

Saltese Apartments

Cedar & Sage Homes
Eagle, Idaho

May, 2024

Prepared By:



Sunburst
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REVISED

TRAFFIC IMPACT ANALYSIS

Tschirley Apartments

Spokane Valley, WA

Prepared for:
Cedar & Sage Homes
Eagle, Idaho

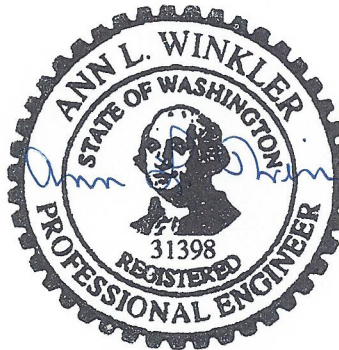
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2nd REVISED

Traffic Impact Analysis

Saltese Apartments

Spokane Valley, Washington

Executive Summary

This executive summary includes the basic information which is presented in more detail in the body of this report. The Saltese Apartments is a multi-family housing complex of 320 units. It is located on both sides of 8th Avenue, a private street, at the southern end of Tschirley Road in Spokane Valley. The site is expected to generate 130 trips in the a.m. peak hour, 126 p.m. peak hour trips, and 1,480 trips on a daily basis.

The location of the site in relation to the surrounding transportation system is shown on Figure 1 in the technical appendix, and the layout of the complex, along with supporting infrastructure is shown on Figure 2. Note that Figure 2 has been updated from the previous submittals of this document. Development of this site into apartments is allowed under the existing zoning.

Due to the size of the development, a public meeting was required. This was well attended, and the items brought forward for discussion are included in the technical appendix, along with the sign in sheets. As a result of this input, the scope of the study was augmented from the usual a.m. peak hour and p.m. peak hour weekday analyses, to also include a truncated analysis of the early afternoon peak hour. The presence of Greenacres Middle School across from the Tschirley / Sprague intersection creates significant traffic volumes when school is dismissed in the afternoon. The traffic volumes collected during this time period are very similar to the p.m. peak hour condition.

This site lies within the South Barker Road Transportation Impact Fee area, and as such, is subject to a traffic impact fee of \$713.00 per multi-family unit. The total fee for this project will be \$228,160.00. The presence of this fee limits the scope of the this document to the intersections on Tschirley Road and other nearby intersections as needed. Eight intersections were included in this analysis, and all are found to be operating at acceptable levels of service under every condition examined in this report. Therefore, there is no additional off-site mitigation needed.

Two supplemental analyses were scoped for inclusion in this report; a safety analysis, and a sight distance analysis from the two access points. The safety analysis does not identify any intersections which have safety concerns. The sight distance analysis revealed a significant rocky outcropping on the northwest corner of Tschirley Road / 8th

Avenue which limits the sight distance at any driveway put in place for an apartment complex on the north side of 8th Avenue. This outcropping could be removed as part of the development of the site. The location of the access point for the apartment complex on the south side of 8th Avenue has been moved, and traffic exiting at this location easily has adequate site distance.

Lastly, due to the change in the site plan, the secondary (emergency) access location has changed. Originally, this access was gated off and went through the Turtle Creek South development. However, now the secondary access is required to be open to the traveling public full time, and it ties into the northern end of the greater Morningside / Belleaire subdivisions. Given this change, the traffic volumes on Tschirley are likely to increase by several thousand each day, most likely approximately 4,500 vehicles per day.

General Project Description

The Saltese Apartments is being developed under city of Spokane Valley file number SEP-2023-0002. They are located on Spokane County parcel 55195.9088, at the southern end of Tschirley Road on both sides of 8th Avenue. This portion of 8th Avenue is a private street. Please note that previous iterations of this document refer to this apartment complex as "Tschirley Apartments." Either name refers to the this project.

The apartments are not age restricted, or limited to low income residents. The buildings and supporting infrastructure will not fully occupy the 30.4 acre site. The site is rocky, especially on the south side of 8th Avenue, and begins the rise to the south to the hill where the Morningside / Belleaire residential developments are located. The parcel south of the Saltese Apartments parcel is being planned for single family houses, and a traffic study will be prepared separately for that subsequent development. A road through that parcel is planned which will provide connectivity between Sprague Avenue and the Morningside / Belleaire subdivision using Tschirley Road. A driveway from the Saltese Apartments is planned to this new road.

The Saltese Apartment complex consists of two parts. The portion south of 8th Avenue consists of 256 units in 8 buildings with supporting parking, etc, surrounding them. This portion is accessed by a driveway at the corner of Tschirley / 8th Avenue. A secondary access point is proposed to a new road extending south into the Morningside neighborhood, extending Manifold Road. The exact name of this road has not yet been determined.

The portion of the project north of 8th Avenue has 64 units in two buildings surrounded by supporting infrastructure. The current site plan (Figure 2) does not specify how this portion of the project will be accessed, but it is likely to form a fourth leg with the road extending to the south. Note that all the buildings in Saltese Apartments are four stories tall.

Sight Distance

A sight distance analysis was scoped for inclusion in this report. The main access point to the southern portion of the complex has been moved from Tschirley Road to the corner of Tschirley Road and 8th Avenue. Sight distance at this location is plentiful, both to 8th Avenue and to Tschirley Road.

A field visit to this site revealed that there is a rocky outcropping on the west side of Tschirley Road north of 8th Avenue. This outcropping is partly on public right-of-way and partly on the Saltese Apartments site. As such, it could be removed, and the site graded to ensure adequate sight distance for the driveway into the northern portion of the complex. The location of the driveway serving the northern portion of the apartment complex is also not easily determined in the field currently, and subject to change. This needs to be re-examined in more detail as a part of the grading plan for the overall site, and development of the public roadway extending south and located on the west side of the apartment complex.

Existing Conditions

Existing characteristics of the transportation system in the study area are summarized in this portion of the report. This includes information about each of the streets and each intersection included in the study area, as well as other characteristics of the system which are relevant to this report. Note that since this site is within the South Barker Road Transportation Impact Fee area, the scope of this study is limited to intersections close to the site, namely along Tschirley Road, and nearby intersections on the Sprague / Appleway corridor.

Existing Roadways

The site is served by Tschirley Road. Between 8th Avenue and Sprague Avenue, Tschirley serves a number of local access streets. Not all drivers want to access Sprague Avenue at the unsignalized intersection of Tschirley / Sprague Avenue. As such, some traffic will use a cross street to access Flora Road to use the signal at the Sprague Avenue / Flora Road intersection.

Sprague Avenue / Appleway Avenue is an east-west principal arterial through Spokane Valley. Within the study area, it has two through lanes in each direction with a center turn lane and is posted at 35 mph.

Tschirley Road is a two-way, two-lane local access road. South of Sprague Avenue, all cross streets are stop controlled to allow the traffic on Tschirley to have the right-of-way. This indicates that at one time, it was a collector. It is posted at 25 mph throughout its length. Tschirley Road tees into Sprague Avenue from the south, and accesses Sprague Avenue from the north at another tee intersection approximately 250' to the west.

Flora Road is a two-way, two-lane, north/south street with a speed limit of 25 mph south of Sprague Avenue, and 35 mph north from there. North of Sprague Avenue it is a minor arterial and provides a route across I-90, and as such provides a critical route for the surrounding areas and ties the neighborhoods on each side of I-90 together. South of Sprague Avenue, it is a local access street, and extends only to 5th Avenue due to the presence of a hill south of there. There are several local access streets which extend east to Tschirley or beyond and provide cross-access. These include 5th Avenue, 4th Avenue and 3rd Avenue.

Tschirley Wye is an east/west local access street linking Tschirley Road with Sprague Avenue east of Appleway Avenue. It has one lane in each direction and also has a 25 mph speed limit. Tschirley Wye provides an access between Sprague Avenue (the minor arterial) and Tschirley Road. However, the amount of traffic which uses this street for that purpose is very low. Most of the traffic using Tschirley Wye from Sprague have destinations on the eastern portion of Tschirley Wye. The traffic using Tschirley Wye from Tschirley Road have destinations on the western portion of Tschirley Wye. During the school dismissal hour, there were a number of parents who parked in the trail parking lot on the north side of Tschirley Wye in a pre-determined manner to pick up their children. These children crossed Sprague / Appleway using the signal at Appleway / Corbin with the other children who walk to / from school and meet their parents in this parking area. An additional characteristic of note is the location where Tschirley Wye intersects with Sprague Avenue is usually within the queue of northbound vehicles on Sprague Avenue waiting at the signal at Appleway / Corbin. As such, it is nearly impossible for a left turning movement to occur. The drivers at this intersection seem well aware of the situation and rarely attempt this movement, turning right instead.

3rd Avenue, 4th Avenue and 6th Avenue are east/west local access streets where they intersect Tschirley Road, Flora Road, Long Road and other cross streets. Each has one lane in each direction and are posted at 25 mph as needed. 2nd Avenue / Coach Drive and 5th Avenue also access Tschirley Road.

Sprague Avenue east of Appleway Avenue is an east/west minor arterial with one lane in each direction and posted at 25 mph.

Project Study Area Intersection and Traffic Control

The scope of the traffic impact analysis was determined to be a weekday a.m. and p.m. peak hour analysis of the following intersections. The traffic control at each of the intersections is also shown on the following table. Lane usage is described in the existing roadways portion of the report.

Table 1 - Study Area Intersections and Traffic Control Summary

Intersection	Signal Control	E/W Stop Control	N/S Stop Control
Appleway Avenue / Corbin Road	X		
Sprague Avenue / Tschirley Wye		X	
Sprague Avenue / Tschirley Road			X
Tschirley Road / Tschirley Wye		X	
Tschirley Road / 3rd Avenue		X	
Tschirley Road / 4th Avenue		X	
Tschirley Road / 6th Avenue		X	
Flora Road / Sprague Avenue	X		

As a result of input during a public meeting, a supplemental analysis is required to examine the level of service during the early afternoon time period. Greenacres Middle School is located on the north side of Sprague Avenue across from Tschirley Road. As such, when school lets out there is significant bus traffic, as well as parent pick-up / drop-off. The intersections included in this analysis are: Appleway / Corbin, Tschirley / Sprague, Tschirley / Tschirley Wye and Sprague / Tschirley Wye. Note that students within 1 mile of the school are not provided bus service. As such, all the students with houses accessed from Tschirley walk or bike to school or are dropped off. This will also be the case for the students residing at the Saltese Apartments. A summary of all the topics brought up at the public meeting, as well as the sign in sheets documenting the members of the public who attended, is included in the technical appendix.

Crash Summary

Crash summaries are available from Spokane Valley and were made available for the years 2018 - 2022. Generally, accidents are documented by type of occurrence, such as property damage only (PDO) or injury (INJ). Crashes are measured based on frequency of crashes per million entering vehicles (MEV). This ratio is a function of the average daily traffic entering the intersection and the annual frequency of crashes.

Of the crashes documented in the study area during this time period, there were no major injuries, nor injuries more serious than “Suspected Minor Injury” or “Possible Injury.” As such, all crashes are classified as property damage only.

There were no crashes at the intersections in the study area which resulted in fatalities during the study period. Nor were there any reportable crashes during 2019. There were also no crashes reported on Tschirley from Coach Drive (2nd Avenue) south other than one at Tschirley / 5th.

Table 2 - Crash Summary for Study Area Intersections

Crash Statistics									
Intersection	2018		2020		2021		2022		Per MEV
	PDO	INJ	PDO	INJ	PDO	INJ	PDO	INJ	
Appleway / Corbin	3	0	2	0	1	0	0	0	0.17
Sprague / Tschirley	0	0	0	0	1	0	1	0	0.06
Tschirley Road / 5th	1	0	0	0	0	0	0	0	0.73

It is generally accepted that a safety problem exists if the crash rate is more than 1.0 crashes per MEV. The intersections in the Sprague / Appleway corridor have crash rates below 1.0. The crash at the Tschirley / 5th intersection occurred due to a driver failing to grant right-of-way when controlled through the use of a stop sign. The streets are flat and of adequate width. Sight distance on the northwest corner is somewhat impeded by bushes and trees. This probably requires maintenance from time to time.

In addition to the crashes which occurred at the intersections, there were several which occurred mid-block. These were a mix of striking a fixed object, and turning left without an adequate gap. However, these were not grouped or otherwise had enough commonality that a safety concern could be identified.

Traffic Counts and Ambient Growth Rates

The turning movement counts at the study area intersections were collected partly in November 2022, and partly during the spring of 2023. The existing traffic counts at the study area intersections are shown on Figure 3. All traffic volumes collected, broken out into 15-minute intervals, are included in the technical appendix.

All of the intersections on Tschirley south of Sprague Avenue were counted, and the traffic volumes in the Tschirley corridor are also included in the technical appendix. However, the scope of the report did not include either Tschirley / 2nd / Coach or Tschirley / 5th. No approved but not completed projects were identified for inclusion in the report.

The Saltese Apartments is expected to be complete by the end of 2025, but the study looked at the conditions in 2028. The ambient growth rate to be used for this study is 1.0% for the next five years, adding a total of 5.1% to the existing traffic volumes. This growth is due to sources other than the Saltese Apartments.

Figure 4 displays the a.m. and p.m. peak hour traffic volumes for the future year (2028) traffic volumes including the existing traffic volumes increased by the ambient growth rate.

Pedestrian, Bicycle, and Public Transit Characteristics

Many pedestrians were observed along Tschirley Road. These were a combination of those traveling to the bus stop on Sprague / Appleway, school children going to and from Greenacres Middle School, and those who were exercising.

