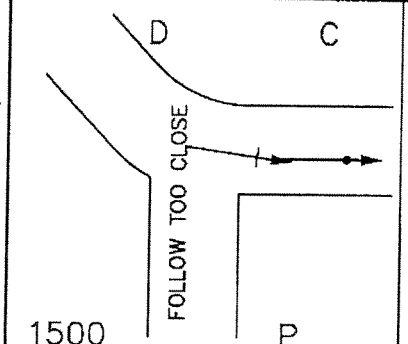
0935 / DL — P / $5000

10-27-94



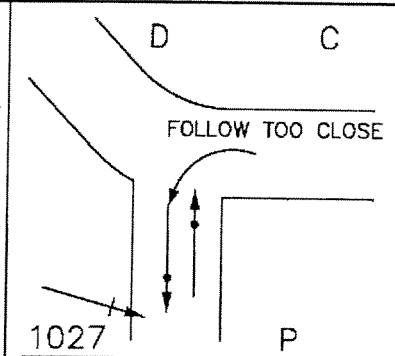
7 / DKN — P / $7000

4-25-97



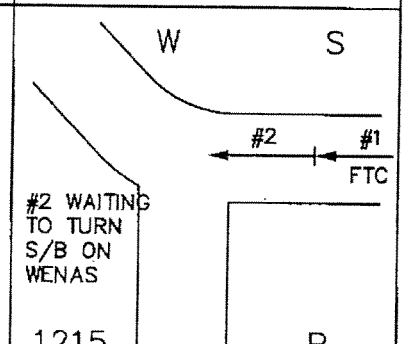
1500 / DL — P / –

4-22-98



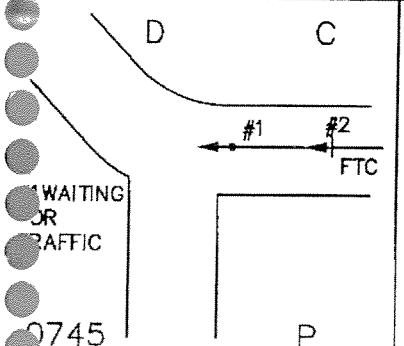
1027 / DL — P / –

2-14-00



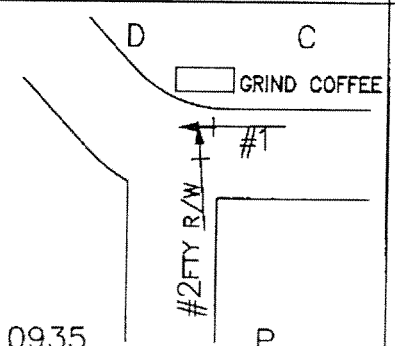
1215 / DL — P / –

04-08-02



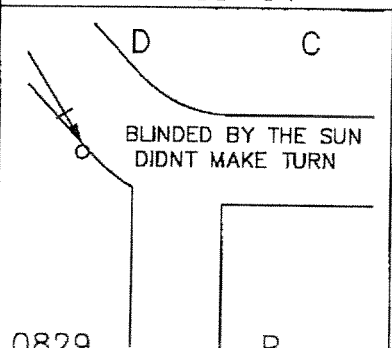
0745 / DL — P / –

06-10-02



0935 / DL — P / –

11-05-04



0829 / DL — P / –

8 TH & CLE ELUM

04-06-05

D

C

FTC

1236
DL

P
—

8 TH & OKANOGAN

12-11-94	10-6-95	11-15-96	9-13-97
S / S TOO FAST FOR COND	D / C FOLLOW TOO CLOSE	D / C FTY R/W, DWLS	D / OVC
2005 / DL — P / $600	1236 / DL — P / $2000	1915 / DKN — P / $4000	1625 / DL — P / —

11-30-00	02-08-01	08-17-05	11-25-06
S / OVC #1 #2 TRUCK SIGNALED RT. TURN-VEH. PULLED ALONGSIDE. TRAILER HIT VEH. #1.	S / OVC FTS SS #1 #2 #2 MOVED TO E/B LN TO AVOID #1	D / C H/R TRUCK AND TRAILER HIT SIGN	S / C P CAR HIT SIGN, SIGN HIT PED.
1713 / N — P / —	0915 / DL — P / —	1010 / DL — P / —	1010 / DL — P / —

01-05-07	05-02-08
D / C #1 FTY #2	D / OVC #1 #2
845 / DKN — P / —	1541 / DL — P / —

8 TH & NANUM

6-3-95	10-14-98		
D C	D C NOT PAYING ATTENTION		
2021 DL FTY SS NO INS P $300	0900 DL I(1) –		

UNIVERSITY & COLUMBIA

5-22-92	8-10-01	030207	7-30-07
D	D	D	D
C	C	C	C
	#1 #2 #3	#1 #2 #1 FTY	#2 #1
1715	1218 / DL	0755 / DL	1719 / DL
P / $1900	P / —	P / —	P / —

10-16-08
D
C
#1 #2
1432 / DL
P / —

UNIVERSITY & KITTITAS

10-26-91	9-05-00	08-31-01	10-16-03
D	D	D	D #2IMP. OVERTAKE ON RIGHT
C	C	C	OVC
1407 / DL	1524 / DL	1308 / DL	1302 / DL
P / $0	I (2) / —	P / —	P / —

H&R, DWI

FAIL TO OBEY TRAFFIC CONTROL

#1 MAKING SOUTHBOUND TURN #3 HIT #1AND PUSHED #1 TO HIT #2

#2 #1 #3=FTC

#1

03-05-04	08-08-05
W	D
R	C
1400	0753 / DL
P / —	P / —

#1 #2 #3 DUI

MOTORCYCLE FTC

#1 #2

UNIVERSITY & WATER PAGE 4

02-19-05	05-09-05	05-26-05	06-14-05
#1 COULD DIDN'T SEE SIGNAL HIT/SPUN #2			
D / C	W / R	D / C	D / C
#2 #1	#2 #1 #1 FT OBEY TRAFFIC SIGNAL	#1 #2 FT OBEY TRAFFIC SIGNAL	#1 #2 FT OBEY TRAFFIC SIGNAL
0932 / DL	P / —	2114 / DKN	P / —	1211 / DKN	P / —	2230 / DKN	P / —

06-24-05	08-27-05	11-18-05	12-16-05
D / C	D / C	D / C	D / F
#2 #1 FTC	#1 #2 FT OBEY TRAFFIC SIGNAL	#3 RAN RED LIGHT CAUSING #2 TO HIT BRAKES CAUSING #1 TO HIT #2 #2 #1	FTY R/W
1254 / —	P / —	1211 / DL	P / —	1931 / DKN	TRAFFIC SIGNAL P / —	1800 / DKN	P / —

01-05-06	01-23-06	03-08-06	03-11-06
D / C	D / C	D / OVC	D / OVC
#2 STOPPED AT SIGNAL #1 PULLED ALONGSIDE TO TURN RT-#2 TRIED TO TURN LT-COLLIDED WITH #1. #2 H/R	#1 FT OBEY TRAFFIC SIGNAL, HIT #2 #2 WAS PUSHED INTO INTO #3 #3 #2 #1	FTY ROW #2 #1	#1 FT OBEY TRAFFIC SIGNAL FLASHING RED LIGHT #2 #1
315 / DL	P / — #1 IMPROPER TURN	1530 / DL	P / —	1526 / DL	P / —	2308 / DKN	P / —

03-22-06	04-28-06	04-29-06	07-18-06
D / C	D / C	D / R	D / C
FT OBEY TRAFFIC SIGNAL #1 #2	#2 FT OBEY TRAFFIC SIGNAL RED LIGHT #2 #1	#2 #1 #1 FT OBEY TRAFFIC SIGNAL	#2 #1
1332 / DL	P / —	1125 / DL	P / —	1552 / DL	P / —	1905 / DL	P / —

UNIVERSITY & WATER PAGE 5

12-19-06	06-14-07	06-18-07	07-09-07
S	D	D	D
OVC	C	C	C
#2 #1	#2 #1	#1 #2	#2 #1 UNSAFE TURN
1441 DL	1310 DL	1045 DL	1147 DL
P —	P —	P —	P —

07-28-07	08-16-07	10-21-07	11-19-07
D	D	D	DSK
C	C	OVC	OVC
#1 #2 UNIT #2 RAN RED LIGHT	#2 #1	#2 #1 UNIT #1 RAN RED LIGHT	#1 #2 #1 RAN RED LIGH
1955 K	0856 DL	1955 DSK	0811 DL
P —		P —	P

02-14-08	03-03-08	05-19-08	11-16-08
D	D	D	D
C	C	C	OVC
#1 FTS #2	#2 #1 UNIT #1 RAN RED LIGHT	#2 #1	#2 #1
1543 DL	1637 DL	1937 DL	1500 DL
P	P	P	P

03-11-09	05-31-09
D	D
C	C
#1 #2 UNIT #1 RAN RED LIGHT	#1 FTS #2
0705 DWN	1127 DL
P&I	P

UNIVERSITY & MAIN/"A" ST., PAGE 5

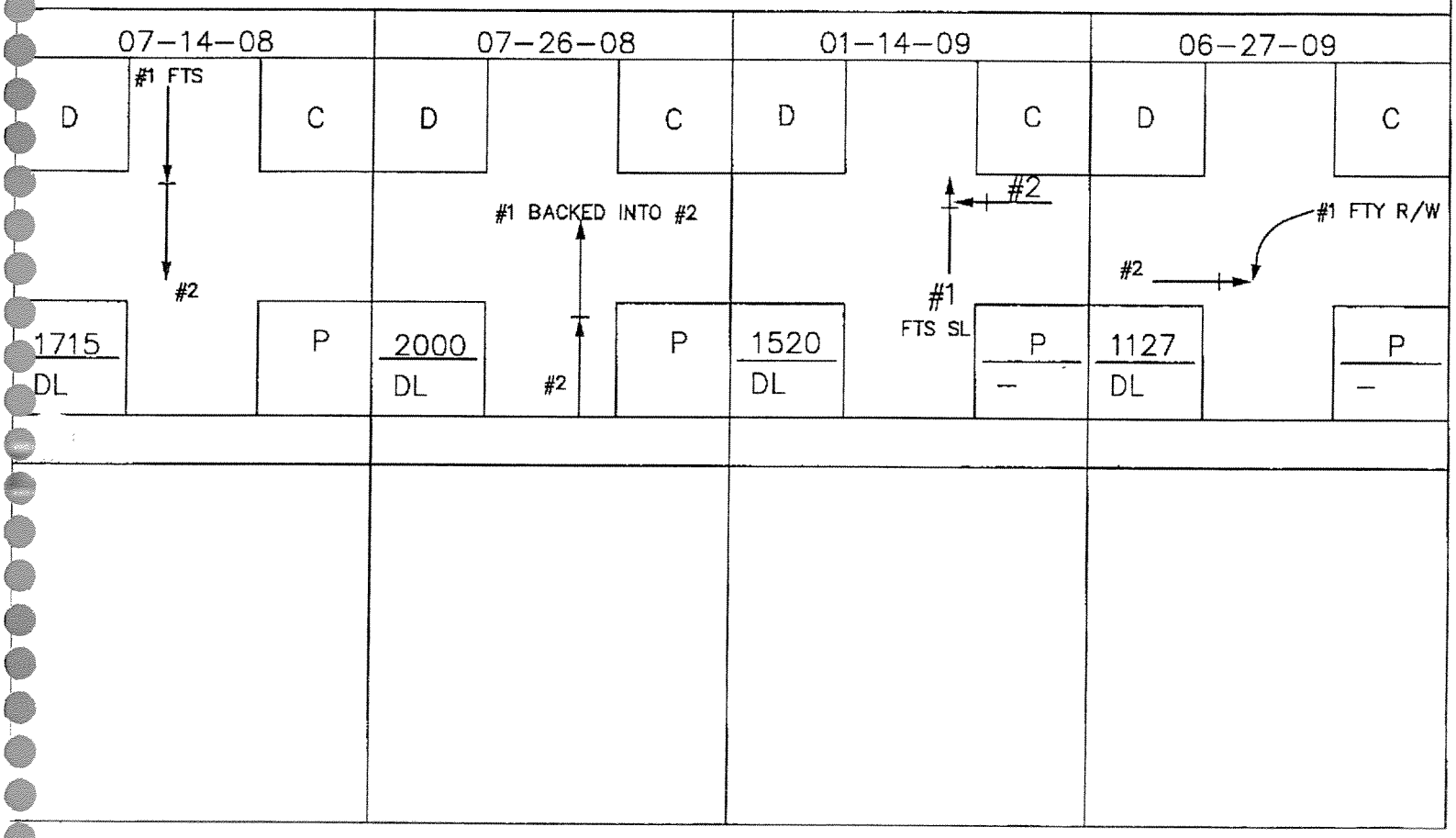
11-08-03		02-12-04		04-04-04		05-28-04	
D	C	D	F	D	C	D	C
#2 FTY R/W #1		T TL POLE		#2 #1 FTY R/W		#2 #1 FTY R/W	
1711 DKN	P –	1750 DKN	P –	1730 DL	P –	1812 DL	P –

04-01-05		06-29-05		10-12-05		11-15-05	
D	OVC	D	C	D	C	D	C
#1 #2 BOTH FTY R/W		FTY R/W		T LT POLE		#2 #1 UNSAFE LANE CHANGE	
0800 DL	P –	0857 DL	P –	1611 DL	P –	1715 DKN	P –

01-15-06		12-14-06		06-05-07		06-12-07	
D	C	S	I	D EL CAPORAL LOT	C JACK IN THE BOX	D	C
FTY R/W		#1 IMPROPER TURN #2		#4 #3 #1 P #2		#1 #2 #2 FTY R/W	
1053 DL	P –	1105 DL	P –	1616 DL	P –	1738 DL	P –

08-08-07		05-05-08		06-20-08		06-29-08	
D	C	D	C	D	C	D	C
#1 ILLEGAL TURN FROM LANE 2 #2 #1	SCENE NOT OBSERVED	#2 #1		#1 #2		#1 ILLEGAL TURN FROM LANE 2 #2 #1	
1225		1120 DL	P	1500 DL	P	1225 DL	

8TH–UNIVERSITY WAY & MAIN ST PAGE 6



UNIVERSITY & PEARL ST.

11-12-91	1-11-94	11-15-95	10-28-96
C	W C	D C	D C
M	NO INS. FTY R/W	BIKE RIDING WRONG WAY TO TRAFFIC, ON SIDEWALK B	
1659 DKN	P $2400	1338 DL	P $5500	1445 DL	H&R I(1) $0	1228 DL	I(1) $2900

1-11-94	1-24-97	4-2-97	1-12-98
W C	D C	D C	S S
NO INS. FTY R/W	FTY R/W	P	NO PR INS IMP TURN
1338 DL	P $5500	1338 DL	P —	1330 DL	P —	1540 DL	P —

1-24-97	11-06-98	5-22-99	8-20-99
D C	D C	D C	D C
FTY R/W	FTY R/W	FTY R/W	FTY R/W NO PR INS
1338 DL	FTY R/W P —	1300 DL	I(1) —	1355 DL	P —	1541 DL	P —

08-26-02	12-23-02	05-25-06	03-05-07
D C	D C #1 WAITING FOR LEFT TURN, #2HIT #1 AND PUSHED #1 TO HIT #3	W R	D C "B" ST
#1UNSAFE BACKING #2	#1 #2FTC #3	#2 SIGNALED FOR LANE CHANGE #1 THOUGHT #2 WAS TURNING #2 #1	P #2 #1
0850	P —	1044 DL	P —	1715 DL	FTY R/W P —	1024 DL	PEARL P —

UNIVERSITY & PEARL ST. PAGE 2

06-15-09

D C

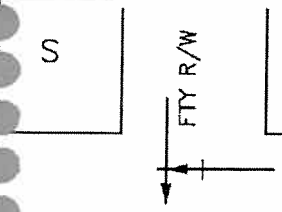
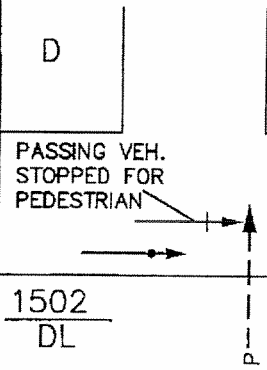
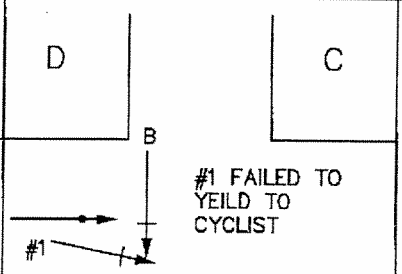
#1
FTY R/W

#2

0945
DL

P
—

8 TH & B ST.

12-5-98	9-14-00	05-10-2006	
			
1303 / DL — P / —	1502 / DL — I (1) / —	1245 / DL — I (1) / —	

8 TH & PINE ST.

3-4-93		5-14-93		12-12-94		01-28-02	
D	C	D	C	S/I	C	S	S
IMP TURN		DEFECTIVE EQ. / FOLLOW TOO CLOSE		FTY R/W		#1 / #2 / LIGHT POLE	
1529 / DL	P / $3200	1250 / DL	P / $3500	1140 / DL	P / $3000	0930 / DL	P / —

05-15-02		07-20-06	
D	C	D	C
#1 / #2FTWROW		#2 / #1 FTW ROW	
1338 / DL	P / —	1630 / DL	P / —

UNIVERSITY & RUBY ST.

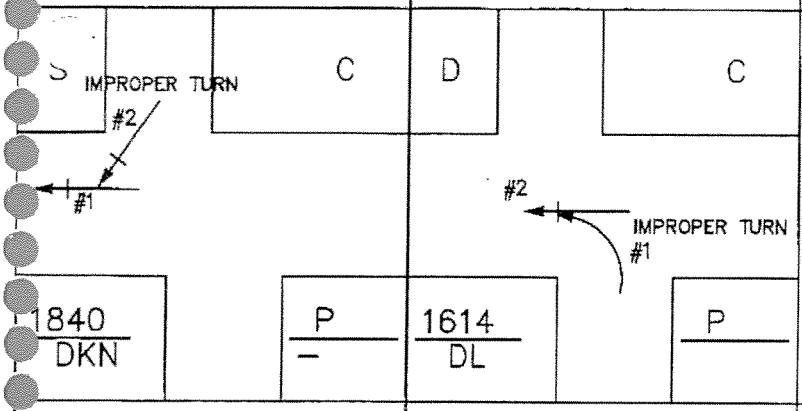
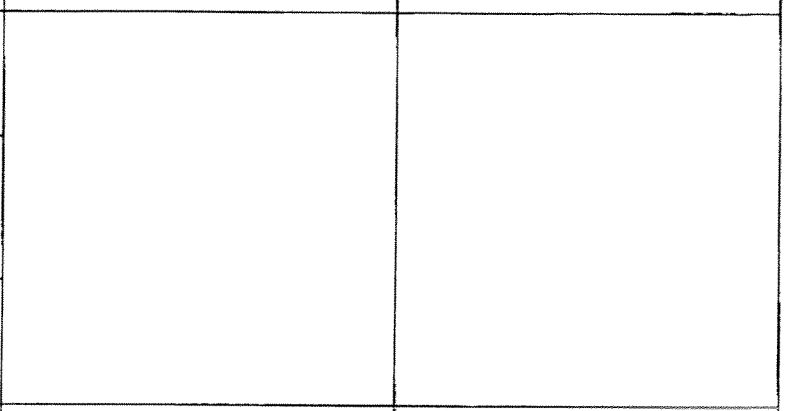
4-24-93	3-1-94	7-5-94	10-17-94
C	D / C	D / C	D / C
FTY R/W #1, #2, #3; #1 TOWING #3	FTY R/W	FTY R/W	
1141 DL	P $3100	1710 DSK	I (1) $2300	1314 DL	P $5600	1703 DL	P $1750

12-15-94	4-25-95	11-22-95	2-27-96
W / S/I	D / C	D / C	D / C
FTY R/W		BUS, FTY R/W	FTY R/W
0945 DL	P $5000	1625 DL	I(2) $1250	1247 DL	P $1000	1255 DL	I(1) $2800

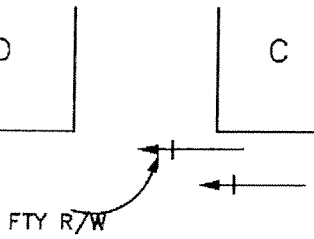
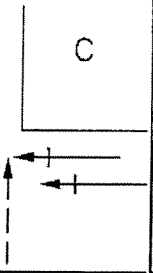
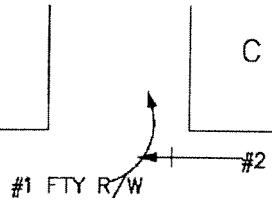
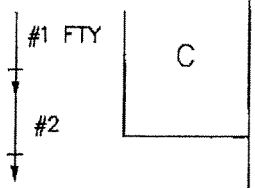
9-24-97	10-30-98	4-13-99	11-05-99
D / C	D / C	D / C	W / R
IMP TURN, T	FTY R/W	TIRE FELL OUT OF TIRE TRUCK	H&R, P
520 DL	P —	1527 DL	P —	1455 DL	P —	2340 DKN	I(1) —

12-13-02	02-02-06	02-28-06	09-27-06
W / R	D / OVC	W / OVC	D / C
#1, #2 FTY SS, NVOL NO INS.	#2 TURNED INTO SIDE OF #1; #1, #2	#2 STOPPED FOR PED, #1 HIT #2; #1, #2, P	#1 HIT BICYCLE; #1, B
1627 JN	P —	1500 DL	P —	0740 DL	P —	1648 DL	I (1) —

UNIVERSITY & RUBY ST.

01-16-07	10-10-07		
			

8 TH & C ST.

6-7-94	7-15-94	08-18-02	09-21-07
			
1710 / DL — P / $2500	1603 / DL — P — 1 (1) / $200	0702 / DL — 1(2) / —	1200 / DL

8 TH & D ST./SPRAGUE ST. PAGE 4

02-05-03	08-28-03	01-06-04	01-06-04
C #1 FTYROW #1=PEDASTRIAN	D C #2 #1	I S #1 #2	I R #2 #1
0858 / DL I(2) / –	2050 / DKN P / –	0850 / DL P / –	1004 / DL P / –

04-08-04	04-28-05	05-26-05	07-28-05
D C #2=BICYCLE	D C FTY ROW	D C #2 #1 FAILED TO STOP	D C #1 #2
1515 / DL #1 P / –	0845 / DL P / –	2202 / DKN P / –	0958 / DL P / –

10-21-05	03-01-06	09-14-06	02-16-07
D C #2 #1 #1 RAN RED LIGHT	D C FTY ROW FLASHING RED LIGHT #2 #1	W R #2 #1 FTYROW	D C #2 #1
823 / DL P / –	0642 / DL P / –	2050 / DKN P / –	2015 / DKN P / –

04-24-07	06-04-07	10-28-07	11-01-07
D C #1 FTY #2	D OVC SIGNAL POLE #1	D C #1 FTYROW	D C #1 #2
1500 / – P / –	0208 / DKN P / –	1148 / DL MINOR INJURY	1304 / DL NO INJURY

8 TH & D ST./SPRAGUE ST. PAGE 5

11-29-07	04-11-08	05-16-08	11-04-08
S	D C	D C	D C
#1 #2	#1 #2 #1 FTY	#1 FTY #2	#1 NOI #2 #3
0900 DL	1305 DL	1135 DL	1300 DL
P —	P	P	P

9-27-08	02-05-09	02-08-09	04-23-09
D C	D C	D C	D C
#1 #2 FTY	#1 FTY #2	#1 #2	#2 #1
320 DL	1201 DL	1201 DL	1200 DL
P	P	P	P

UNIVERSITY WAY & ANDERSON

7-17-92	1-11-94	7-15-94	4-21-95
D C	W C	D C	D C
H&R B	FTY R/W	IMP LANE TRAVEL	H&R
0750 / DL	1242 / DL	2001 / DL	1445 / DL
I (1) / $0	P / $2300	P / $2500	I (1) / $1000