Sidewalks are available on Sprague Avenue, but not on Tschirley, or Flora. Sidewalks will be required along the entire site frontage but are otherwise not available. Pedestrians walked either in the street, or in the area immediately adjacent to the street.

Bicycles are allowed to use all streets, but no specific provisions have been made to accommodate them. The former Milwaukee rail line, which parallels and is south of Sprague Avenue in this area, has been designated a mixed use trail. The bike plan currently shows Flora and 4th Avenue as a “bike friendly” route.

Spokane Transit Authority (STA) has a public bus route serving this area, # 98 on Sprague Avenue. Observations showed consistent use of the bus system by residents on or near Tschirley Road.

This site will not affect either rail or air traffic.

Trip Generation

The trip generation characteristics of the site are expected to be represented by the characteristics found in the Institute of Transportation Engineers, *Trip Generation Manual, 11th Edition* for Multifamily Housing (Mid-Rise), Land Use Category (LUC) 221, the land use category for building of four to ten stories.

Table 3 - Trip Generating Characteristics for Saltese Apartments

Units	A.M. Peak Hour			P.M. Peak Hour			ADT
	Total Volume	Directional Distribution		Total Volume per Unit	Directional Distribution		Total Volume
		23% In	77% Out		61% In	39% Out	
320	130	30	100	126	77	49	1,480
Alt mode	3	1	2	3	2	1	30
Vehicular	127	29	98	123	75	48	1,450

ADT - Average daily traffic

Due to the presence of readily available alternate forms of transportation, including a shared use path, and the mass transit route, some trips are expected to be by non-motorized modes. In keeping with the traffic patterns in the greater Spokane area, 2% of the traffic was assigned to these modes.

Traffic Distribution

Distribution of vehicular traffic from the site was based on likely routes to and from it, but also on existing traffic patterns. Barker Road is expected to be the preferred interchange to I-90. Local services are mostly located to the west on Sprague Avenue. Overall distribution is expected to be 60% north on Tschirley Road with 40% taking a street west to Flora Road. Three of the streets connecting to Tschirley provide a route to Flora Road; 5th Avenue, 4th Avenue and 3rd Avenue. All three of these streets are used to access Flora. For purposes of this analysis, 24% is expected to use 3rd Avenue, 12% to use 4th Avenue and 6% to use 5th Avenue. The existing traffic counts show no northbound traffic turning right at any cross streets south of Tschirley Wye. As such, it is expected that access to Liberty Lake will occur at Sprague Avenue. This is shown pictorially on Figure 5. The traffic volumes generated by the Saltese Apartments is expected to distribute itself onto the surrounding transportation system as shown on Figure 6.

Level of Service Analysis

Intersection levels of service (LOS) are expressed by using letter designations from A to F, whereby LOS A represents the best operating conditions and LOS F the worst (saturated flow or over-capacity) conditions. The levels are designed to determine how well an intersection is functioning with respect to variables such as traffic flow and delay.

The level of service analysis for the signalized intersections were conducted according to the procedures outlined in the Transportation Research Board's *Highway Capacity Manual (HCM) - Special Report 209, 7th Edition* as implemented in the Highway Capacity Software, version 8.2. Signalized intersections are required to function at LOS D or better. Unsignalized intersections are required to function at LOS E or better.

Level of service (LOS) analyses were conducted at the study area intersections for existing conditions as shown on Figure 3, for the future year conditions with traffic growth from all known sources other than Saltese Apartments, as shown on Figure 4, and for the future year conditions with the additional traffic from Saltese Apartments. This last condition is determined by adding the traffic volumes shown on Figure 4 with the traffic volumes shown on Figure 6 and are shown on Figure 7.

Existing Level of Service Analysis

A summary of the LOS analysis results for the intersections under the existing conditions, using the traffic volumes shown on Figure 3 are summarized on the following table.

Table 4 - Existing Level of Service Summary

INTERSECTION	EXISTING			
	A.M.		P.M.	
	DELAY	LOS	DELAY	LOS
Appleway / Sprague / Corbin*	17.0	B	14.1	B
Sprague / Tschirley Wye	9.7	A	11.6	B
Sprague / Tschirley	15.1	C	20.2	C
Tschirley / Tschirley Wye	8.8	A	9.0	A
Tschirley / 3rd	9.0	A	9.7	A
Tschirley / 4th	8.9	A	8.8	A
Tschirley / 6th	9.0	A	9.4	A
Sprague / Flora*	13.7	B	20.6	C

* Signalized Intersection - others two-way, stop-controlled

All of the intersections in the study area currently meet agency standards. Note again, that two intersections on Tschirley were not included in the scope of the study; Tschirley / 2nd / Coach and Tschirley / 5th. Therefore levels of service were not determined for these two intersections.

Future Level of Service Analysis (no traffic from Project)

A summary of the LOS analysis results for the intersections under the future conditions with the background projects only, using the traffic volumes shown on Figure 4 are summarized on the following table.

Table 5 - Future Level of Service Summary

INTERSECTION	2028			
	A.M.		P.M.	
	DELAY	LOS	DELAY	LOS
Appleway / Sprague / Corbin*	17.5	B	14.7	B
Sprague / Tschirley Wye	9.8	A	11.8	B
Sprague / Tschirley	15.7	C	21.6	C
Tschirley / Tschirley Wye	8.8	A	9.0	A
Tschirley / 3rd	9.0	A	9.7	A
Tschirley / 4th	8.9	A	8.8	A
Tschirley / 6th	9.0	A	9.4	A
Sprague / Flora*	14.1	B	22.4	C

* Signalized Intersection - others two-way, stop-controlled

All of the intersections in the study area meet agency standards under these conditions. Only small increases in delay are experienced with this increase in traffic.

Future Level of Service Analysis with Traffic from Project

A summary of the LOS analysis results for the intersections under the future conditions with the traffic from the project and using the traffic volumes shown on Figure 7 are summarized on the following table.

Table 6 - Future Level of Service Summary with Project Traffic

INTERSECTION	2028 w/ Project			
	A.M.		P.M.	
	DELAY	LOS	DELAY	LOS
Appleway / Sprague / Corbin*	17.4	B	14.7	B
Sprague / Tschirley Wye	9.8	A	11.8	B
Sprague / Tschirley	20.4	C	25.5	D
Tschirley / Tschirley Wye	9.3	A	9.4	A
Tschirley / 3rd	9.4	A	9.7	A
Tschirley / 4th	9.5	A	9.2	A
Tschirley / 6th	9.8	A	10.3	B
Sprague / Flora*	15.5	B	24.0	C

* Signalized Intersection - others two-way, stop-controlled

All of the intersections in the study area meet agency standards using these traffic volumes. The delay increases slightly, and at Sprague / Tschirley the delay increased almost 4 seconds in the p.m. peak hour, causing the level of service to fall from LOS C to LOS D. Both LOS C and LOS D are within acceptable levels of service. LOS D is the lowest level of service observed in this study.

School Dismissal Analysis

As mentioned previously, Tschirley Road is directly across from Greenacres Middle School. As such, the traffic volumes when school is dismissed can be heavy and the field counts show they are very similar to the p.m. peak hour volumes. Due to the very high level of service at the intersections along Tschirley Road, it was determined these intersections did not need to be included in this analysis, nor did Sprague / Flora. As such, this analysis focused in the intersections of Sprague / Tschirley Road and Appleway / Corbin. The school dismissal traffic volumes are shown at the top of the attached Figure 9. Using the same ambient increase in traffic volumes over the next five years, the anticipated traffic volumes in 2028 are shown on the bottom of Figure 9.

Determining the traffic volumes generated by the Saltese Apartments during this time period is somewhat problematic, since there is no data available for this time period. However, in examining the traffic volume data available, it was determined that the traffic volumes for the “Peak Hour of the Generator” was similar to that used in the p.m.

peak hour, and would be a reasonable representation of traffic volumes generated by the site during the school dismissal hour. This information is shown on the following Table 7. Table 7 assumes the same percentage of trips using alternate modes of transportation (2%).

Table 7 - Trip Generating Characteristics for Saltese Apartments during School Dismissal Hour

Units	P.M. School Dismissal Hour		
	Total Volume per Unit	Directional Distribution	
		60% In	40% Out
320	119	71	48
Alt mode	2	1	1
Vehicular	117	70	47

The distribution of traffic is also expected to be the same as during the peak hour analyses. Using these characteristics, the traffic in the study area intersections generated by the project are shown at the top of the attached Figure 9.

Using all of these characteristics, the anticipated traffic volumes at the two intersections during the school dismissal hour with the traffic generated by the Saltese Apartments are shown on the bottom of Figure 9.

These volumes were used to complete the level of service analysis summarized on the following Table 8.

Table 8 - School Dismissal Hour Level of Service Summary

Condition	Appleway / Corbin		Sprague / Tschirley Road	
	DELAY	LOS	DELAY	LOS
Existing	14.0	B	23.5	C
2028	14.6	B	26.1	D
2028 with Project	14.5	B	29.0	D

The information on Table 8 demonstrates that the two intersections will function within acceptable levels of service during this time period under all three conditions examined. The level of service during this time period is very similar to the p.m. peak hour condition.

Change in Traffic Due to Connection to Morningside / Belleaire

With the changes being made to the latest version of the site plan, the secondary access point, as required for safety concerns by the fire department, is now extending south into the Morningside / Belleaire neighborhood. When this connection is made, the traffic volumes on Tschirley Road will increase substantially. How much this increase will be is very difficult to estimate at the present time. There are a number of factors which must be taken into consideration when evaluating this situation, including:

- The willingness of existing Morningside residents to try a new route, after existing route choices have been established,
- The perceived benefits of the new route over the existing routes, and
- The knowledge that a new route is available.

For many years the only way to access Morningside was from Sullivan Road either at 24th Street or Saltese Road. A few years ago, Chapman Road was connected to Barker Road providing an entirely new way to access the area. Since that time, the traffic volumes on Sullivan have remained constant, while the traffic volumes have grown on Barker Road. Chapman Road has approximately 6,900 vehicles per day on it west of Barker Road. Currently Saltese Road has about 5,700 vehicles per day east of Sullivan Road.

There are approximately 400 lots yet to be developed, most of which are near 8th / Tschirley. These could generate approximately 4,000 trips per day. It is likely that anywhere from one-third to nearly all of these trips will use Tschirley to access the wider transportation system. To estimate travel time and distance between the three routes, Google Maps was used with various destinations put into the map, and the various routes evaluated. This tool established that reaching either of the nearest I-90 interchanges, the Tschirley route will be comparable to the existing routes when comparing both distance and time. Based on this information, it is likely Tschirley will experience 3,500 additional trips per day. If this happens, it should be reclassified as a collector or some other higher classification than a local access street.

A street with this level of traffic volume should have designated pedestrian facilities on it, especially given school children from this area are required to walk to and from Greenacres Middle School. It appears a pedestrian pathway / sidewalk could be constructed on the east side of Tschirley for most of the distance. This may need to be augmented with a painted walkway on the street for some parts.

The intersection of Sprague / Tschirley experiences the lowest level of service during the p.m. peak hour. Assuming 10% of the additional daily traffic volumes occur during the p.m. peak hour, as is typical, the anticipated ultimate traffic volumes added to the traffic volumes anticipated in 2028 with the Saltese Apts, and all other known sources of traffic are shown on Figure 10. Using the traffic volumes at the bottom of Figure 10 and assuming the same distribution of traffic using Tschirley and Flora as for the apartment complex, the level of service at the two intersections most likely to be affected by the increase in traffic are shown on Table 9 as follows.

Table 9 - Level of Service Summary with Hypothetical Maximum Traffic

INTERSECTION	2028 w/ Everything	
	P.M.	
	DELAY	LOS
Sprague / Tschirley	52.4	F
Sprague / Flora*	27.8	C

* Signalized Intersection - others two-way, stop-controlled

It is clear Sprague / Flora will be able to accommodate the additional traffic. However, Sprague / Tschirley may be functioning at LOS F. This is a hypothetical situation given a number of assumptions which should be verified in the field. Items which may prevent this intersection from falling into LOS F include: more traffic using Flora, Chapman or Saltese than estimated, a change in the procedures used to calculate level of service, a decrease in p.m. peak hour traffic volumes as generated by single family homes and undoubtedly other factors.