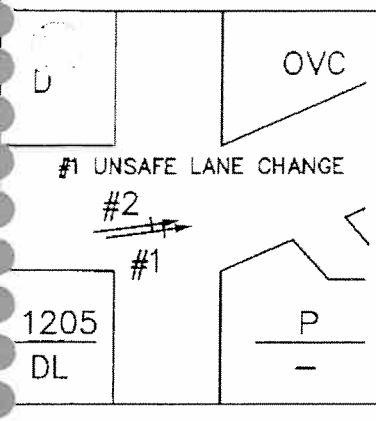
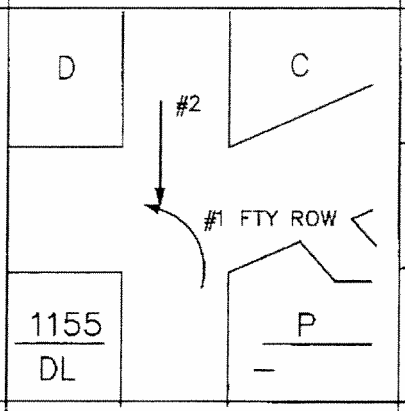
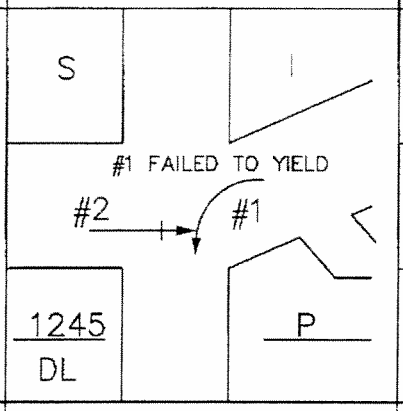
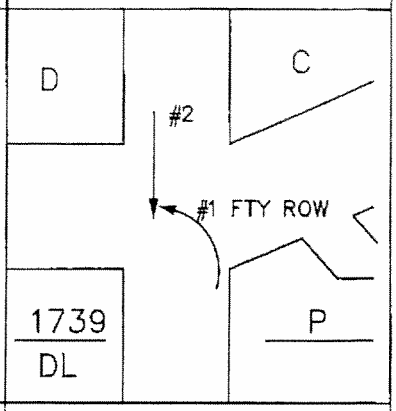
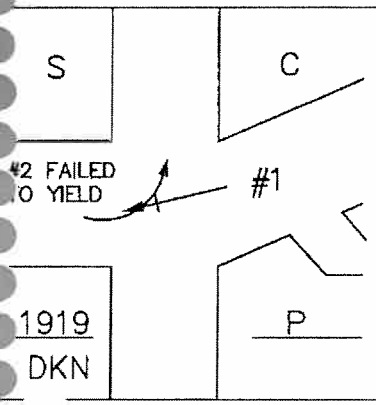
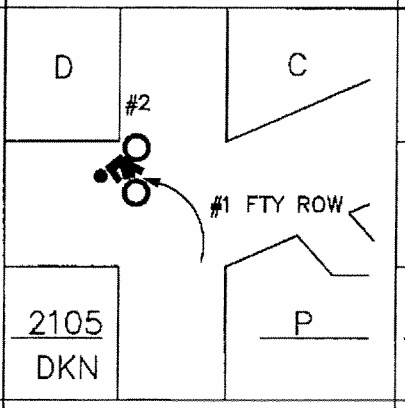
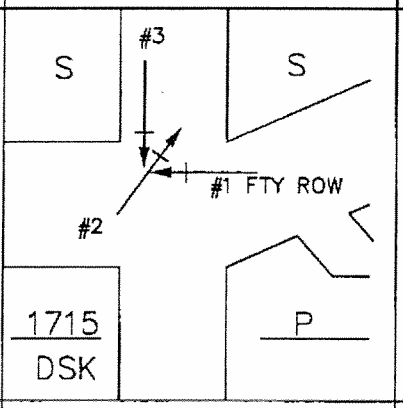
11-8-96	8-17-00	03-29-04	
D C	H&R-VEH. BRUSHED PED. WITH REAR BUMPER D P C	D P C	
HORSE TRAILER FOLLOW TOO CLOSE			
330 / DL	2240 / DKN	1655 / DL	
P / $2000	P / –	P / –	

UNIVERSITY & WALNUT

2-5-91	10-10-91	10-25-91	1-21-93
D C	D C	W R	W C
	5 VIOLATIONS: H&R UNATT.; DWI; VEH. ASS.; FELONY ELUDE H&R ATTENDED	FOLLOW TOO CLOSE	FTY R/W
1910 / DKN	1654 / DL	1400 / DL	1000 / DL
P / $150	1 (2) / 2 TOTALS	P / $250	P / $700

6-28-93	3-29-96	2-12-97	05-06-08
D C	D C	W C	D C
FOLLOW TOO CLOSE	H&R ATTENDED	FTY R/W	#2 #1
0940 / DL	2205 / DKN	0900 / DL	1824 / DL
P / $2500	P / $250	P / MET	P

8TH & CHESTNUT/EUCLID, PAGE 4

11-22-05	06-26-06	12-14-06	09-16-08
			
01-02-09	**01-09-09**	**02-10-09**	
			

8 TH &MAPLE

1-9-93		4-26-08			
S	C	S	C		
0747 / DL	P / $100	0725 / DL	P		

8TH & POPLAR

6-2-92		3-3-94		1-10-98		1-10-98	
D	C	D	C	I	OVC	I	OVC
2018 / DL	I (1) / $5800	1722 / DL	I (1) / $60	2230 / DKN	I (1) / —	2230 / DKN	MINOR / INJURY

FTS SS

H&R ATTENDED

B

#1 FTY

UNIVERSITY & ALDER ST, PAGE3

05-11-02	10-09-03	12-04-03	02-18-04
C	D	OVC	S	S	D	C
#1 #2 NO INS. #1 WAITING IN CENTER LANE TO TURN LEFT	#1 FTY R/W #2	#2 #1FTC	#2 #1
1345 DL	P —	1755 DSK	P —	1935 DKN	P —	1550 DL	P —

04-09-04	04-07-04	11-23-04	12-29-04
D	C	D	C	D	C	S	S
FTY R/W	FTY R/W	FTY R/W #2 #1	#1FTC #2
1526 DL	P —	1240 DL	P —	2121 DKN	P —	1025 DL	P —

01-11-05	02-03-06	01-16-07	01-18-07
S	C	W	OVC	I	OVC	I	OVC
P #2 #1 #2 STARTED TURN #1 STARTED WHEN #2 STOPPED FOR PED FOLLING TO CLOSE	#1 #2 #2 WAITING IN CENTER LANE TO TURN LEFT	#2	#1 #2 #3 #1 FTS
0800 DL	P —	1730 DKN	P —	1734 DKN	P —	1734 DKN	P —

05-10-07	05-01-08	05-29-08	01-19-09
D	C	D	C	D	C	D	C
#2 FTY R/W #1 #2	#1 FTY R/W #2 #1	#1 #2	#1 FTY R/W #2 #1
1439	P —	2200 DKN	P —	1536 DL	P —	1956 DKN	P —

UNIVERSITY WAY NON INTERSECTION, PAGE 8

12-27-04

D | CASCADE CT | C

#1 #2

#2 FOLLOWING TO CLOSE

1250 DL — P —

1100 BLK WEST

01-04-05

D | JR' GAS STATION | C

PUMP 619

PUMP

WEST

1555 DL — P —

02-22-05

D C

#2 #1FTY

ALBERTSON'S

PINE 0745 DL — P — RUBY

04-19-05

D C

#1 #2

FTY ROW

CHESTNUT 1845 DL — P —

05-28-05

D C

PRIVATE DRIVEWAY

#2 #1

#2 STOPPED FOR TRAFFIC

W. UNIVERSITY

RED HORSE CAFE

1052 DL 1518 P —

06-07-05

D OVC

#2

#1 UNSAFE LANE CHANGE

ALBERTSON'S

PINE 1403 DL — P — RUBY

06-21-05

D C

JACK N BOX

#2 #1 FTC

MOTORCYCLE

MAIN 1136 DL — P — PEARL

06-30-05

D C

#1

#2 UNSAFE LANE CHANGE

WALNUT 1148 DL — P — CHESTNUT

07-27-05

OKANOGAN

D C

DOLLAR WISE

#2 #1

CLE ELUM 0916 DL — P —

08-10-05

D C

PRIVATE DRIVEWAY

#2 #1

#2 SLOWED FOR TRAFFIC

RED HORSE CAFE

1200 DL 1518 WEST P —

09-02-05

BRICK RD

KXLE

D C

#1 #2

PERSON ON HORSE

2140 DNO — P —

09-16-05

"D"

#2 #1

#1 FTC H/R

SPRAGUE 2226 DKN — P — PEARL

10-02-05

W R

#2 STOPPED FOR TRAFFIC

#1 #2

ANDERSON 1655 DSK — P — WALNUT

10-29-05

D C

PRIVATE DRIVEWAY

#2 #1

#2 SLOWED FOR TRAFFIC

UNINVOLVED VEHICLE

RED HORSE CAFE

0854 DL — P —

1518 WEST

11-07-05

D OVC

UNSAFE LANE CHANGE

1156 DL — P — WATER

12-05-05

D OVC

PRIVATE DRIVEWAY

#1

#1 TOWING TRAILER
TRAILER UNHOOKED
HIT GAURD RAIL

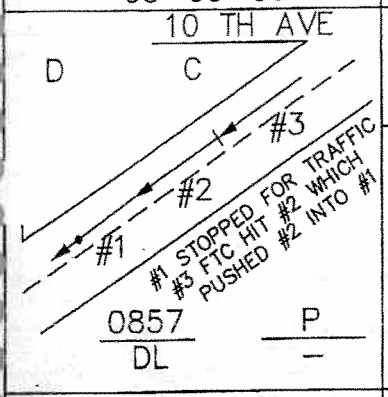
RED HORSE CAFE

0838 DL — P —

1518 WEST

UNIVERSITY WAY NON INTERSECTION, PAGE 9

03-09-06



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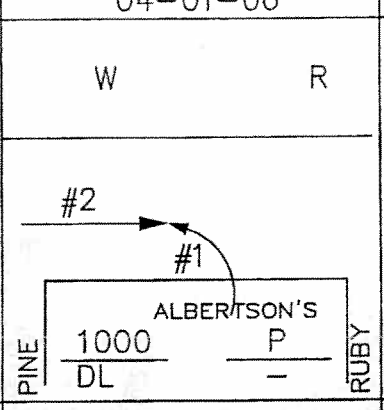

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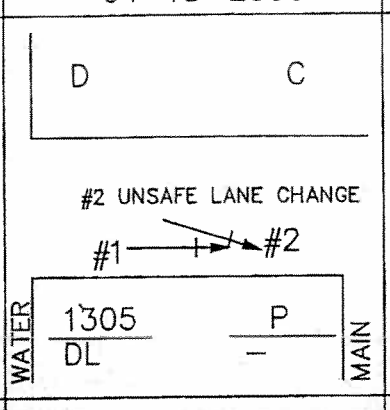

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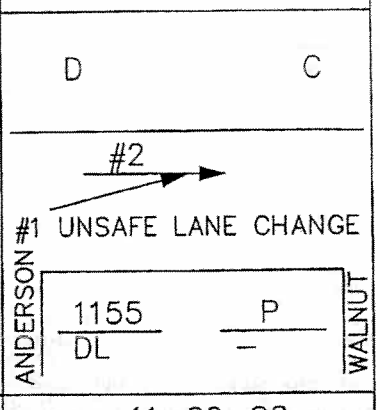

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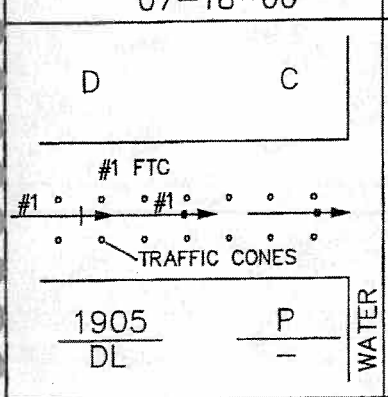

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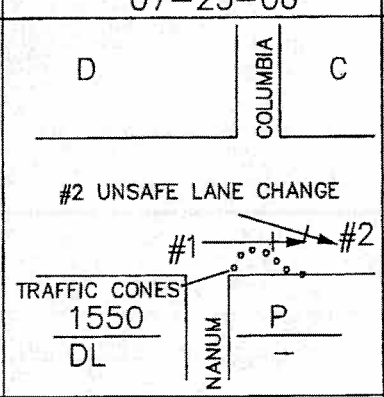

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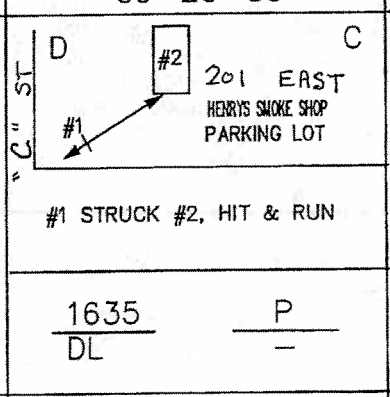

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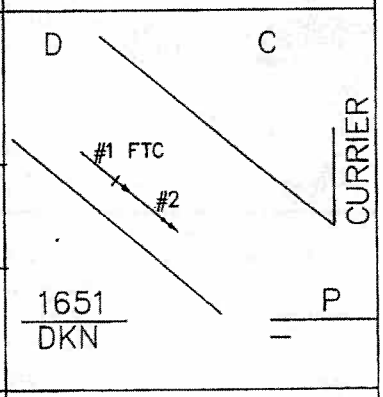

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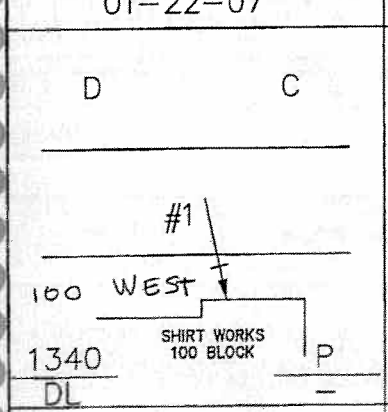