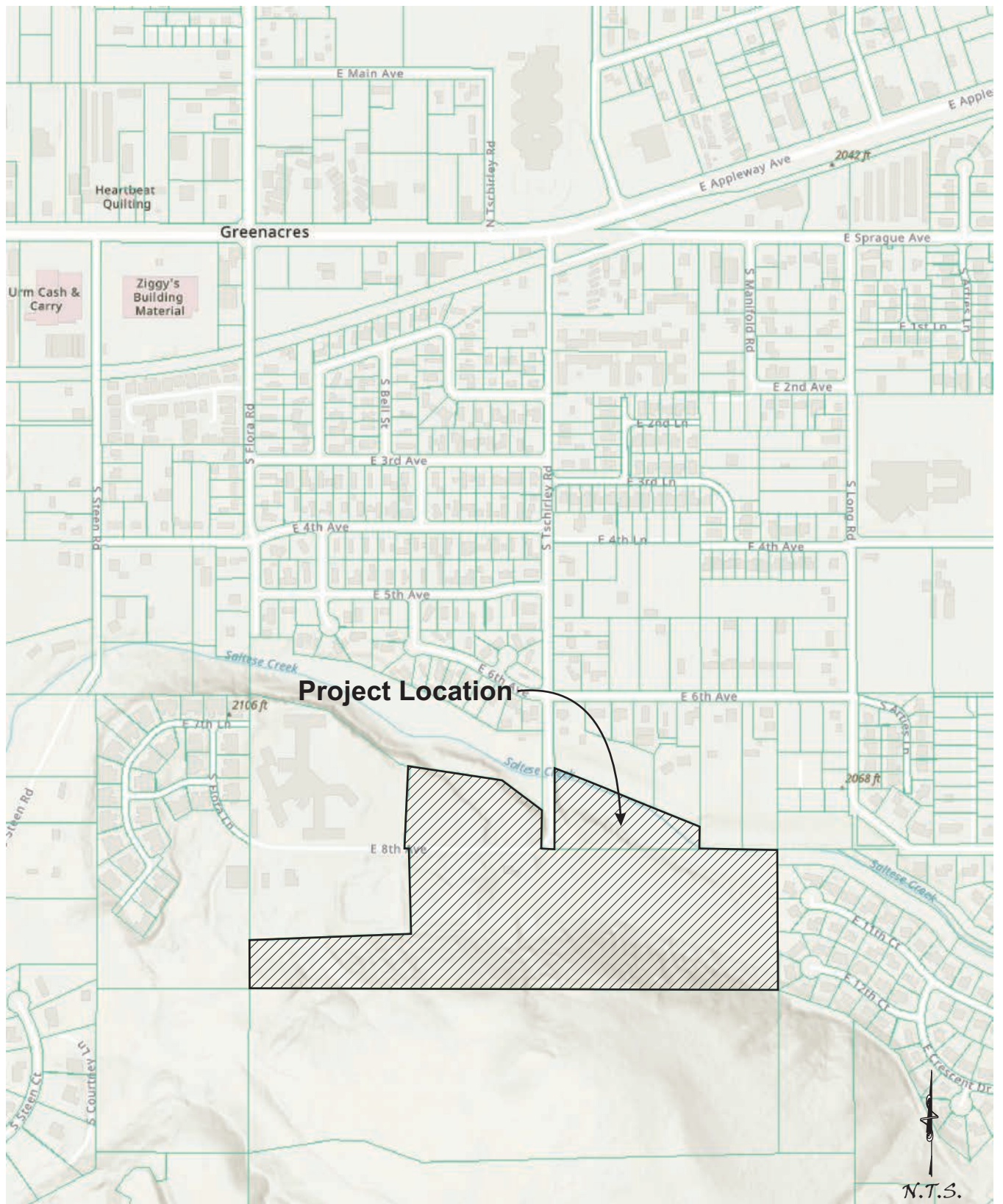
Impact Summary and Recommendations

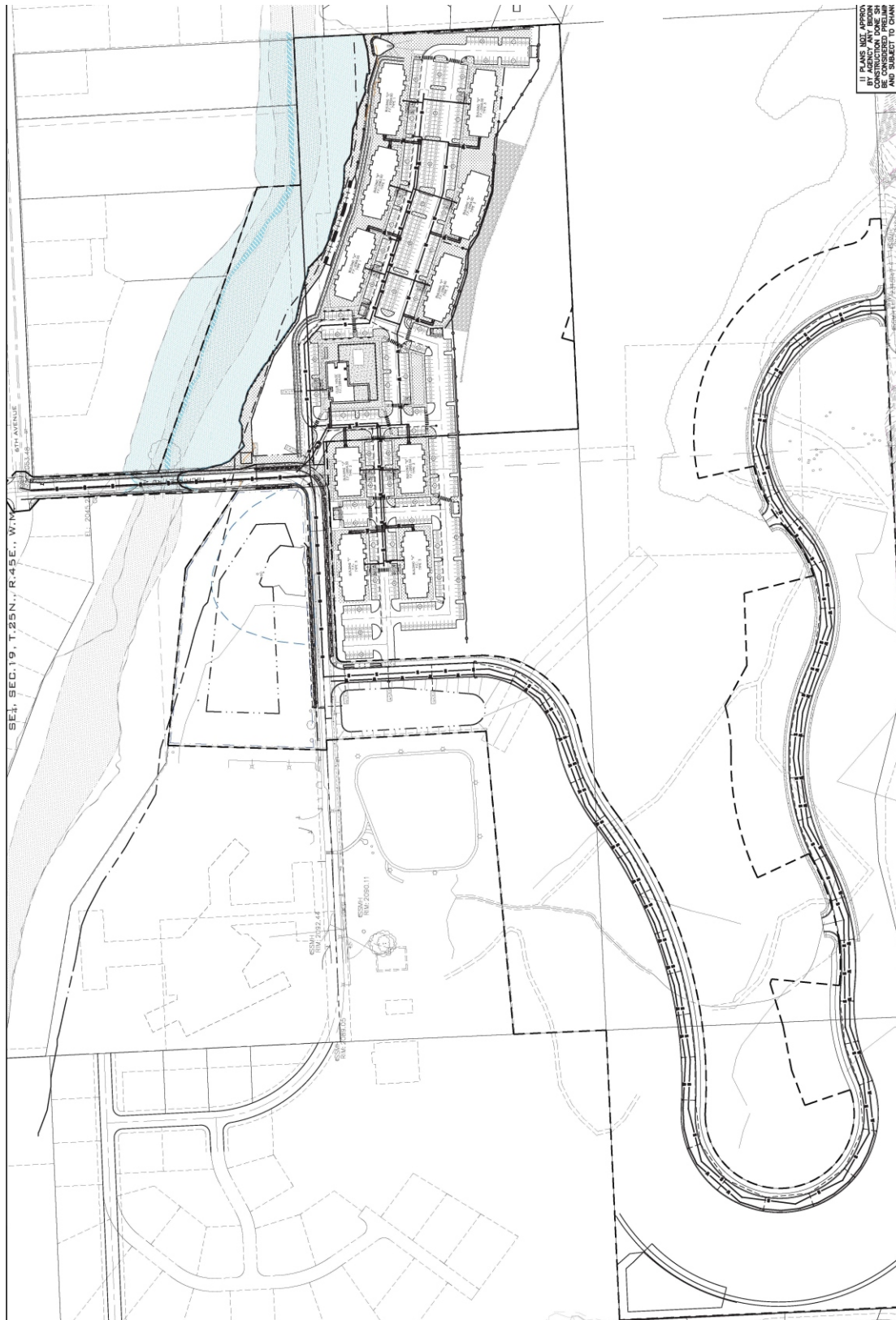
The increase in traffic generated by the Saltese Apartments does not adversely impact the level of service at any of the intersections in the study area. Therefore, the recommendation for this project is for frontage improvements and payment of the South Barker Road Transportation Impact Fee of \$713.00 per multi-family unit.

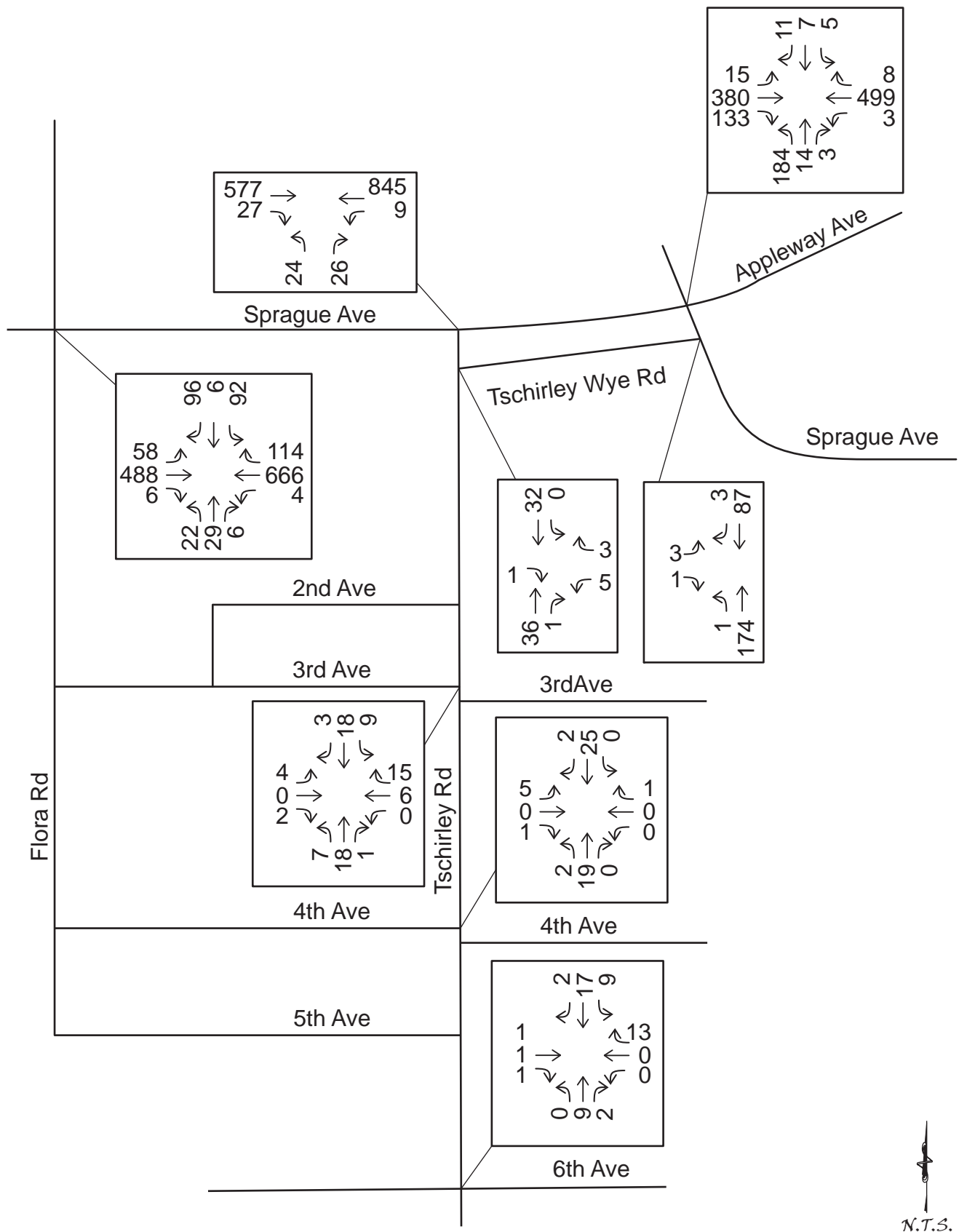
A detailed review of the grading plan during preparation of the civil plan to ensure that adequate sight distance is met. Without the removal of the rocky outcropping at the northwest corner of Tschirley / 8th, and/or relocation of the access points, the sight distance criteria cannot be met, especially for the apartments on the north side of 8th Avenue.

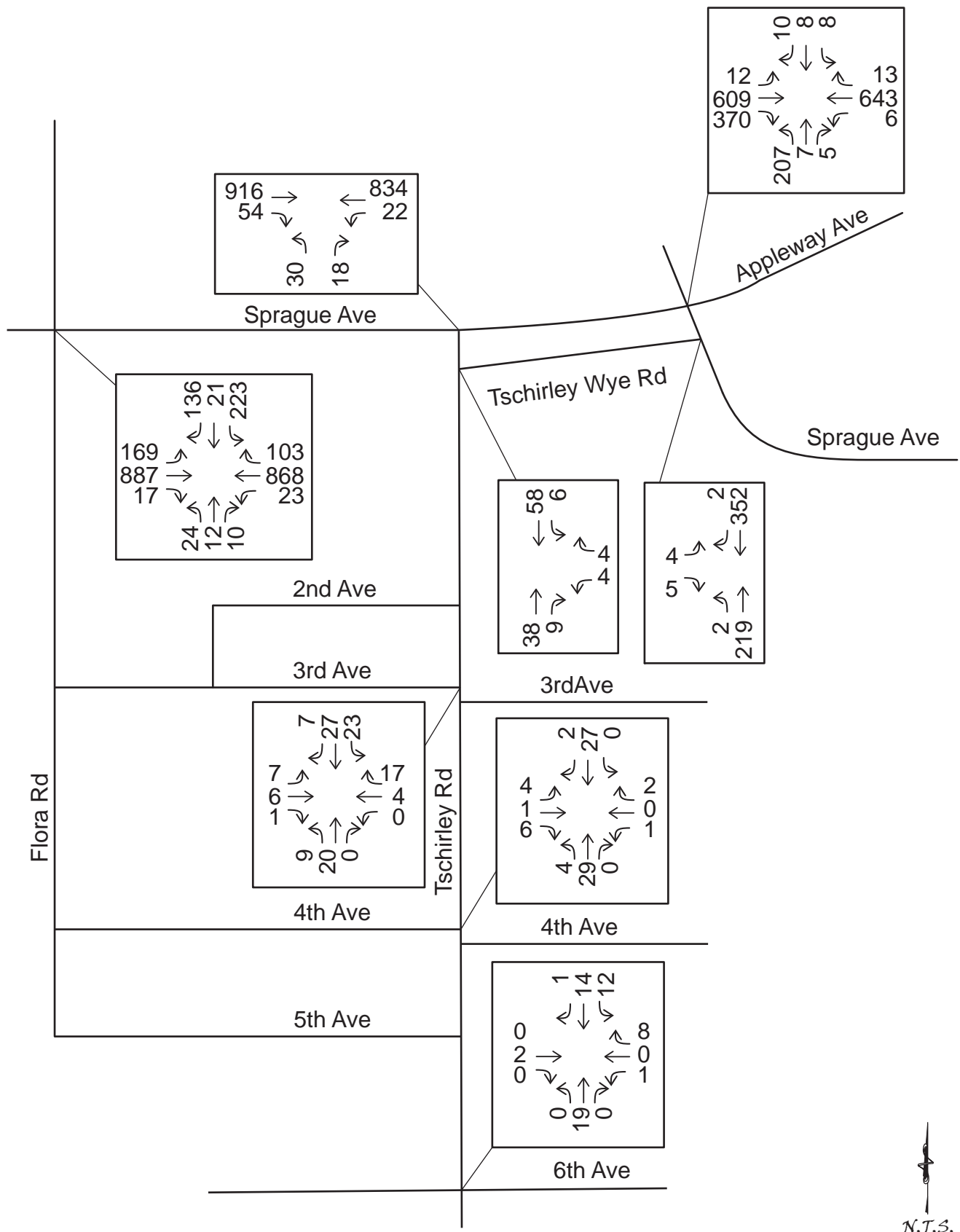
TECHNICAL APPENDIX

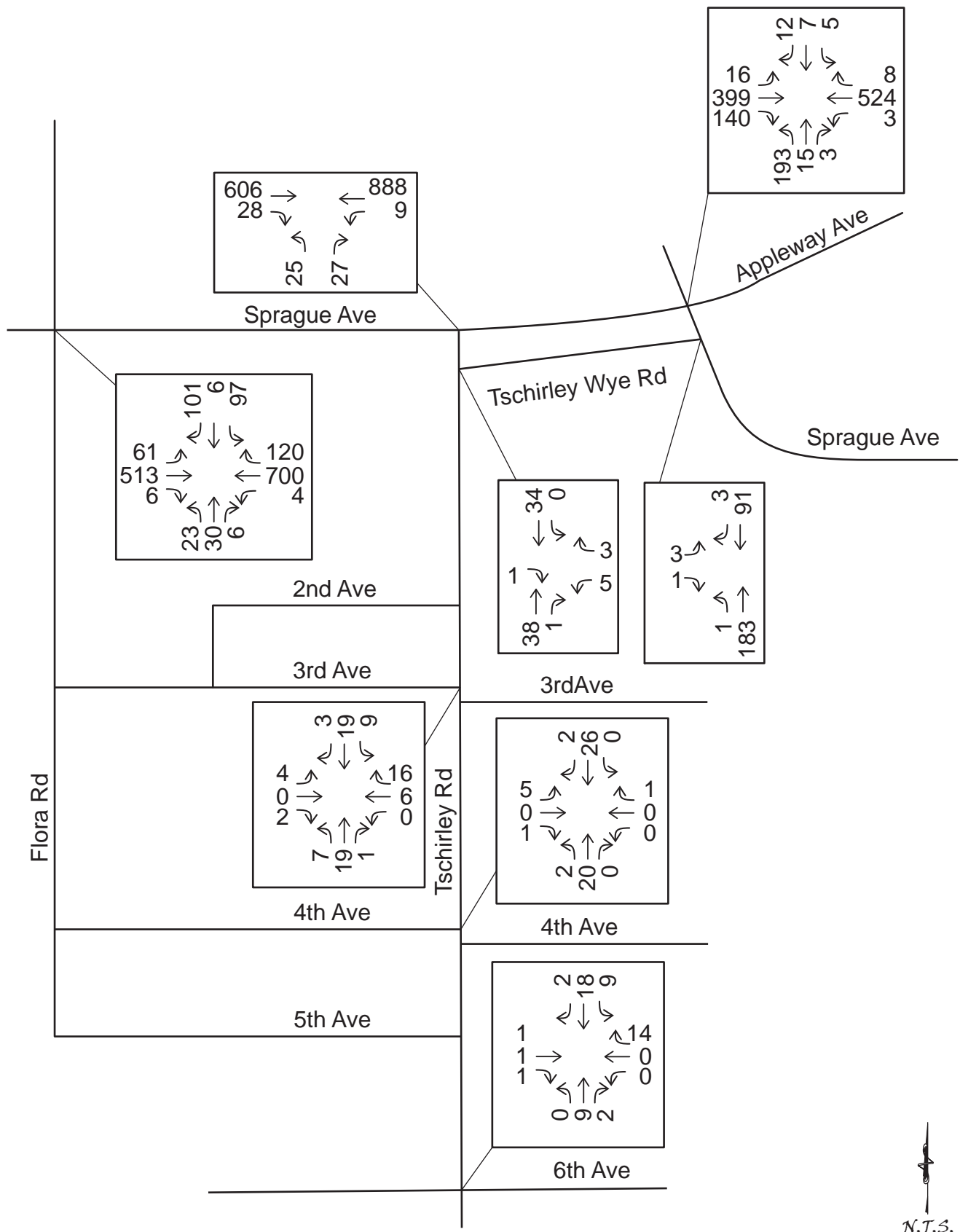
TRAFFIC FIGURES

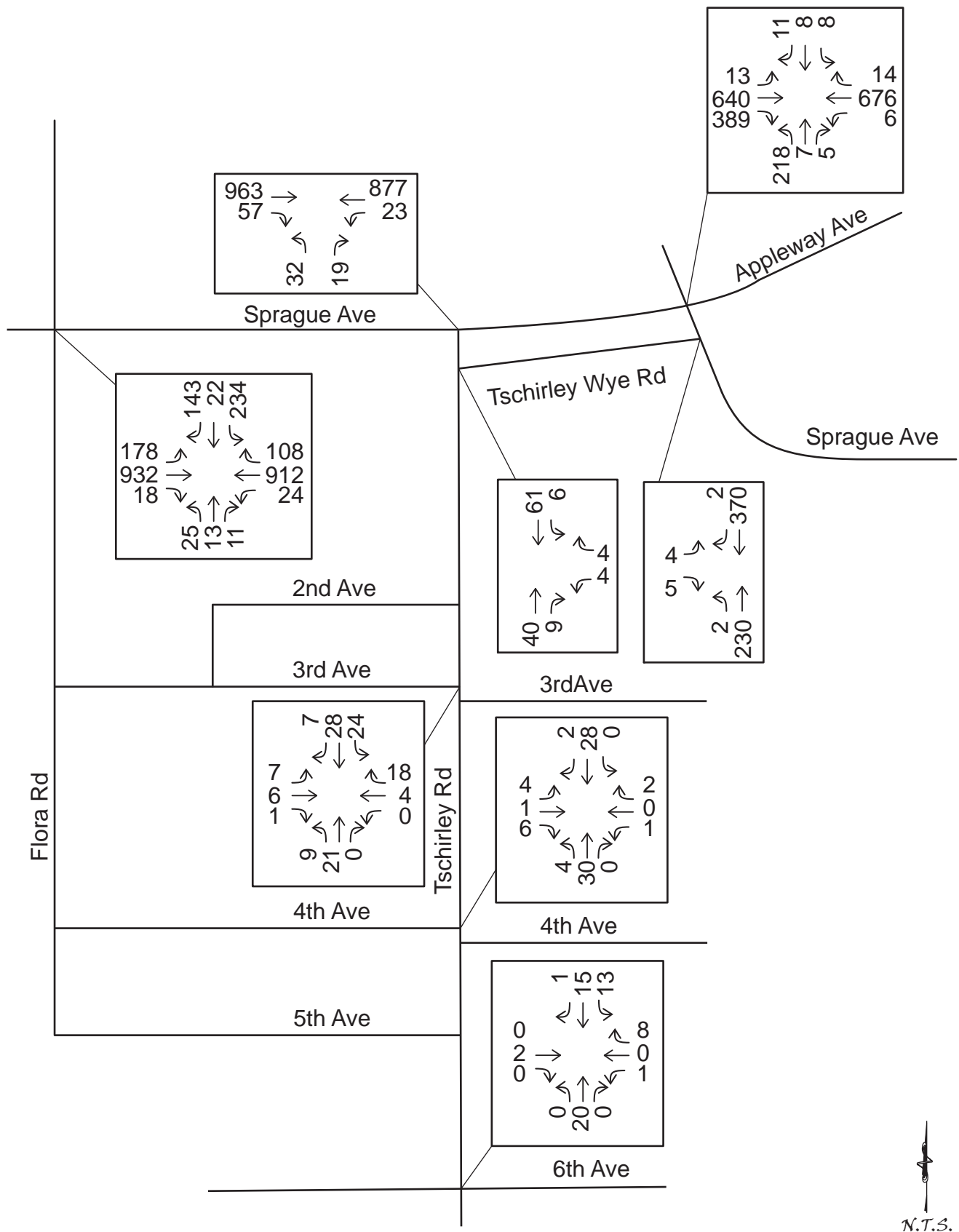


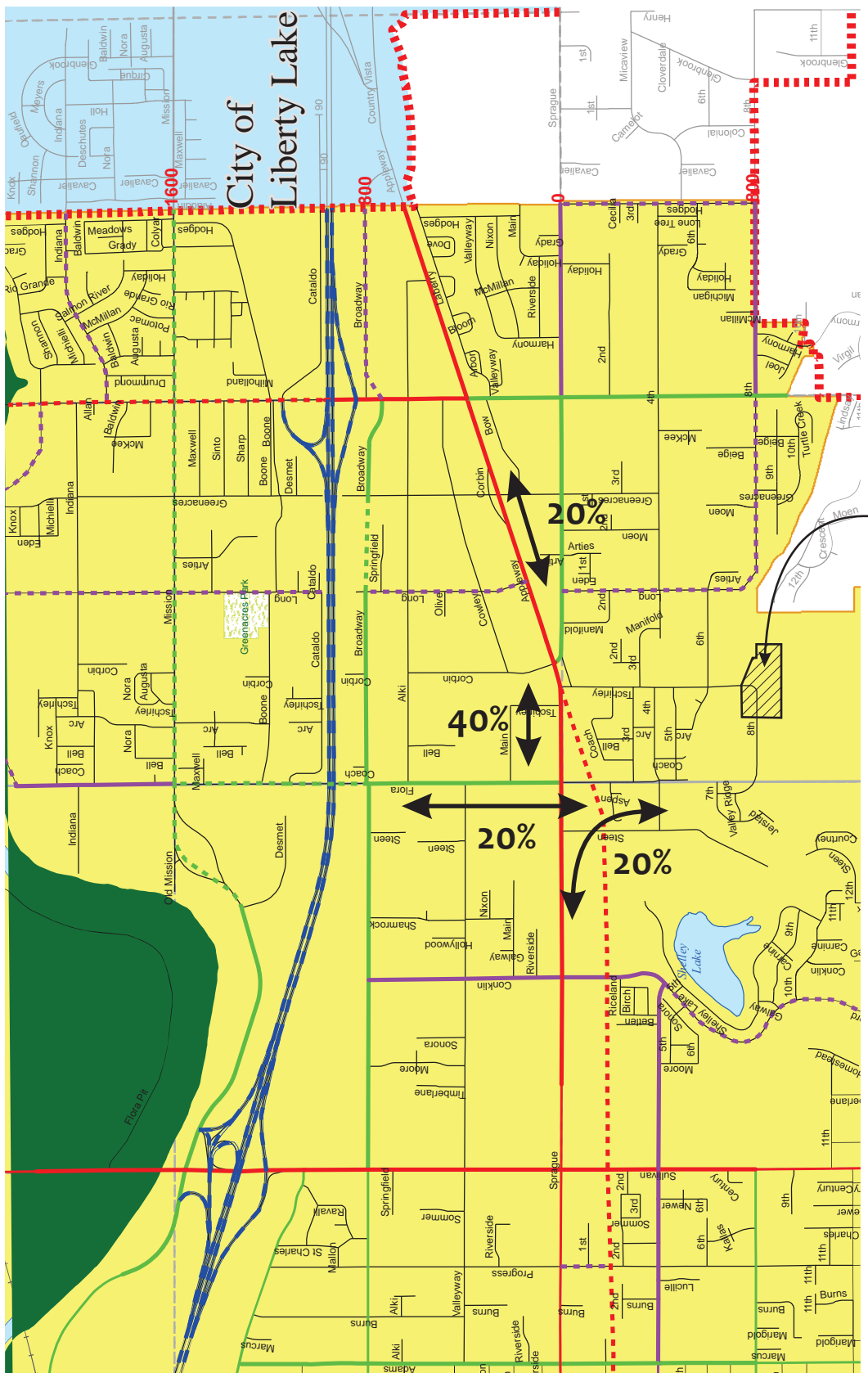




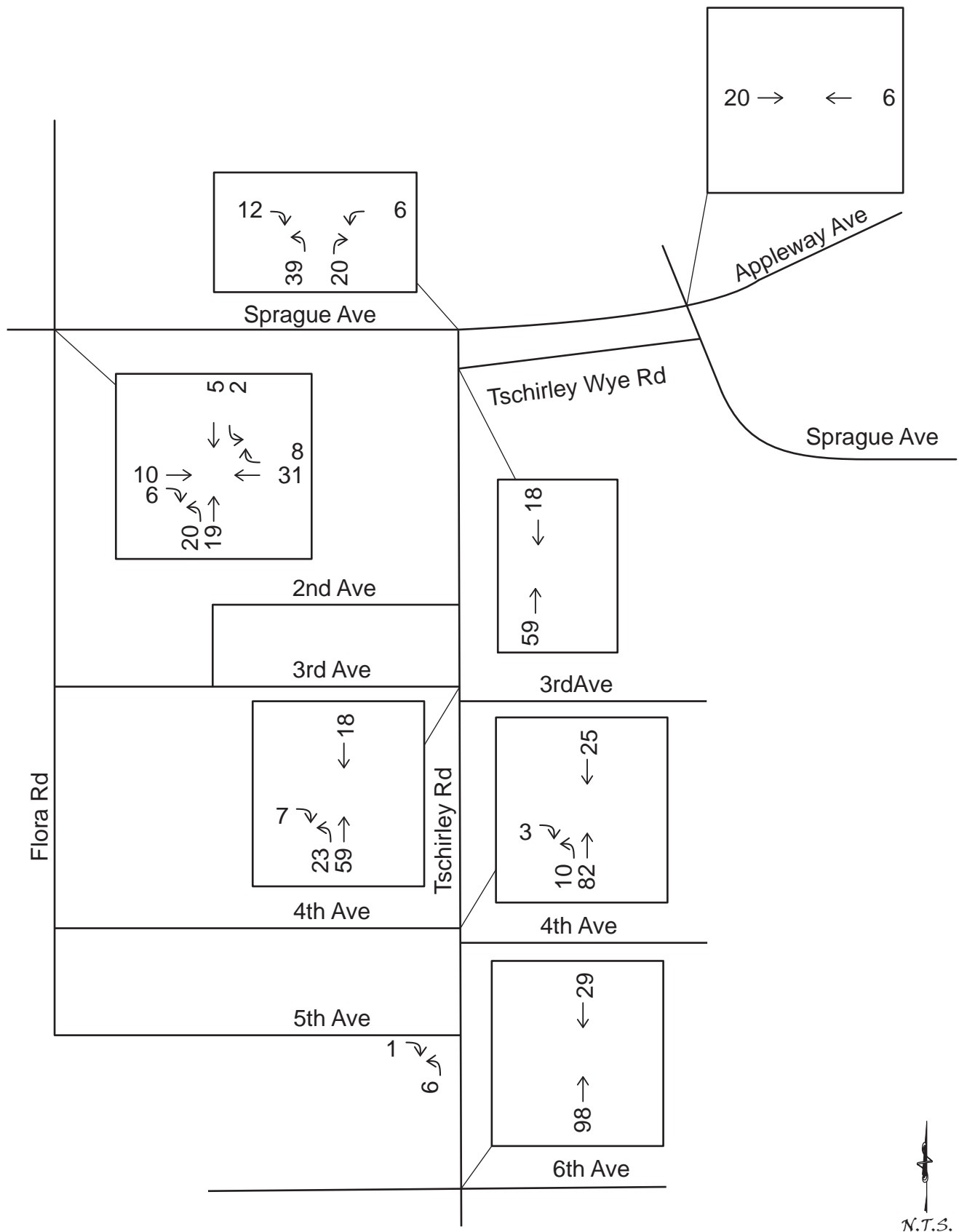


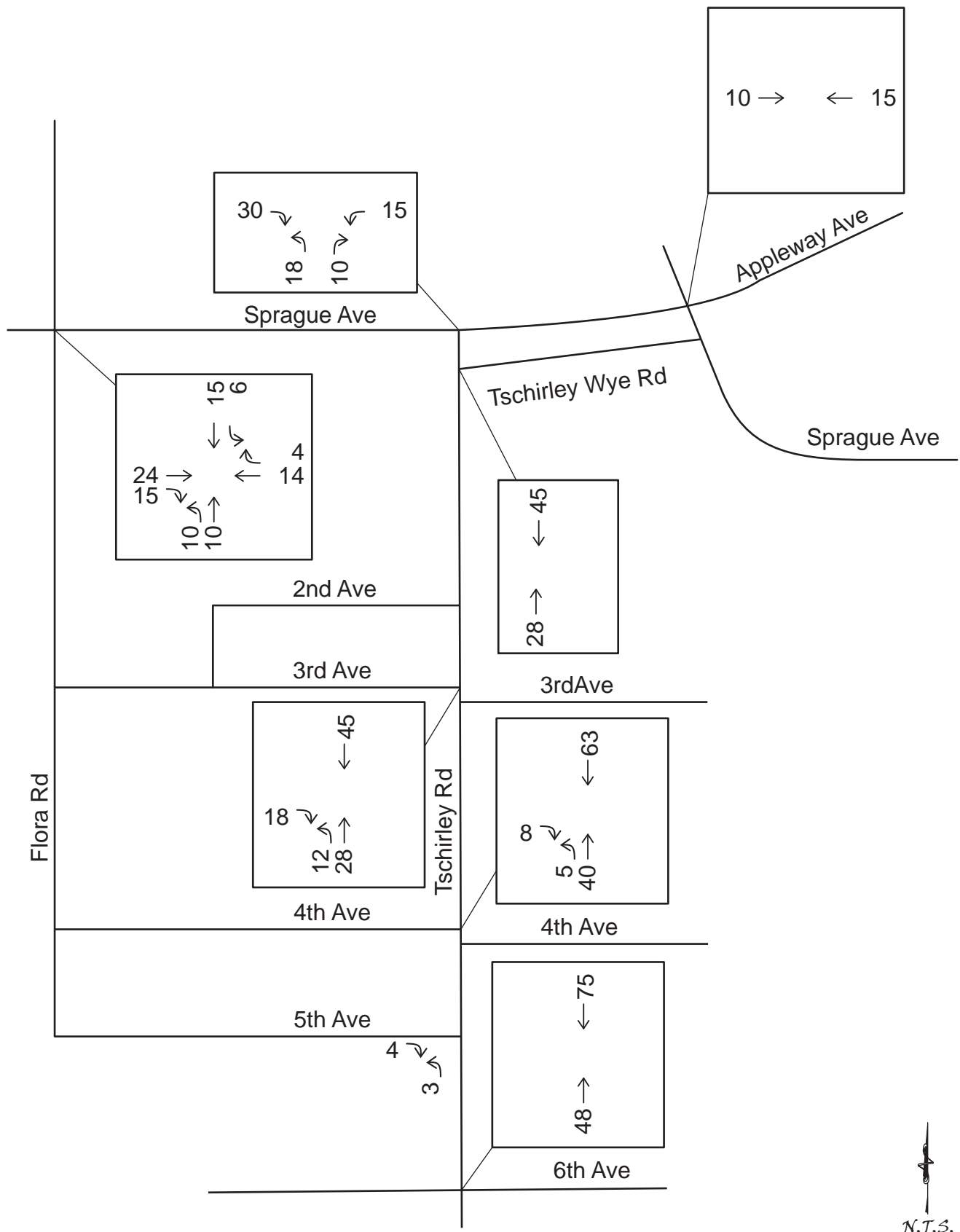


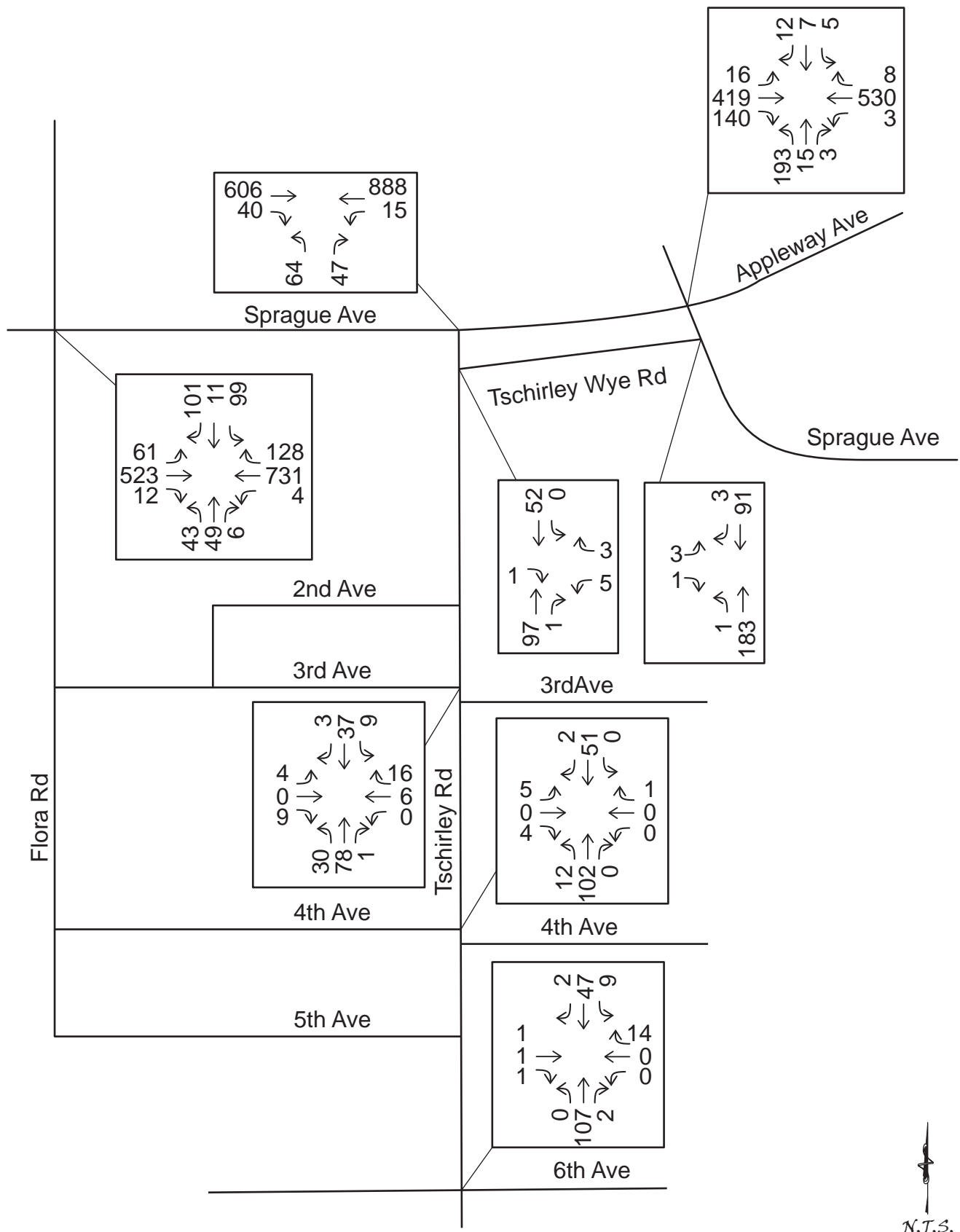


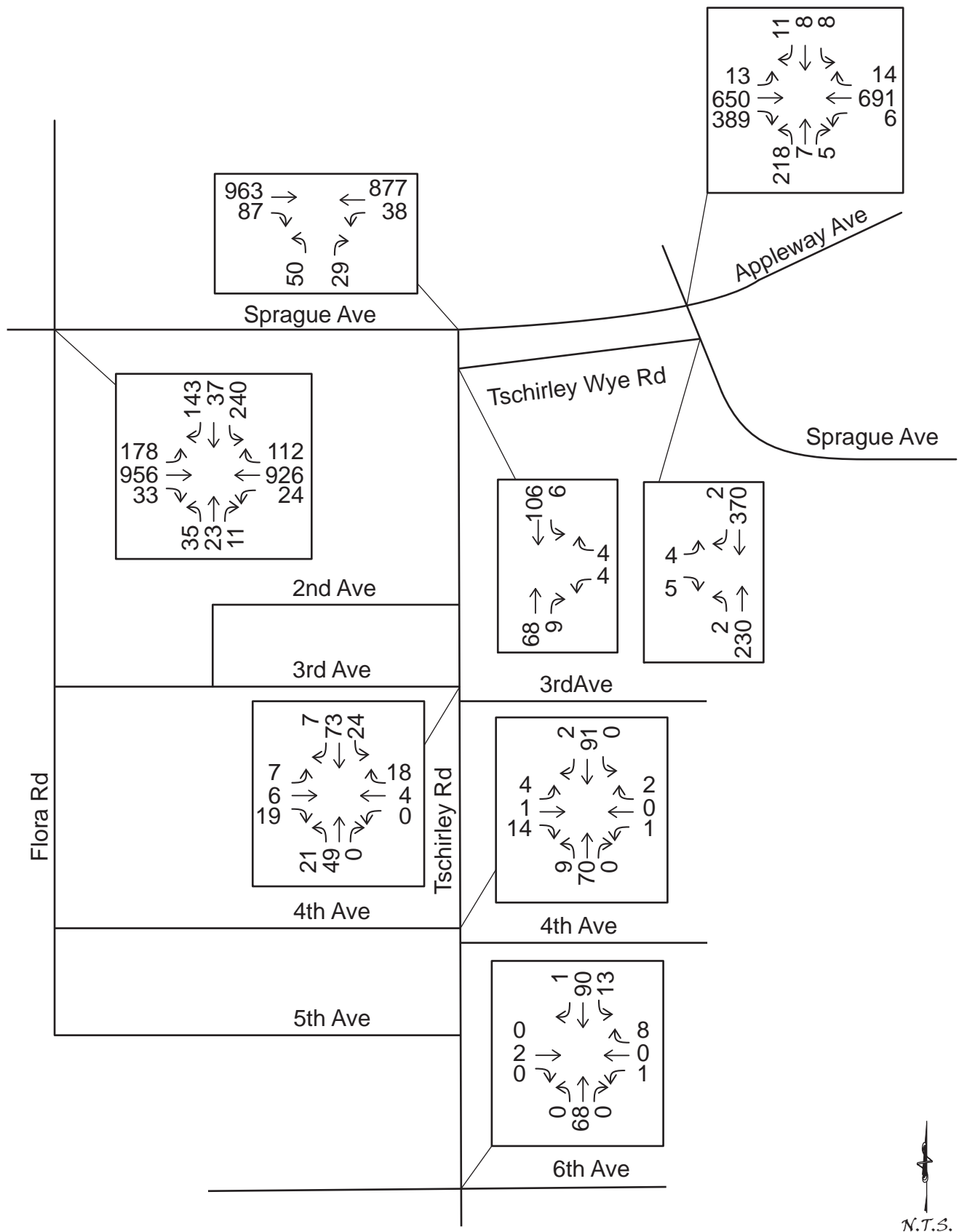


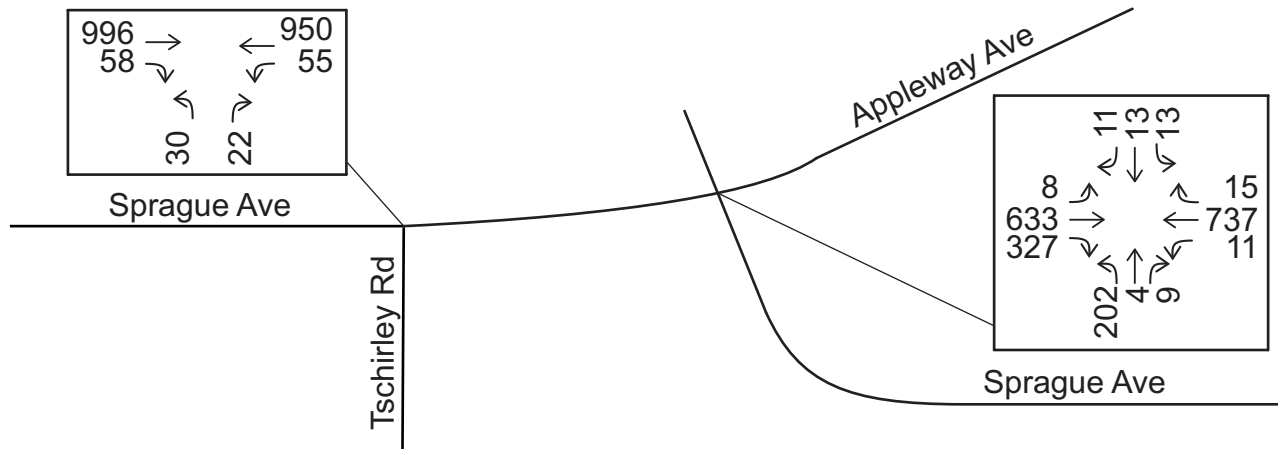
**Project
Location**



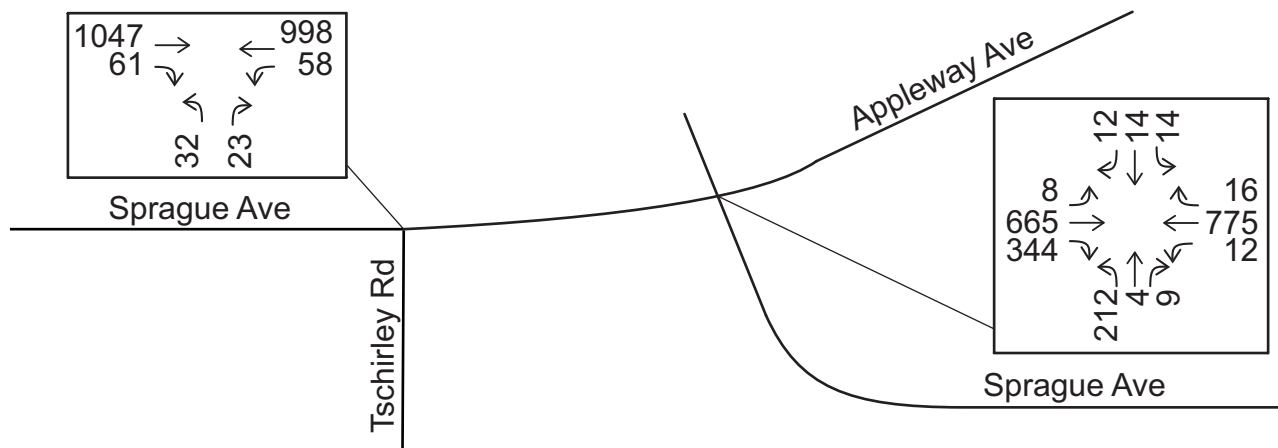






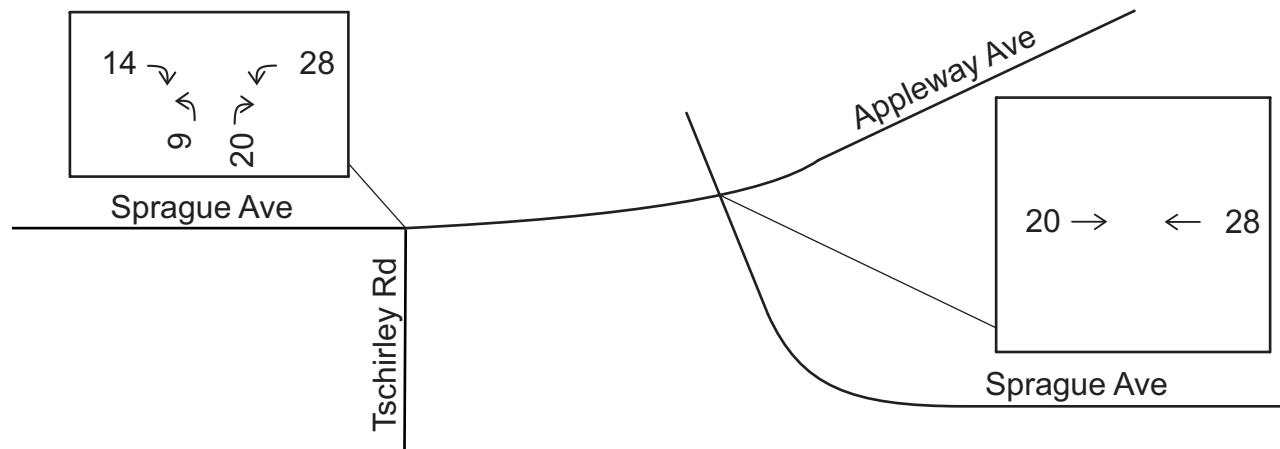


Existing

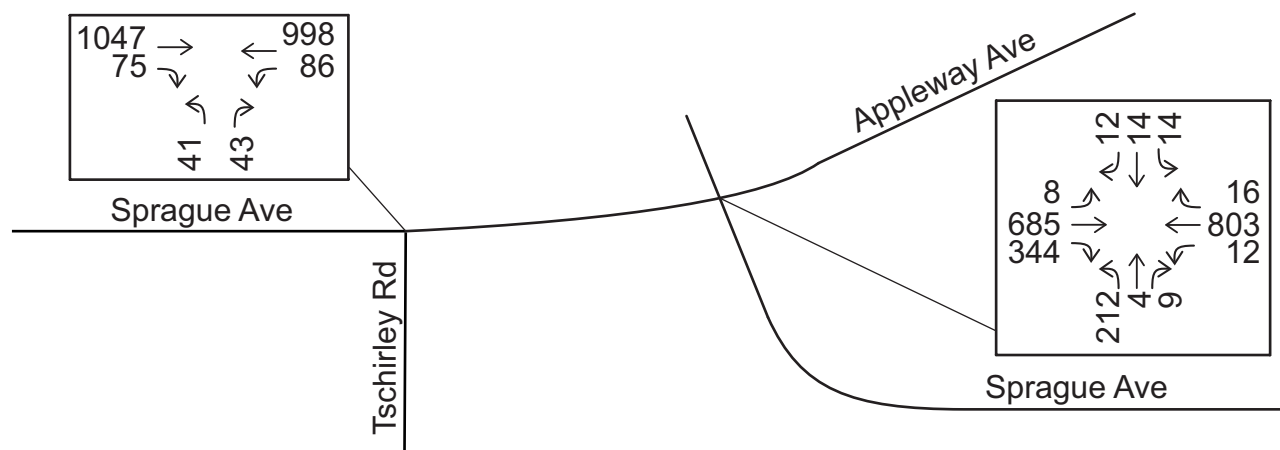


2028



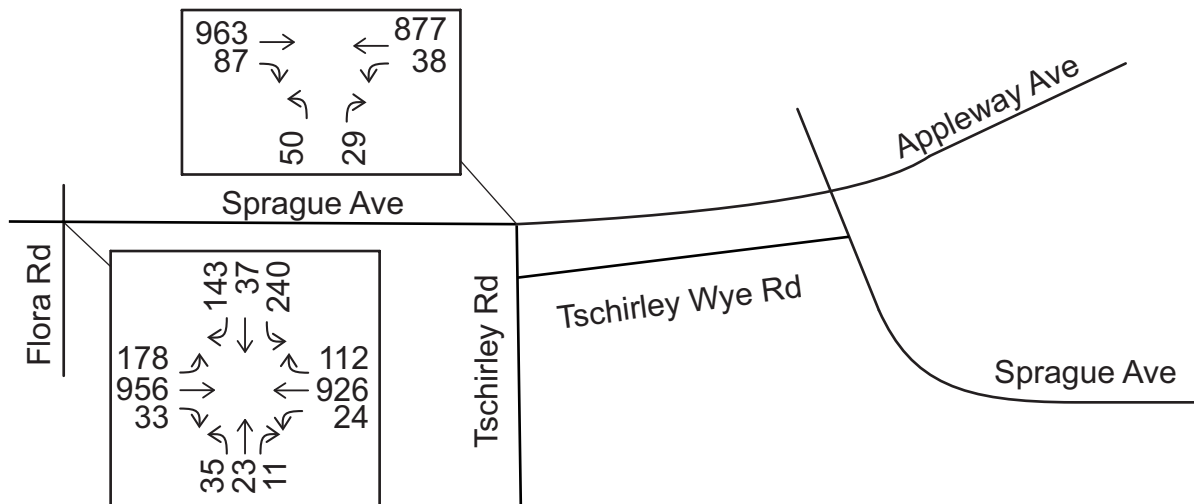


Site Generated

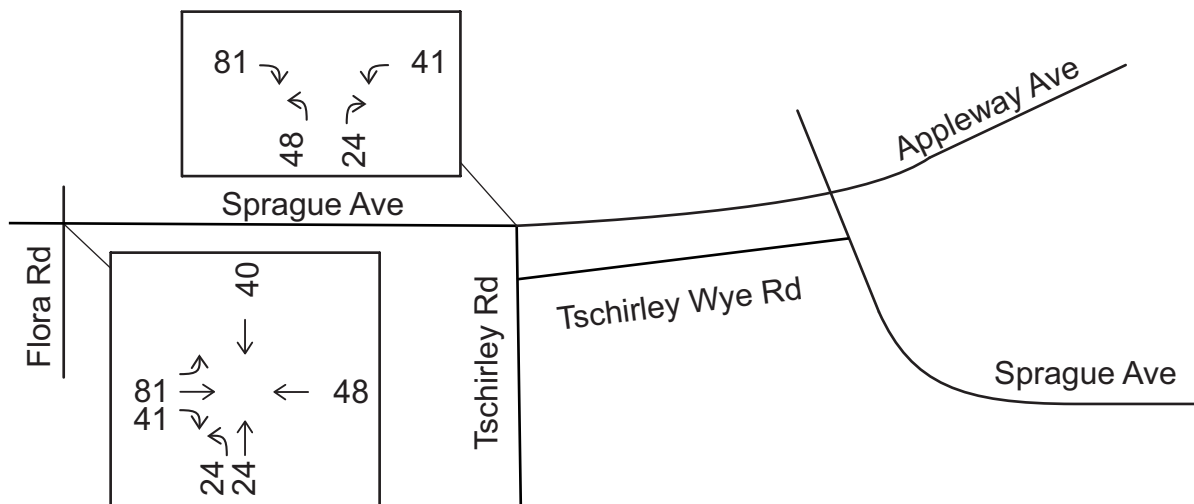


2028 with Project

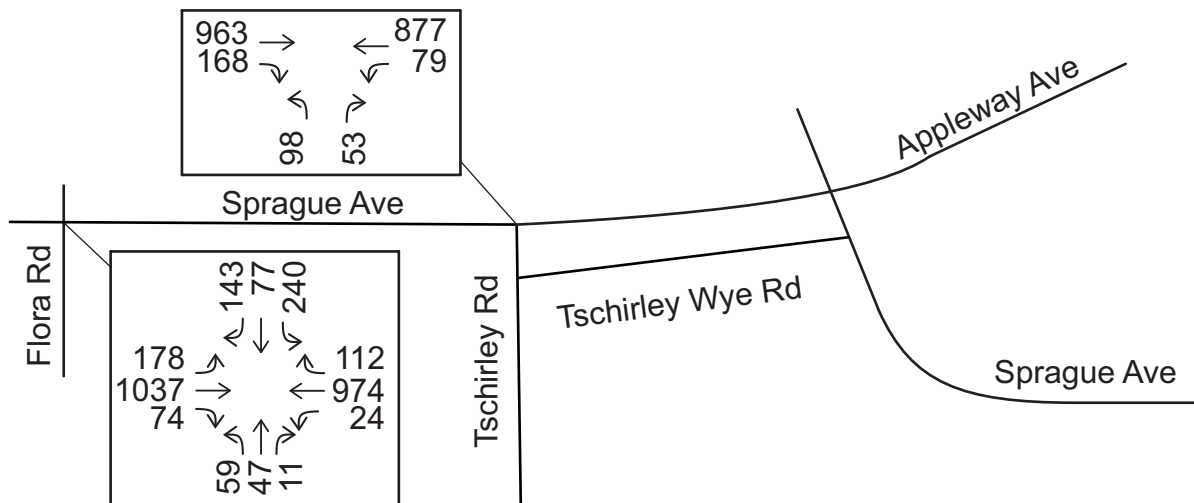




P.M. Peak Including to Saltese Apartments



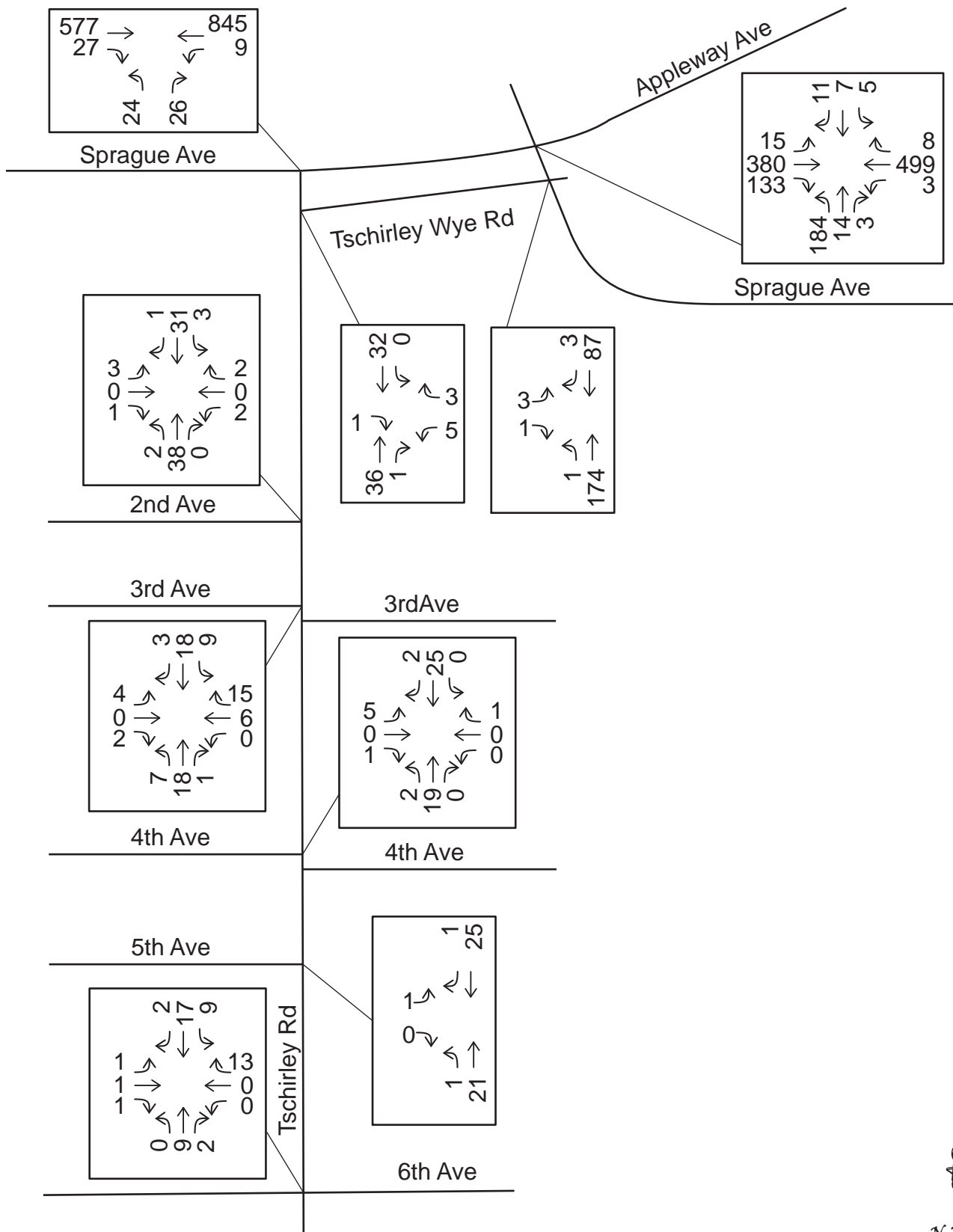
Potential Additional P.M. Peak Hour Traffic Volumes



Hypothetical Maximum P.M. Peak Hour Traffic Volumes N.T.S.

TECHNICAL APPENDIX

AM PEAK HOUR TRAFFIC COUNTS



PROJECT: Tschirley Road
 JOB NO. 2220
 INTERSECTION: Appleway / Sprague / Corbin

DATE OF COUNT: 11/17/22

TRAFFIC COUNT REDUCTION WORKSHEET AM PEAK HOUR

		15 Minute Period Beginning @															