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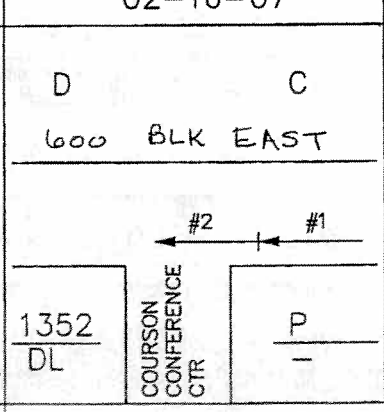

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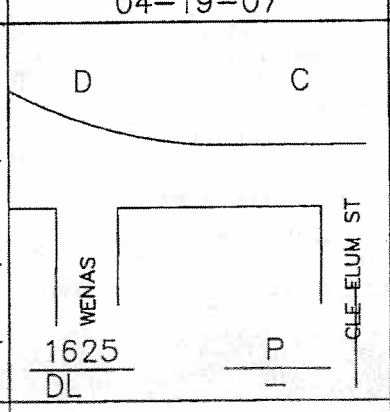

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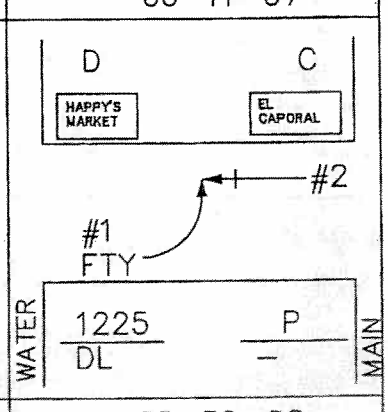

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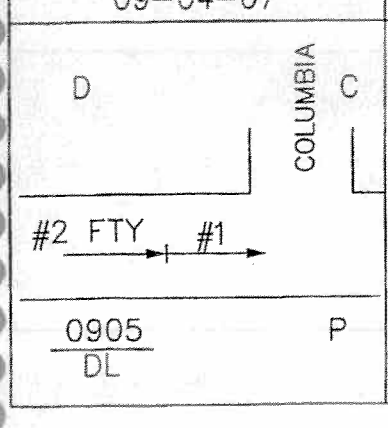

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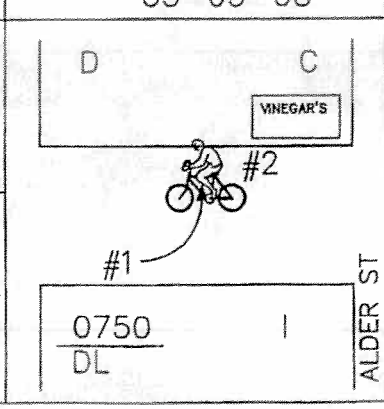

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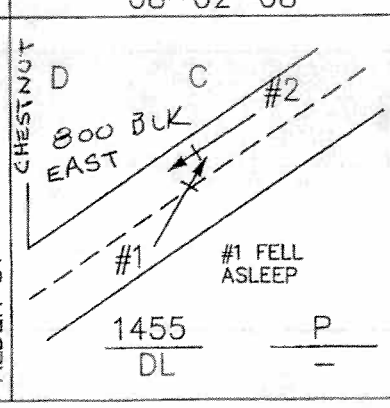

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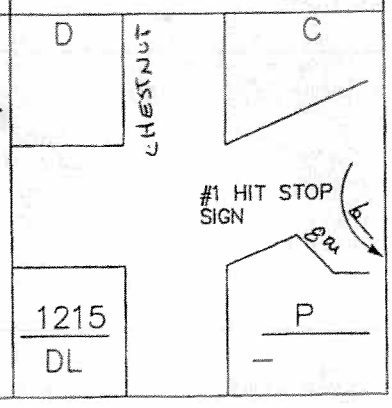
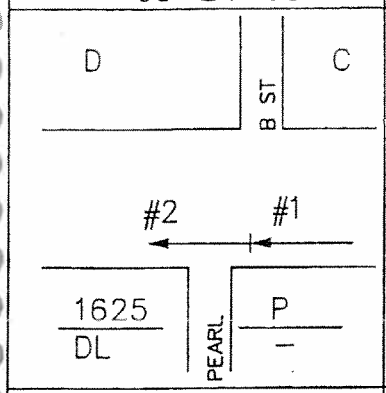


UNIVERSITY WAY NON INTERSECTION, PAGE 10

09-24-08



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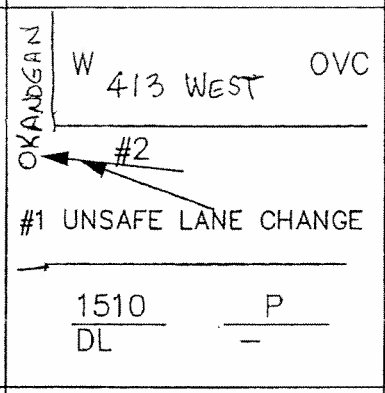

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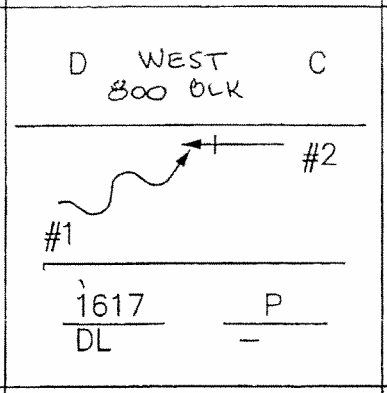

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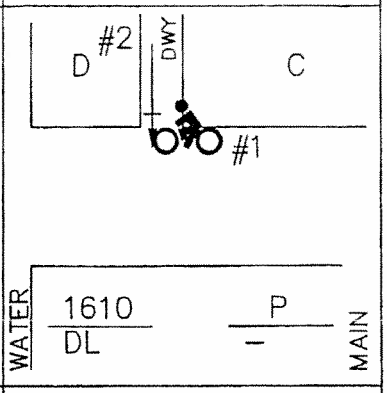

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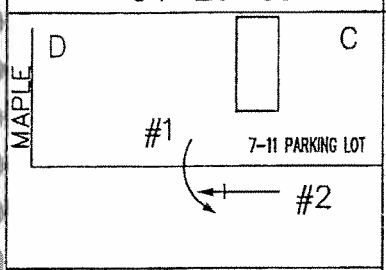

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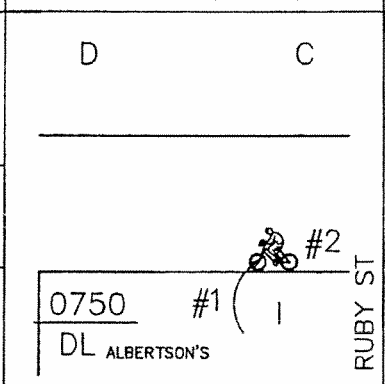

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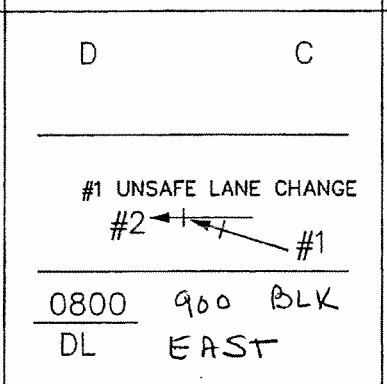

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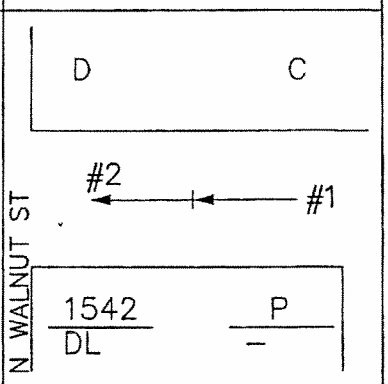

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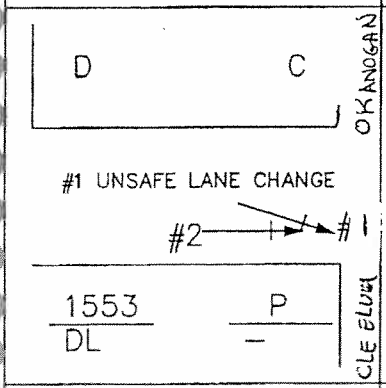

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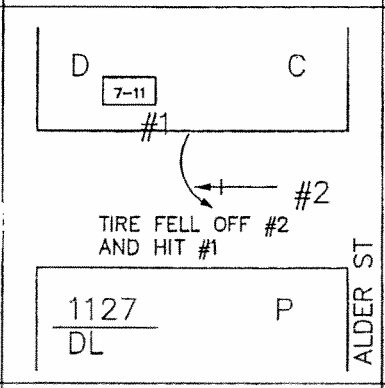

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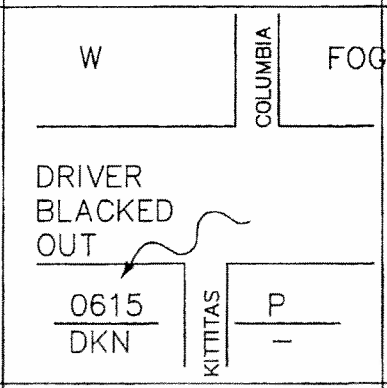

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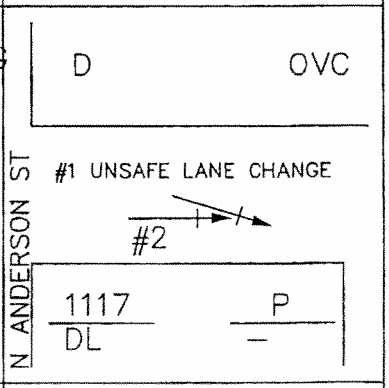

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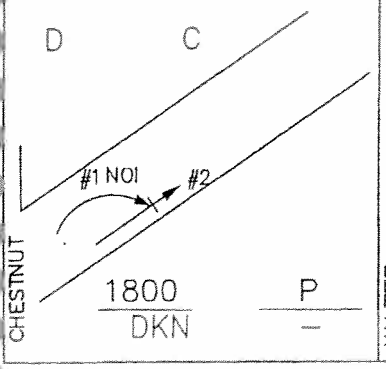

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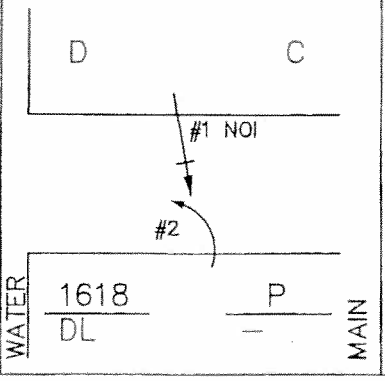
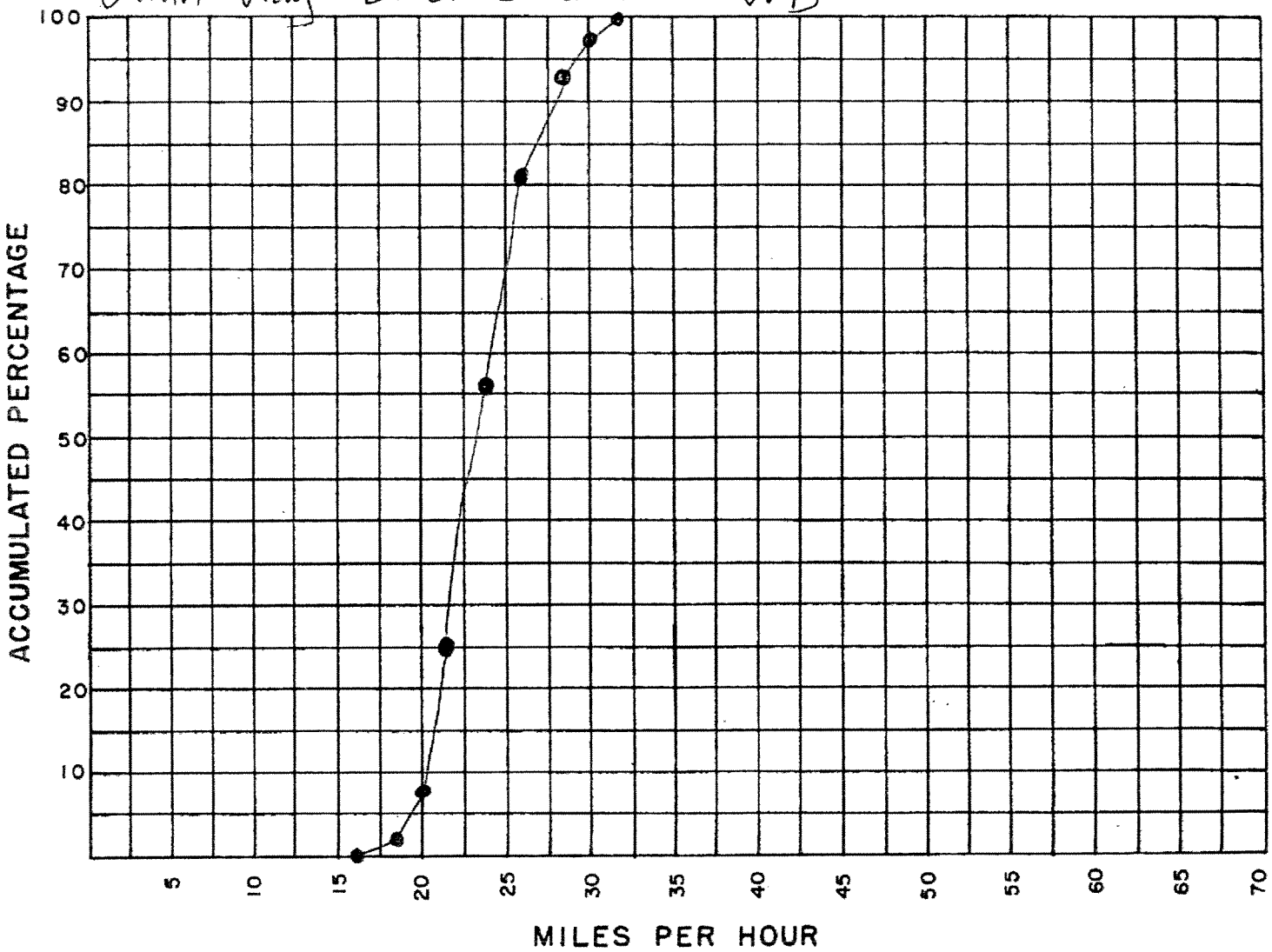