APPROACH	MOVEMENT	7:00		7:15		7:30		7:45		8:00		8:15		8:30		8:45	
		pass	trk	pass	trk	pass	trk	pass	trk	pass	trk	pass	trk	pass	trk	pass	trk
Eastbound	Left	9		16		1		2		2		2		6		5	
	Through	58		72		84		118		101		72		89		118	
	Right	11		15		15		31		26		29		26		52	
	App. Total	78	0	103	0	100	0	151	0	129	0	103	0	121	0	175	0
	Pct Trucks		0%		0%		0%		0%		0%		0%		0%		0%
Westbound	Left	1		1		1		1		0		1		2		0	
	Through	56		91		101		107		133		119		99		148	
	Right	5		7		2		1		3		1		0		4	
	App. Total	62	0	99	0	104	0	109	0	136	0	121	0	101	0	152	0
	Pct Trucks		0%		0%		0%		0%		0%		0%		0%		0%
Northbound	Left	42		50		60		72		48		36		34		66	
	Through	2		0		0		1		0		0		1		13	
	Right	1		0		0		1		0		1		2		0	
	App. Total	45	0	50	0	60	0	74	0	48	0	37	0	37	0	79	0
	Pct Trucks		0%		0%		0%		0%		0%		0%		0%		0%
Southbound	Left	0		0		2		1		1		0		2		2	
	Through									1		1		1		4	
	Right	3		2		1		4		2		4		2		3	
	App. Total	3	0	2	0	3	0	5	0	4	0	5	0	5	0	9	0
	Pct Trucks		0%		0%		0%		0%		0%		0%		0%		0%
Total Intersection Volume		188	0	254	0	267	0	339	0	317	0	266	0	264	0	415	0
Intersection Pct Trucks			0%		0%		0%		0%		0%		0%		0%		0%

Intersection Total One Hour Volumes		Pct Trucks
7:00	1048	0.00%
7:15	1177	0.00%
7:30	1189	0.00%