- **SPEED STUDY**

SPEED SURVEY ANALYSIS

Univ. Way E. of Chestnut - WB



95% SPEED (DESIGN SPEED) 28 MPH

85% SPEED (ENFORCEABLE LIMIT) 27 MPH

MEDIAN SPEED (50 PERCENTILE) 24 MPH

MODAL SPEED _____ M.P.H.

AVERAGE SPEED _____ M.P.H.

STD. DEV. ± _____ M.P.H.

PROBABLE ERROR ± _____ M.P.H.

INTER QUARTILE RANGE _____ M.P.H TO _____ M.P.H.

PACE (10 M.P.H.) _____ M.P.H. TO _____ M.P.H.

NUMBER VEHICLES 108

LOCATION

ON Univ. Way

N S (E) W OF Chestnut St.

DIRECTION NB SB EB (WB)

DATE 11/17/09

WEATHER Overcast

OBSERVER Derek Mayo

LEGAL LIMIT 25

RADAR MOTOR VEHICLE SPEED
Field Tally Sheet

Date 11/17/09 County Kittitas Street Univ. Way Location just. E. of Chestnut St.
Time: From 8:30 AM To 9:30 Weather over-cast Surface Type Asph. Surface Condition (Wet) (Dry) and (Smooth) (Rough)

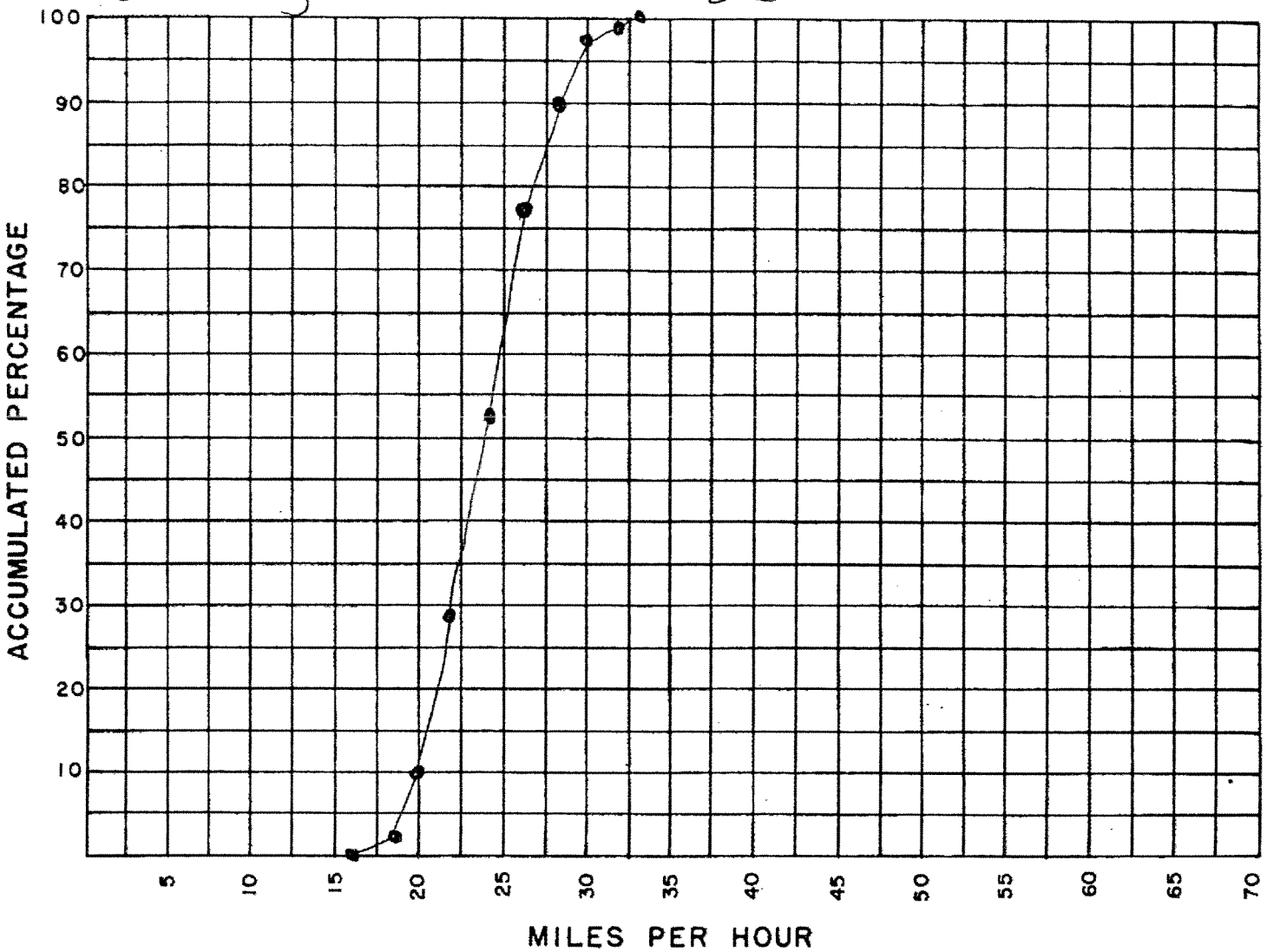
M.P.H.	AUTOMOBILES Direction	Cumulative Total	AUTOMOBILES Direction	Cumulative Total	TRUCKS & BUSES Direction	Direction
>80	Westbound	WB	Accum. %			
80						
78						
76						
74						
72						
70						
68						
66						
64						
62						
60						
58						
56						
54						
52						
50						
48						
46						
44						
42						
40						
38						
36						
34						
32	3	108	100%			
30	4	105	97%			
28	14	101	94%			
26	27	87	81%			
24	33	60	56%			
22	18	27	25%			
20	7	9	8%			
18	2	2	2%			
16	0	0	0%			
14						
12						
10						
8						
6						
4						
2						
0						

TOTAL CARS 108
85 Percentile Speed 27 MPH
Remarks

Recorder [illegible]

SPEED SURVEY ANALYSIS

Univ. Way E. of Chestnut – EB



95% SPEED (DESIGN SPEED) 29 MPH

85% SPEED (ENFORCEABLE LIMIT) 27 MPH

MEDIAN SPEED (50 PERCENTILE) 24 MPH

MODAL SPEED _____ M.P.H.

AVERAGE SPEED _____ M.P.H.

STD. DEV. ± _____ M.P.H.

PROBABLE ERROR ± _____ M.P.H.

INTER QUARTILE RANGE _____ M.P.H TO _____ M.P.H.

PACE (10 M.P.H.) _____ M.P.H. TO _____ M.P.H.

NUMBER VEHICLES 101

LOCATION

ON University Way

N S (E) W OF Chestnut St.

DIRECTION NB SB (EB) WB

DATE 11/17/09

WEATHER Overcast

OBSERVER Derek Mayo

LEGAL LIMIT 25

RADAR MOTOR VEHICLE SPEED
Field Tally Sheet

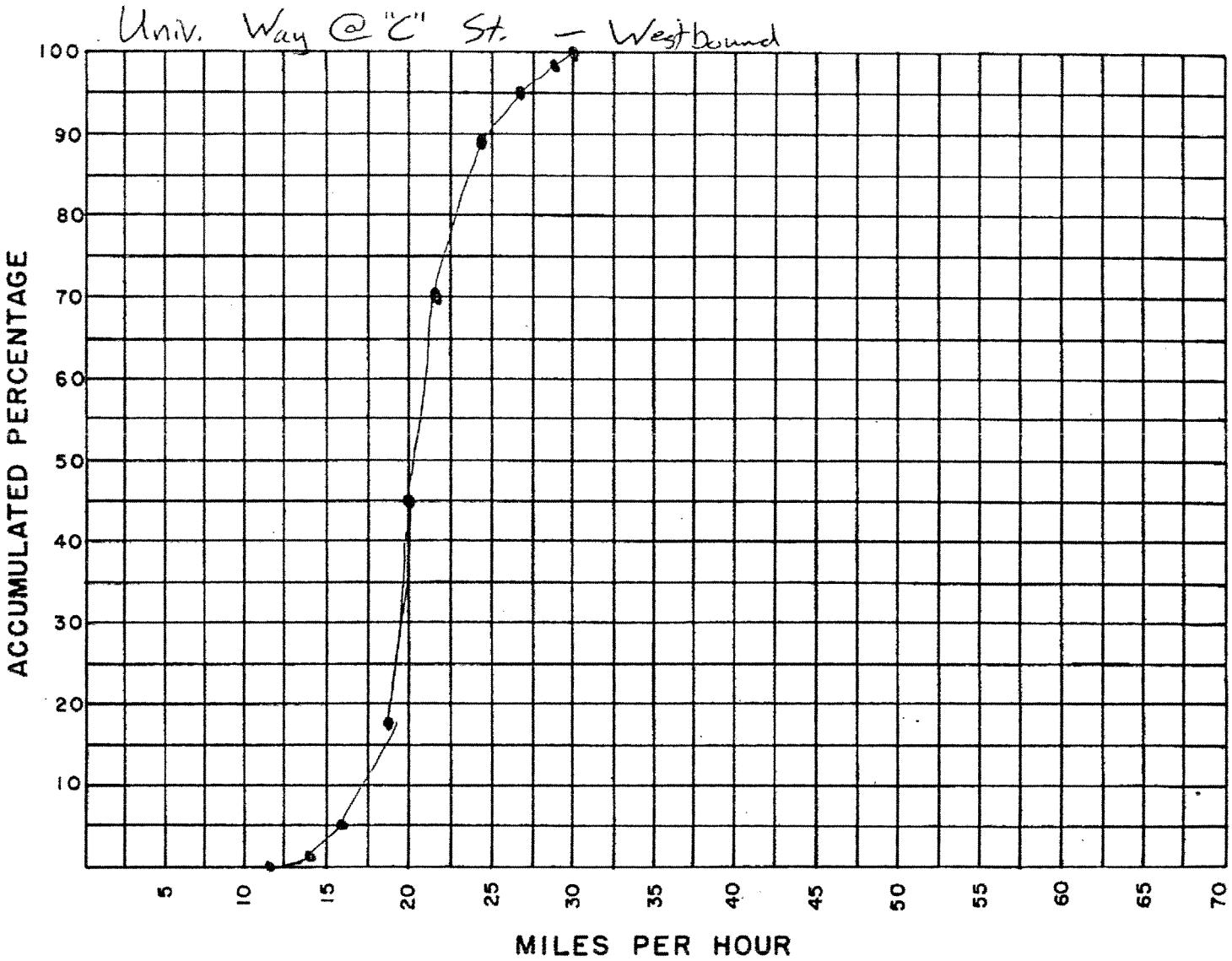
Date 11/17/09 County Kittitas Street Univ. Way Location E. of Chestnut St.
Time: From 8:30 AM To 9:30 Weather Over-cast Surface Type Asphalt Surface (Wet) and (Smooth)
Condition (Dry) (Rough)

M.P.H.	AUTOMOBILES Direction	Cumulative Total	AUTOMOBILES Direction	Cumulative Total	TRUCKS & BUSES Direction	Direction
>80	Eastbound	EB	Accum. %			
80						
78						
76						
74						
72						
70						
68						
66						
64						
62						
60						
58						
56						
54						
52						
50						
48						
46						
44						
42						
40						
38						
36	0	101	100%			
34	1	101	100%			
32	1	100	99%			
30	8	99	98%			
28	13	91	90%			
26	24	78	77%			
24	25	54	53%			
22	19	29	29%			
20	8	10	10%			
18	2	2	2%			
16	0	0	0%			
14						
12						
10						
8						
6						
4						
2						
0						

TOTAL CARS 101
85 Percentile Speed 27 MPH
Remarks

Recorder _____

SPEED SURVEY ANALYSIS



95% SPEED (DESIGN SPEED) 26 MPH

85% SPEED (ENFORCEABLE LIMIT) 23.5 MPH

MEDIAN SPEED (50 PERCENTILE) 20.5 MPH

MODAL SPEED _____ M.P.H.