7:45	1186	0.00%
8:00	1262	0.00%

PROJECT: Tschirley Road

JOB NO. 2220

INTERSECTION: Appleway / Sprague / Corbin

DATE OF COUNT: 11/17/22

AM PEAK HOUR BREAKDOWN

APPROACH	MOVEMENT	8:00		8:15		8:30		8:45		TOTAL
		pass	trk	pass	trk	pass	trk	pass	trk	
Eastbound	Left	2		2		6		5		15
	Through	101		72		89		118		380
	Right	26		29		26		52		133
		129	0	103	0	121	0	175	0	528
	Pct Trucks		0%		0%		0%		0%	0%
Westbound	Left	0		1		2		0		3
	Through	133		119		99		148		499
	Right	3		1		0		4		8
	App. Total	136	0	121	0	101	0	152	0	510
	Pct Trucks		0%		0%		0%		0%	0%
Northbound	Left	48		36		34		66		184
	Through	0		0		1		13		14
	Right	0		1		2		0		3
	App. Total	48	0	37	0	37	0	79	0	201
	Pct Trucks		0%		0%		0%		0%	0%
Southbound	Left	1		0		2		2		5
	Through	1		1		1		4		7
	Right	2		4		2		3		11
	App. Total	4	0	5	0	5	0	9	0	23
	Pct Trucks		0%		0%		0%		0%	0%
Total Intersection Volume		317	0	266	0	264	0	415	0	1262
Intersection Pct Trucks			0%		0%		0%		0%	

P.H.F. 0.76

Total vehicle traffic

[illegible]

Car traffic

[illegible]

Truck traffic

[illegible]

Pedestrian volumes

[illegible]

Intersection Peak Hour

08:00 - 09:00

	SouthBound			Westbound			Northbound			Eastbound			Total
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
Vehicle Total	0	87	3	0	0	0	1	174	0	3	0	1	269
Factor	0.00	0.81	0.38	0.00	0.00	0.00	0.25	0.95	0.00	0.38	0.00	0.25	0.96
Approach Factor	0.83			0.00			0.95			0.50			

Peak Hour Vehicle Summary

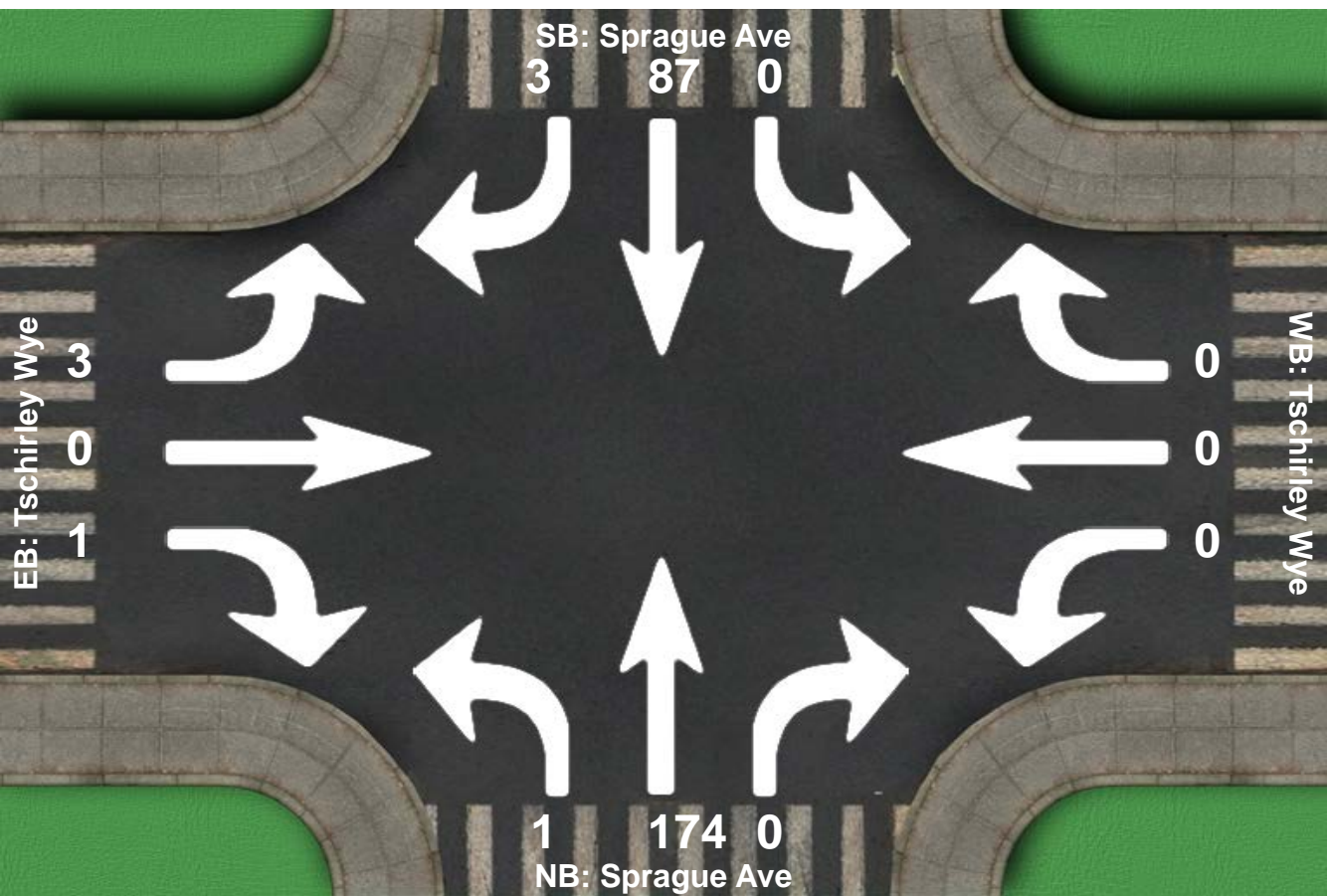
[illegible]

Peak Hour Pedestrians

[illegible]

Intersection Peak Hour

Location: Sprague Ave at Tschirley Wye, Spokane Valley, WA
GPS Coordinates: Lat=47.656925, Lon=-117.168740
Date: 2023-04-04
Day of week: Tuesday
Weather: Overcast
Analyst: ALW



Intersection Peak Hour

08:00 - 09:00

	SouthBound			Westbound			Northbound			Eastbound			Total
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
Vehicle Total	0	87	3	0	0	0	1	174	0	3	0	1	269
Factor	0.00	0.81	0.38	0.00	0.00	0.00	0.25	0.95	0.00	0.38	0.00	0.25	0.96
Approach Factor	0.83			0.00			0.95			0.50			

Total vehicle traffic

Car traffic

Truck traffic

Pedestrian volumes

[illegible]

Intersection Peak Hour

07:15 - 08:15

	SouthBound			Westbound			Northbound			Eastbound			Total
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
Vehicle Total	0	0	0	9	844	1	24	0	26	0	577	27	1508
Factor	0.00	0.00	0.00	0.56	0.81	0.25	0.86	0.00	0.93	0.00	0.87	0.75	0.83
Approach Factor	0.00			0.81			0.96			0.86			