AVERAGE SPEED _____ M.P.H.

STD. DEV. ± _____ M.P.H.

PROBABLE ERROR ± _____ M.P.H.

INTER QUARTILE RANGE _____ M.P.H TO _____ M.P.H.

PACE (10 M.P.H.) _____ M.P.H. TO _____ M.P.H.

NUMBER VEHICLES 107

LOCATION

ON Univ. Way

N S E W OF "C"

DIRECTION NB SB EB WB

DATE 11/17/09

WEATHER Overcast

OBSERVER Derek Mayer

LEGAL LIMIT 20

RADAR MOTOR VEHICLE SPEED

Field Tally Sheet

Date 11/17/09 County Kittitas Street Univ. Way Location "C" St.

Time: From 1:45pm To 2:45 Weather Over-cast Surface Type Asphalt Surface Condition (Wet) and (Dry) (Smooth) (Rough)

M.P.H.	AUTOMOBILES Direction	Cumulative Total	AUTOMOBILES Direction	Cumulative Total	TRUCKS & BUSES Direction	Direction
>80	Westbound		Accum. %			
80						
78						
76						
74						
72						
70						
68						
66						
64						
62						
60						
58						
56						
54						
52						
50						
48						
46						
44						
42						
40						
38						
36						
34						
32	0	107	100%			
30	1	107	100%			
28	4	106	99%			
26	7	102	95%			
24	20	95	89%			
22	27	75	70%			
20	29	48	45%			
18	14	19	18%			
16	4	5	5%			
14	1	1	1%			
12	0	0	0%			
10						
8						
6						
4						
2						
0						

TOTAL CARS 107

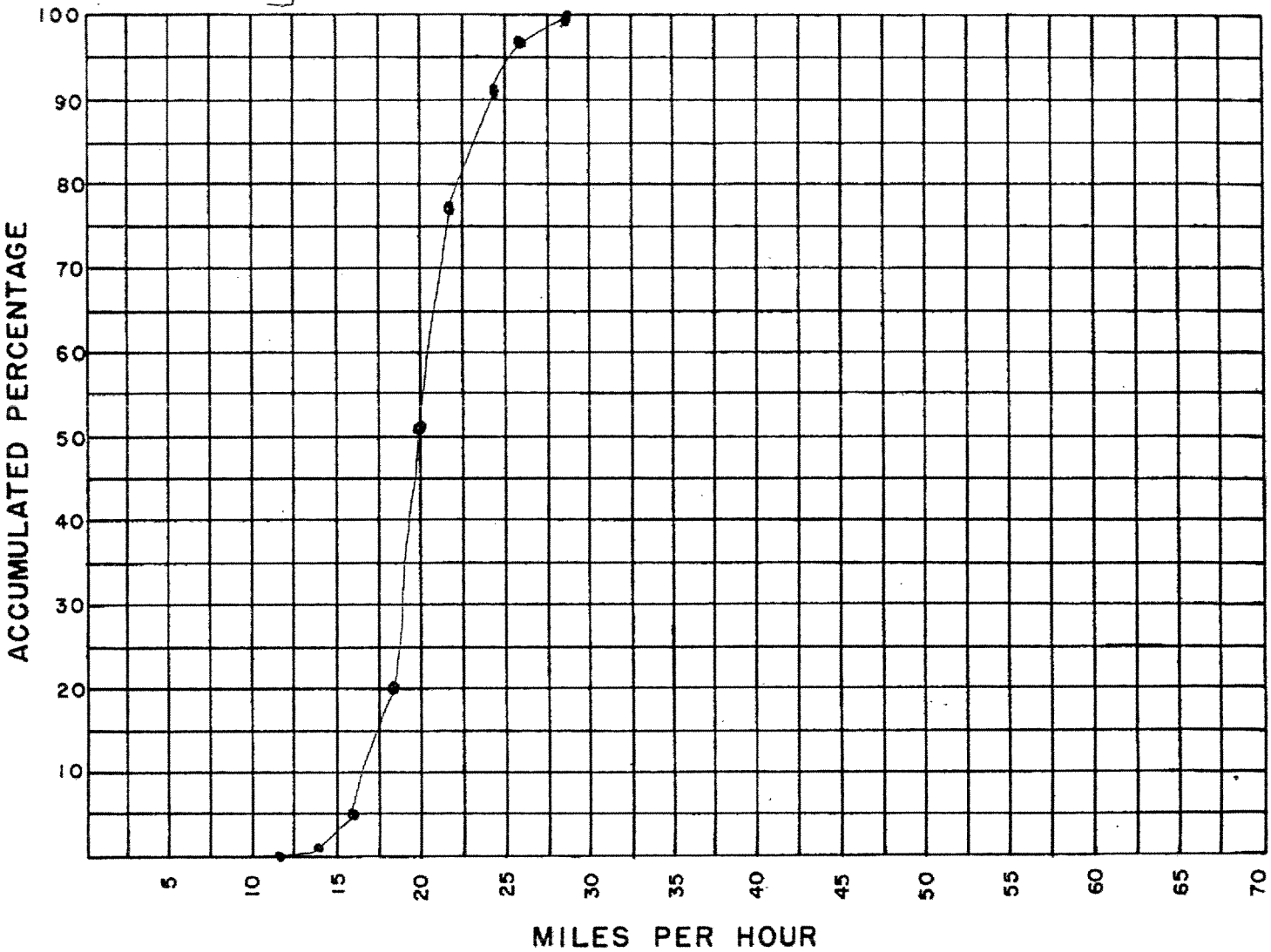
85 Percentile Speed 23.5MPH

Remarks

Recorder Derek Mays

SPEED SURVEY ANALYSIS

Univ. Way @ "C" St. – EastBound



95% SPEED (DESIGN SPEED) 25.5 MPH

85% SPEED (ENFORCEABLE LIMIT) 23.5 MPH

MEDIAN SPEED (50 PERCENTILE) 20.0 MPH

MODAL SPEED _____ M.P.H.

AVERAGE SPEED _____ M.P.H.

STD. DEV. ± _____ M.P.H.

PROBABLE ERROR ± _____ M.P.H.

INTER QUARTILE RANGE _____ M.P.H TO _____ M.P.H.

PACE (10 M.P.H.) _____ M.P.H. TO _____ M.P.H.

NUMBER VEHICLES 112

LOCATION

ON Univ. Way

N S E (W) OF "C" St.

DIRECTION NB SB (EB) WB

DATE 11/17/09

WEATHER Overcast

OBSERVER Derek Mayo

LEGAL LIMIT 20 MPH

RADAR MOTOR VEHICLE SPEED
Field Tally Sheet

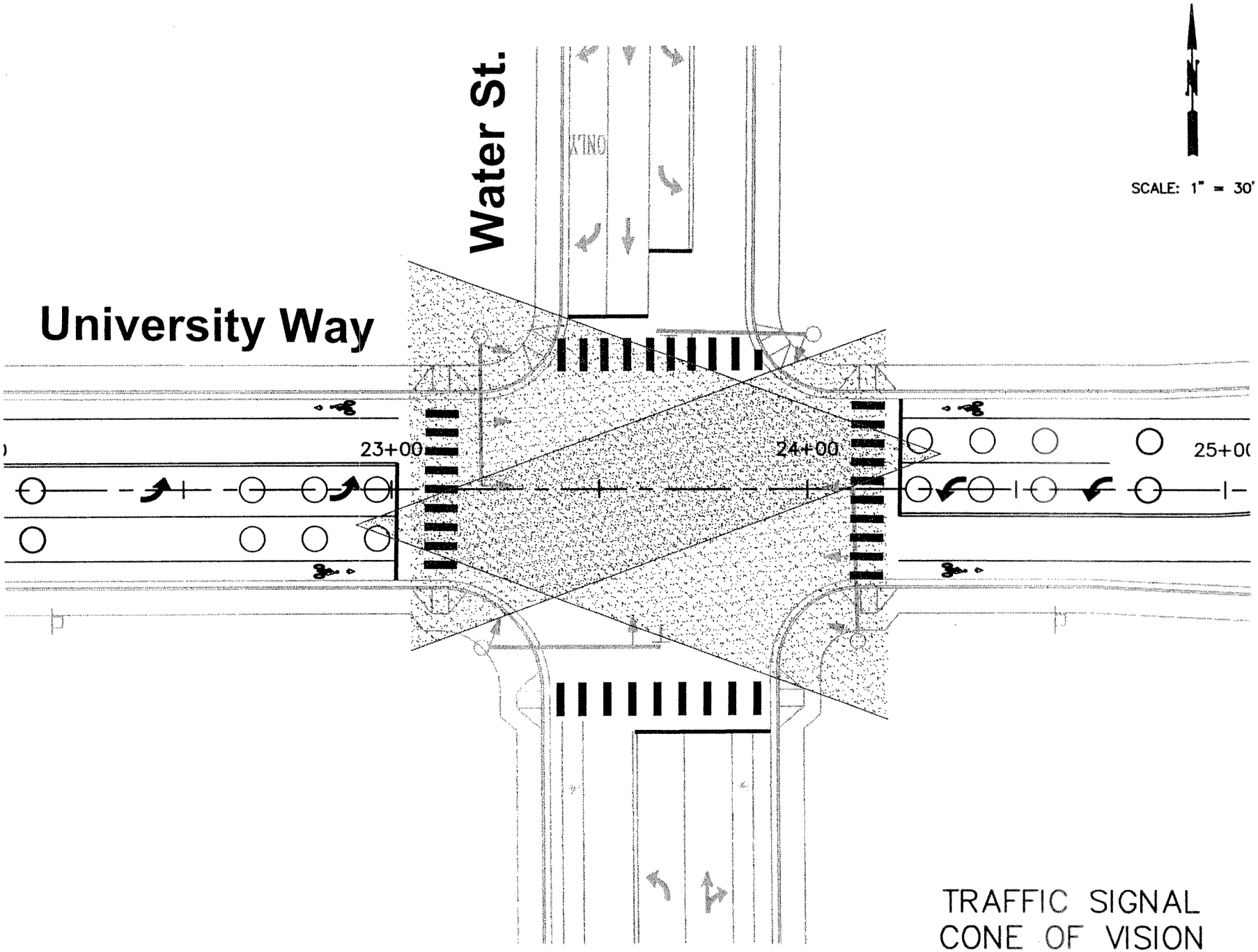
Date 11/17/09 County Kittitas Street Univ. Way Location "C" St.
Time: From 1:45pm To 2:45 Weather Over-cast Surface Type Asphalt Surface Condition (Dry) and (Snow)

M.P.H.	AUTOMOBILES Direction	Cumulative Total	AUTOMOBILES Direction	Cumulative Total	TRUCKS & BUSES Direction	Direction
>80	East bound		Accum. %			
80						
78						
76						
74						
72						
70						
68						
66						
64						
62						
60						
58						
56						
54						
52						
50						
48						
46						
44						
42						
40						
38						
36						
34						
32						
30	0	112	100%			
28	3	112	100%			
26	7	109	97%			
24	16	102	91%			
22	29	86	77%			
20	35	57	51%			
18	16	22	20%			
16	5	6	5%			
14	1	1	1%			
12	0	0	0%			
10						
8						
6						
4						
2						
0						

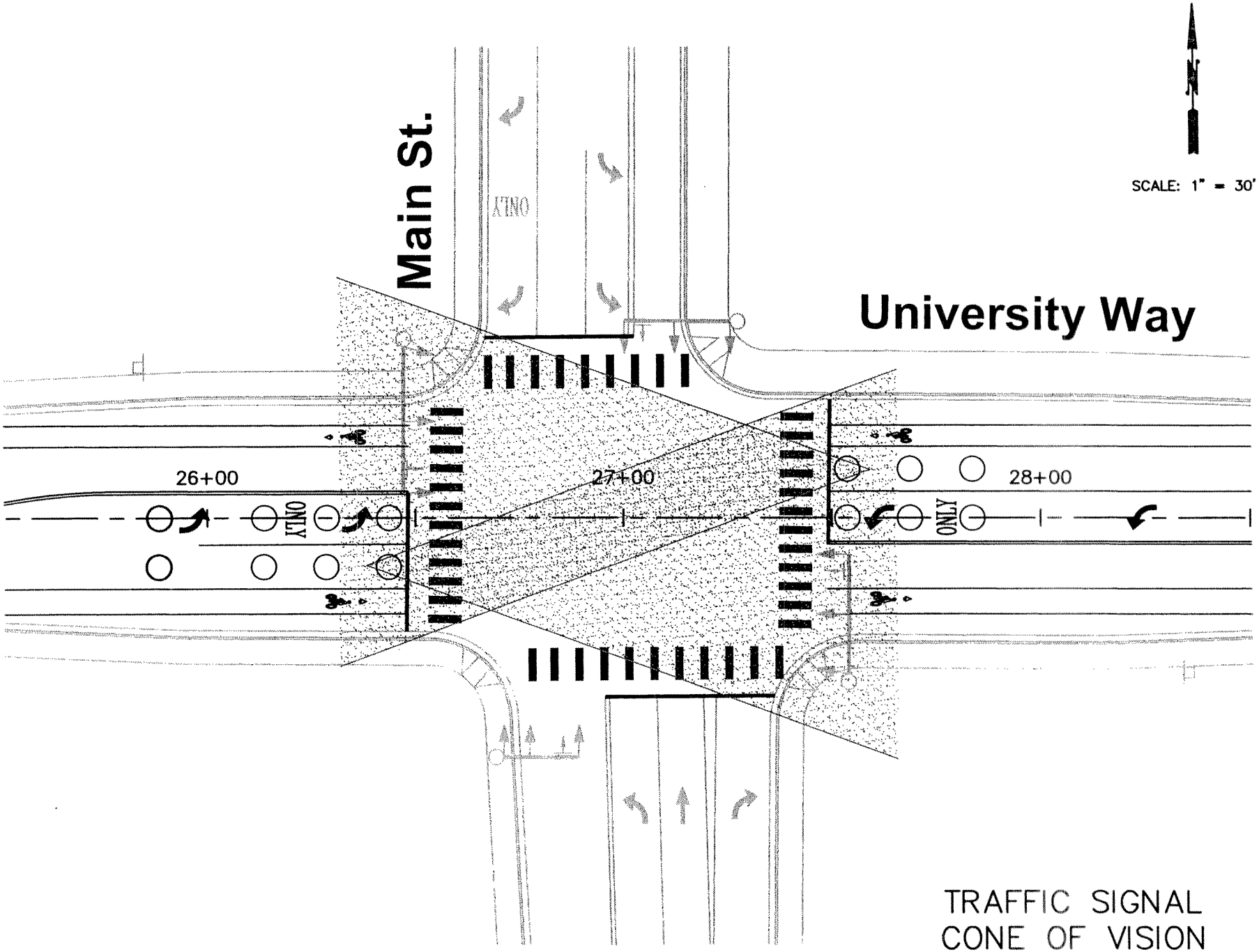
TOTAL CARS 112
85 Percentile Speed 23 MPH
Remarks

Recorder Derek Mayo

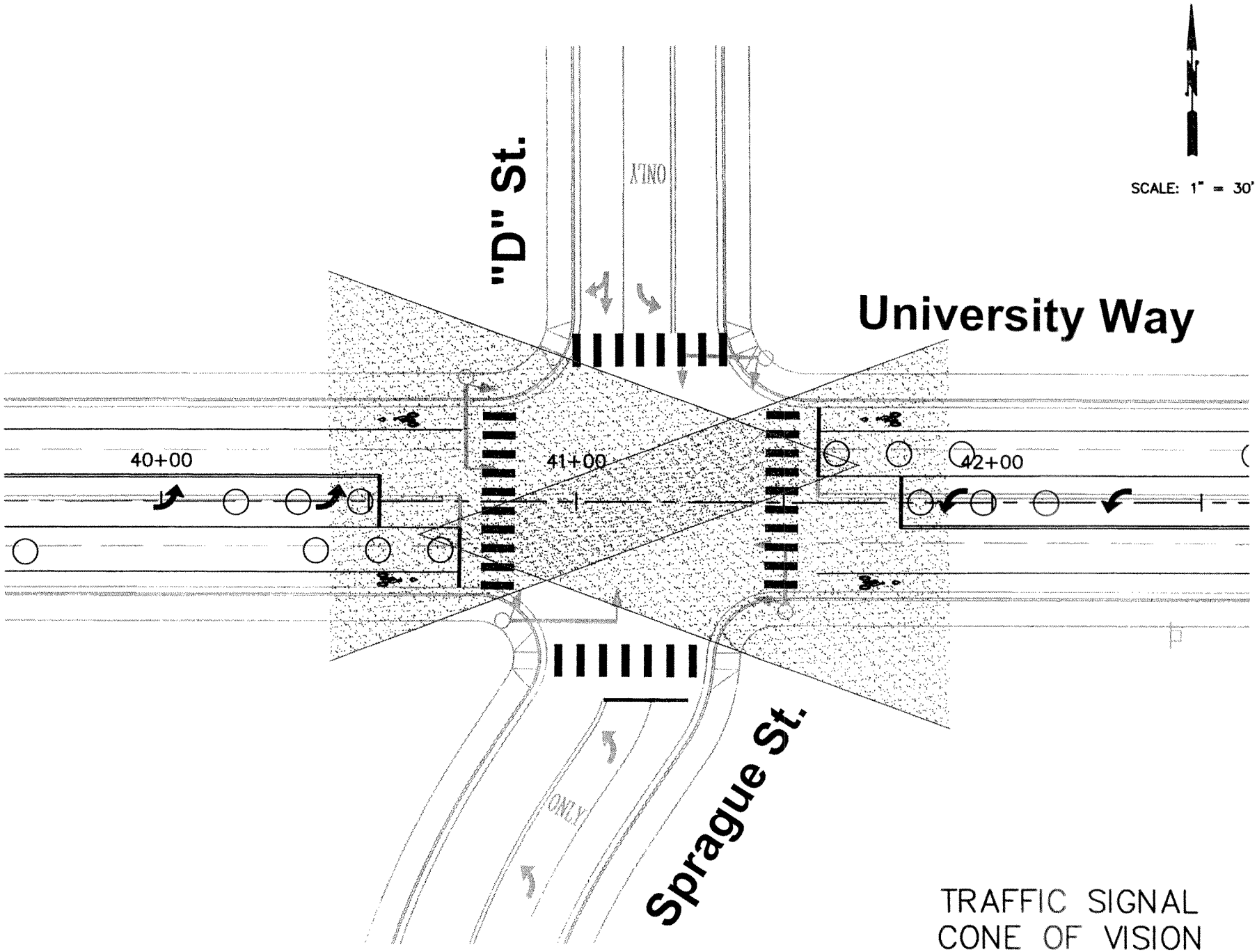
• TRAFFIC SIGNAL – CONE OF VISION



TRAFFIC SIGNAL
CONE OF VISION

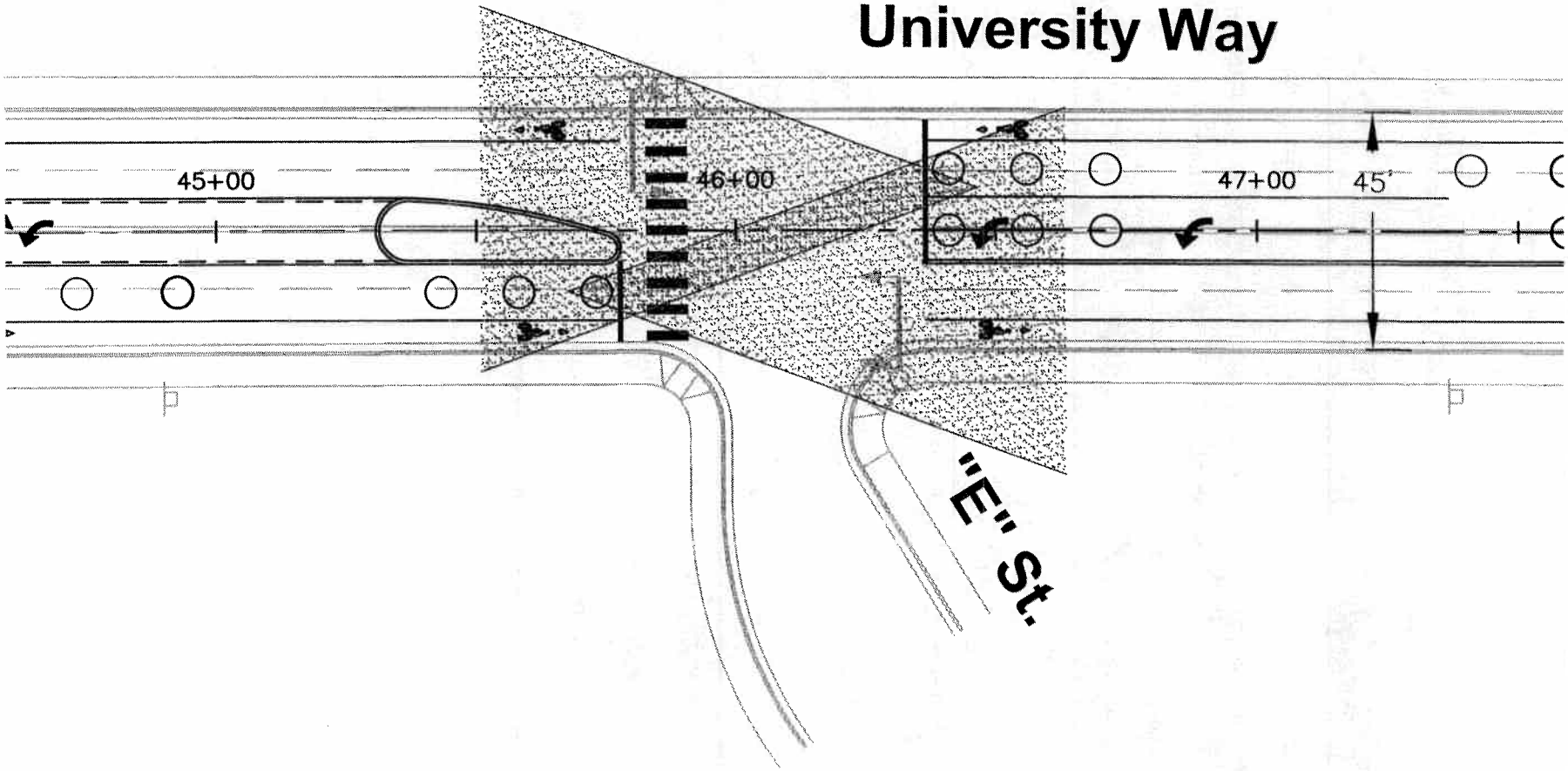


TRAFFIC SIGNAL
CONE OF VISION

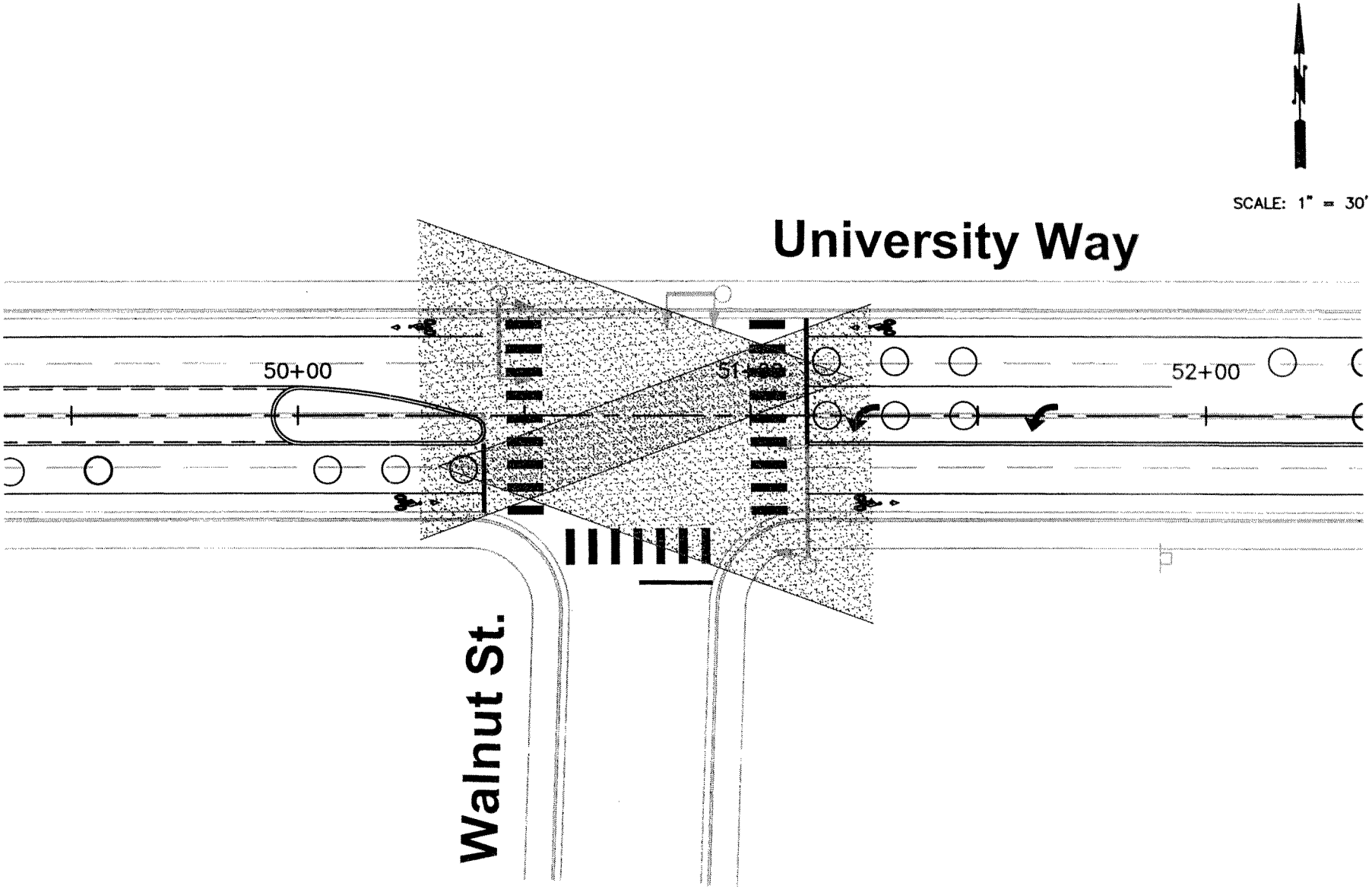


TRAFFIC SIGNAL
CONE OF VISION

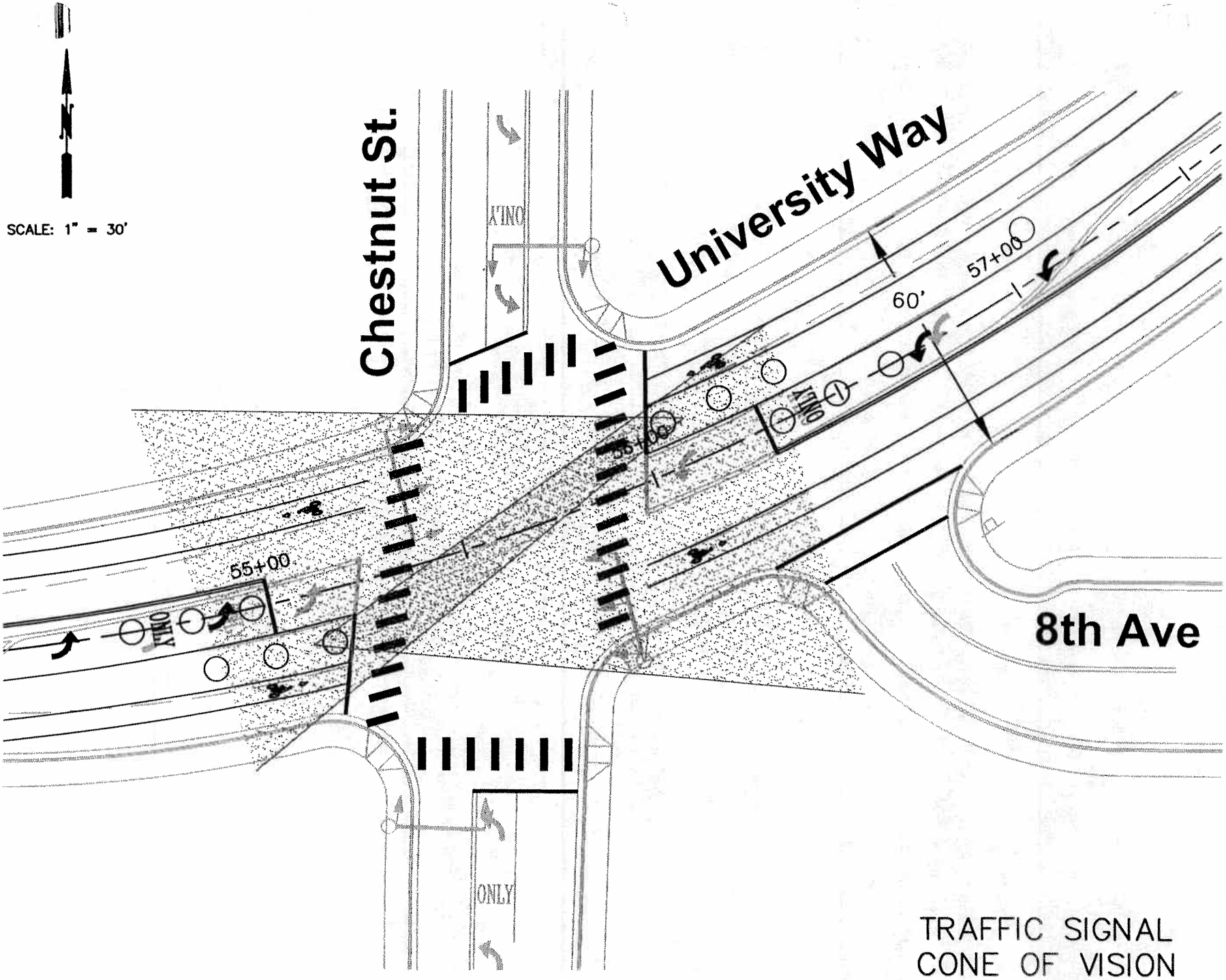
SCALE: 1" = 30'



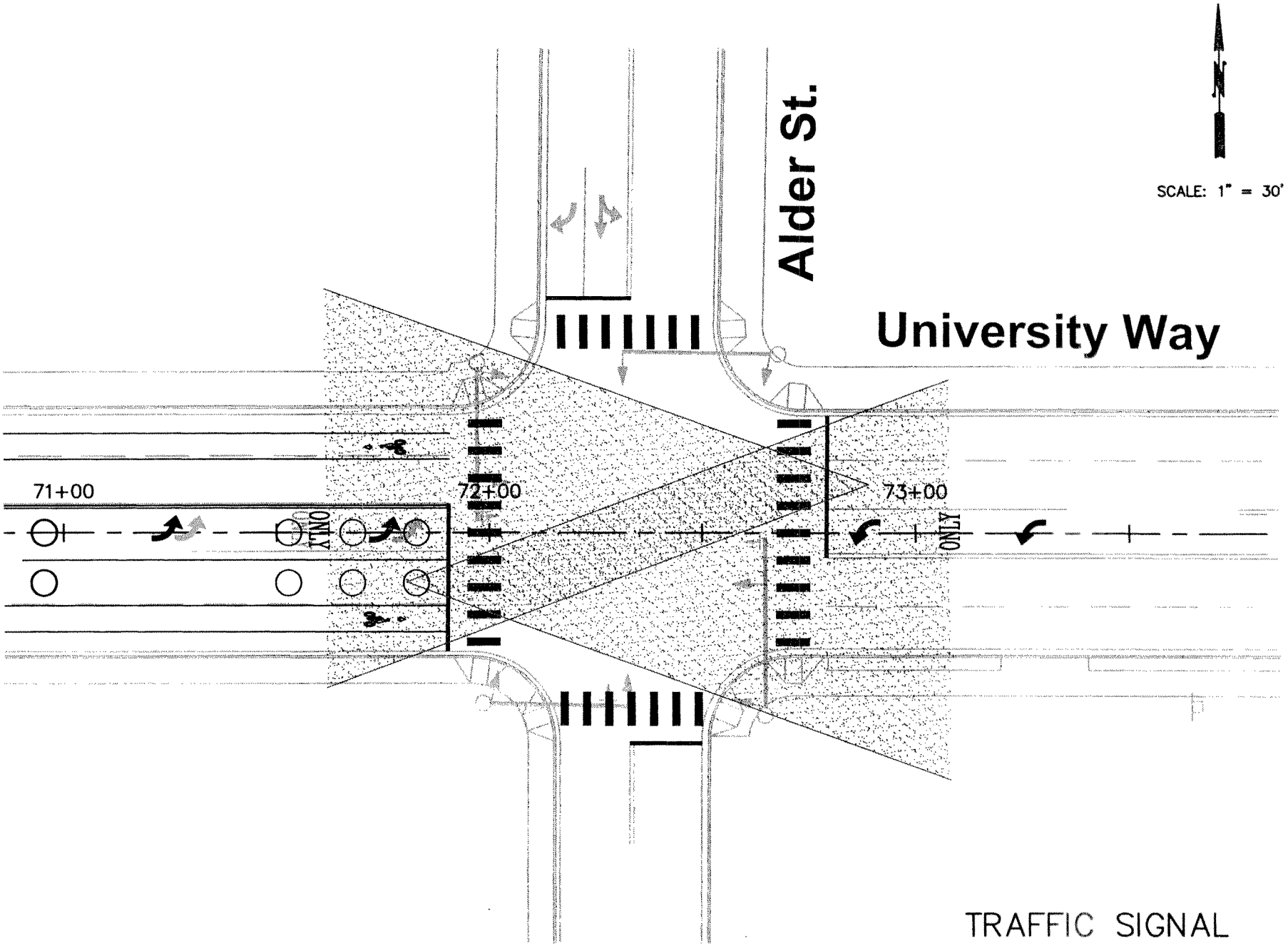
TRAFFIC SIGNAL
CONE OF VISION



TRAFFIC SIGNAL
CONE OF VISION



TRAFFIC SIGNAL
CONE OF VISION



TRAFFIC SIGNAL
CONE OF VISION

• COST ESTIMATE

University Way Channelization Study
N. Wenas St. to Brick Rd.

COST ESTIMATE

No.	Item	Unit	Qty.		Unit Price		Total
1	Double Yellow Removal	LF	4,329	$	1.75	$	7,575.75
2	4" White Solid Line Removal	LF	232	$	0.50	$	116.00
3	4" White Skip Removal	LF	8,305	$	0.50	$	4,152.50
4	Two Way Lt. Turn Stripe Removal	LF	656	$	1.75	$	1,148.00
5	ONLY's Removal	EA	6	$	50.00	$	300.00
6	Turn Arrows Removal	EA	16	$	50.00	$	800.00
7	Stop Bars and Crosswalk Removal	SF	54	$	2.25	$	121.50
8	Double Yellow Line	LF	2,214	$	3.00	$	6,642.00
9	Two Way Lt. Turn Stripe	LF	4,488	$	2.50	$	11,220.00
10	4" White Edge/Bike Stripe	LF	12,479	$	1.90	$	23,710.10
11	Stop Bars	SF	1,105	$	7.00	$	7,735.00
12	Cross Walk Bars	SF	2,945	$	6.50	$	19,142.50
13	Turn Arrows	EA	44	$	95.00	$	4,180.00
14	Traffic Letters	EA	5	$	130.00	$	650.00
15	Bike Symbols	EA	58	$	130.00	$	7,540.00
16	Traffic Loops	EA	112	$	1,000.00	$	112,000.00
17	Signing	EA	7	$	200.00	$	1,400.00
18	Chestnut Signal Modifications	LS	1	$	10,000.00	$	10,000.00
19	Traffic Control Equipment	LS	1	$	4,000.00	$	4,000.00
20	Traffic Control Supervisor	HR	80	$	40.00	$	3,200.00
21	Traffic Control Labor	HR	200	$	38.00	$	7,600.00
	Total			**$**	**233,233.35**		
	Engineering (10%)			**$**	**23,323.34**		
	Grand Total			**$**	**256,556.69**		

Assumptions:

1. Three lanes (Eastbound, Westbound, Two Way Lt. Turn, and 2 Bike lanes
2. All Pavement Markings to be Methyl Methacrylate
3. Bike Symbol at the beginning of each block (per side), longer blocks have 2 symbols (per side)
4. Double Turn arrows at the beginning and ending of each block, longer blocks have 3 sets of arrows
5. Chestnut Street Signal Modifications - Add pedestrian detection and signal display. Assume eight pedestrian signal heads, eight pedestrian push buttons, wiring, and controller modifications