Peak Hour Vehicle Summary

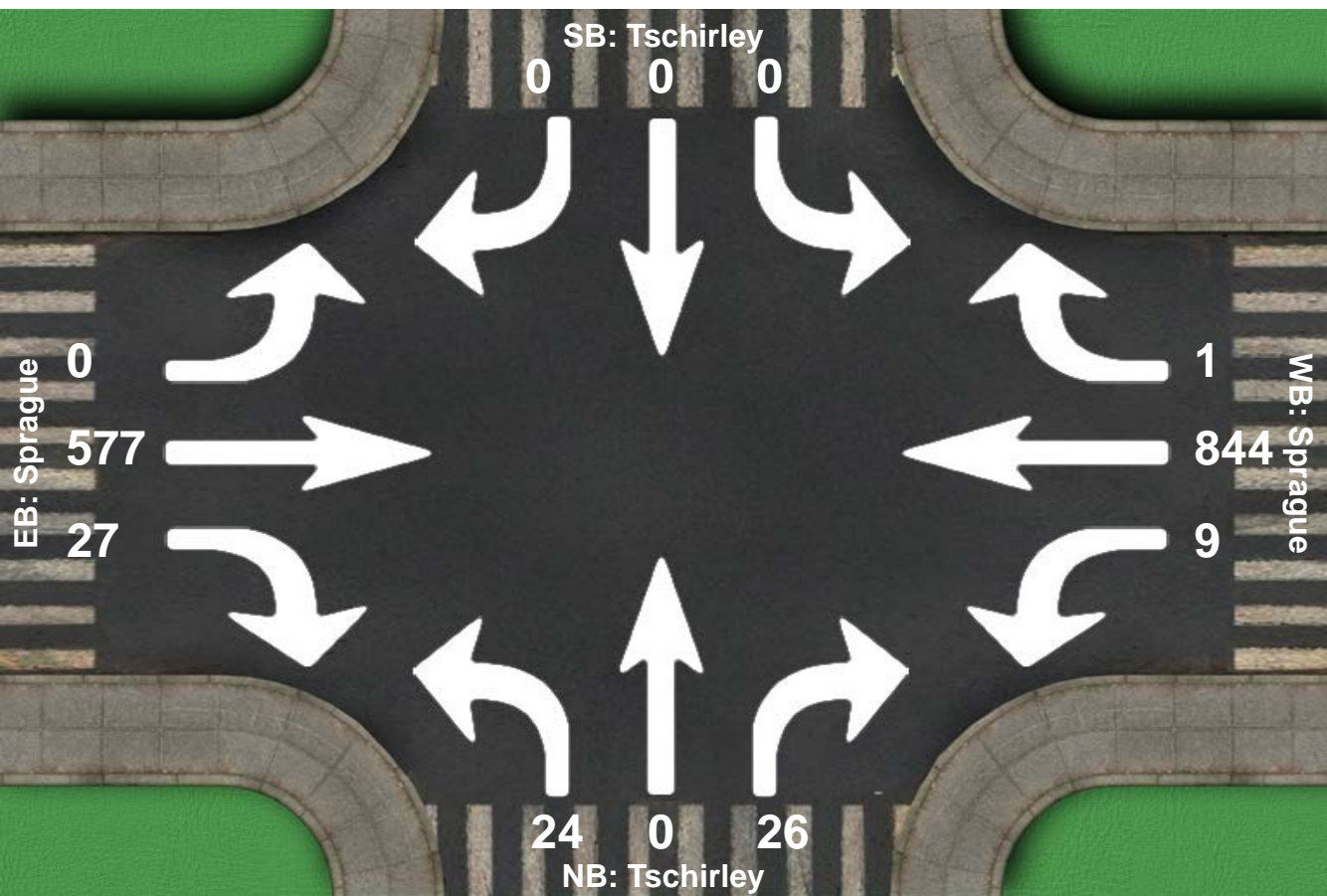
Vehicle	SouthBound			Westbound			Northbound			Eastbound			Total
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
Car	0	0	0	9	833	1	24	0	26	0	570	26	1489
Truck	0	0	0	0	11	0	0	0	0	0	7	1	19

Peak Hour Pedestrians

	NE			NW			SW			SE			Total
	Left	Right	Total	Left	Right	Total	Left	Right	Total	Left	Right	Total	
Pedestrians	0	0	0	0	0	0	0	0	0	2	0	2	2

Intersection Peak Hour

Location: Tschirley at Sprague, Spokane Valley, Wa
GPS Coordinates: Lat=47.660319, Lon=-117.183362
Date: 2022-11-16
Day of week: Wednesday
Weather: Low Clouds
Analyst: ALW



Intersection Peak Hour

07:15 - 08:15

	SouthBound			Westbound			Northbound			Eastbound			Total
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
Vehicle Total	0	0	0	9	844	1	24	0	26	0	577	27	1508
Factor	0.00	0.00	0.00	0.56	0.81	0.25	0.86	0.00	0.93	0.00	0.87	0.75	0.83
Approach Factor	0.00			0.81			0.96			0.86			

Intersection Peak Hour

07:30 - 08:30

	SouthBound			Westbound			Northbound			Eastbound			Total
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
Vehicle Total	0	32	0	5	0	3	0	36	1	0	0	1	78
Factor	0.00	0.67	0.00	0.42	0.00	0.75	0.00	0.90	0.25	0.00	0.00	0.25	0.85
Approach Factor	0.67			0.67			0.93			0.25			

Peak Hour Vehicle Summary

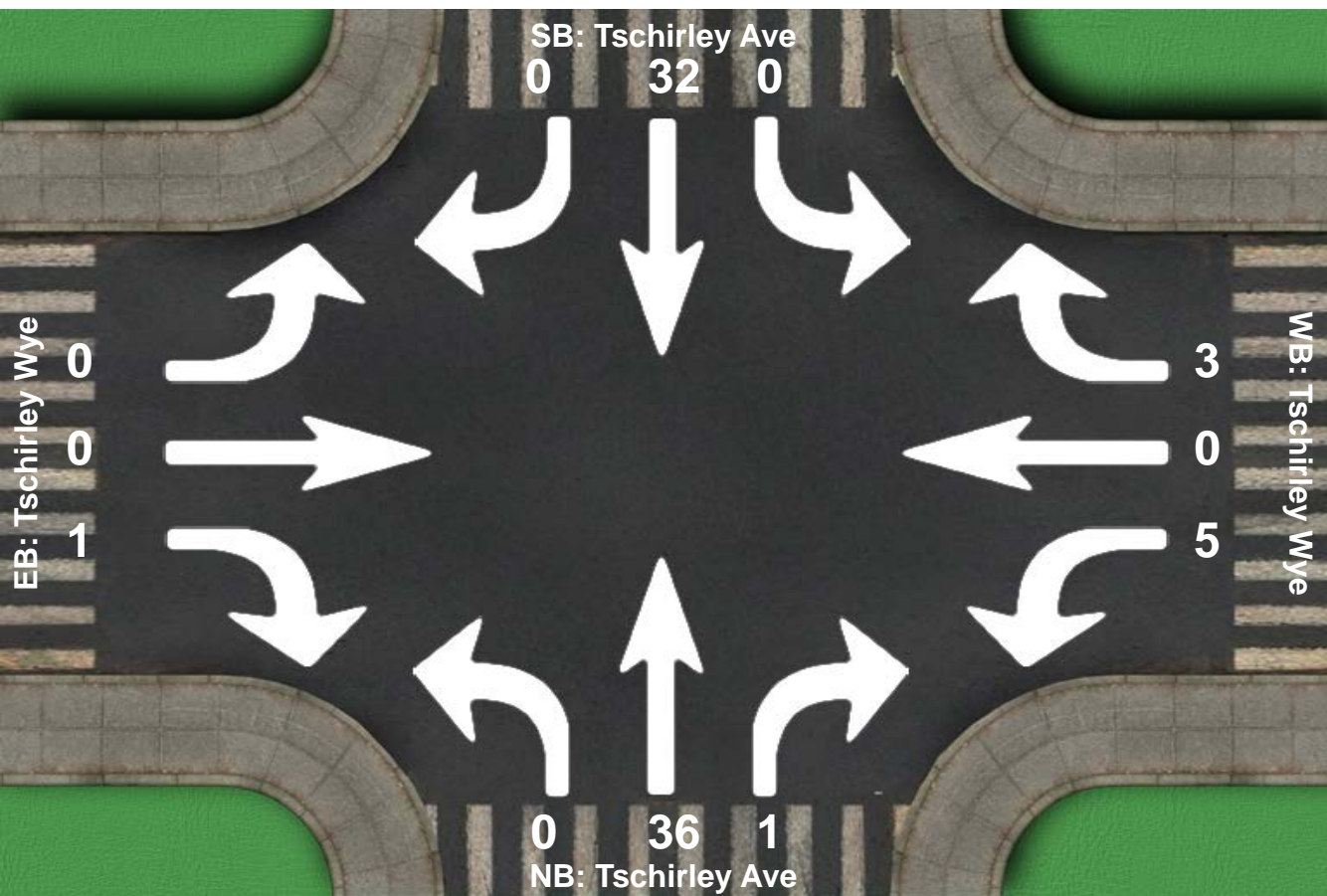
Vehicle	SouthBound			Westbound			Northbound			Eastbound			Total
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
Car	0	31	0	5	0	3	0	35	1	0	0	1	76
Truck	0	1	0	0	0	0	0	1	0	0	0	0	2

Peak Hour Pedestrians

	NE			NW			SW			SE			Total
	Left	Right	Total	Left	Right	Total	Left	Right	Total	Left	Right	Total	
Pedestrians	0	0	0	0	0	0	1	0	1	0	0	0	1

Intersection Peak Hour

Location: Tschirley Ave at Tschirley Wye, Spokane Valley, WA
GPS Coordinates: Lat=47.656754, Lon=-117.168811
Date: 2023-04-05
Day of week: Wednesday
Weather: Sunny
Analyst: ALW



Intersection Peak Hour

07:30 - 08:30

	SouthBound			Westbound			Northbound			Eastbound			Total
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
Vehicle Total	0	32	0	5	0	3	0	36	1	0	0	1	78
Factor	0.00	0.67	0.00	0.42	0.00	0.75	0.00	0.90	0.25	0.00	0.00	0.25	0.85
Approach Factor	0.67			0.67			0.93			0.25			

Turn Count Summary

Location: Tschirley Rd at 2nd Ave / Apt Dwy, Spokane Valley, WA
GPS Coordinates: Lat=47.654533, Lon=-117.169545
Date: 2023-03-30
Day of week: Thursday
Weather: Overcast
Analyst: ALW

Total vehicle traffic

Interval starts	SouthBound			Westbound			Northbound			Eastbound			Total
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
07:00	0	1	0	0	0	0	0	10	0	1	0	0	12
07:15	0	9	0	0	0	1	1	16	0	0	0	1	28
07:30	1	5	0	1	0	0	0	7	0	1	0	0	15
07:45	1	8	0	0	0	0	1	8	0	1	0	0	19
08:00	1	9	1	1	0	1	0	7	0	1	0	0	21
08:15	0	6	0	0	0	2	0	7	0	0	0	0	15
08:30	3	8	0	0	0	0	1	8	0	1	0	1	22
08:45	0	5	3	0	0	0	0	9	0	2	0	0	19

Car traffic

Interval starts	SouthBound			Westbound			Northbound			Eastbound			Total
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
07:00	0	1	0	0	0	0	0	10	0	1	0	0	12
07:15	0	8	0	0	0	1	1	16	0	0	0	1	27
07:30	1	5	0	1	0	0	0	7	0	1	0	0	15
07:45	1	8	0	0	0	0	1	8	0	1	0	0	19
08:00	1	9	1	1	0	1	0	7	0	1	0	0	21
08:15	0	6	0	0	0	2	0	7	0	0	0	0	15
08:30	3	8	0	0	0	0	1	8	0	1	0	1	22
08:45	0	5	3	0	0	0	0	9	0	2	0	0	19

Truck traffic

Interval starts	SouthBound			Westbound			Northbound			Eastbound			Total
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
07:00	0	0	0	0	0	0	0	0	0	0	0	0	0
07:15	0	1	0	0	0	0	0	0	0	0	0	0	1
07:30	0	0	0	0	0	0	0	0	0	0	0	0	0
07:45	0	0	0	0	0	0	0	0	0	0	0	0	0
08:00	0	0	0	0	0	0	0	0	0	0	0	0	0
08:15	0	0	0	0	0	0	0	0	0	0	0	0	0
08:30	0	0	0	0	0	0	0	0	0	0	0	0	0
08:45	0	0	0	0	0	0	0	0	0	0	0	0	0

Pedestrian volumes

Interval starts	NE			NW			SW			SE			Total
	Left	Right	Total	Left	Right	Total	Left	Right	Total	Left	Right	Total	
07:00	0	0	0	0	0	0	0	0	0	0	0	0	0
07:15	0	0	0	0	0	0	0	0	0	0	0	0	0
07:30	0	0	0	0	0	0	0	0	0	0	0	0	0
07:45	0	0	0	0	0	0	0	0	0	0	0	0	0
08:00	0	0	0	0	0	0	0	0	0	0	2	2	2
08:15	0	0	0	0	0	0	0	0	0	0	0	0	0
08:30	0	0	0	0	0	0	0	0	0	0	0	0	0
08:45	0	1	1	6	0	6	0	0	0	0	2	2	9

Intersection Peak Hour

07:15 - 08:15

	SouthBound			Westbound			Northbound			Eastbound			Total
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
Vehicle Total	3	31	1	2	0	2	2	38	0	3	0	1	83
Factor	0.75	0.86	0.25	0.50	0.00	0.50	0.50	0.59	0.00	0.75	0.00	0.25	0.74
Approach Factor	0.80			0.50			0.59			1.00			

Peak Hour Vehicle Summary

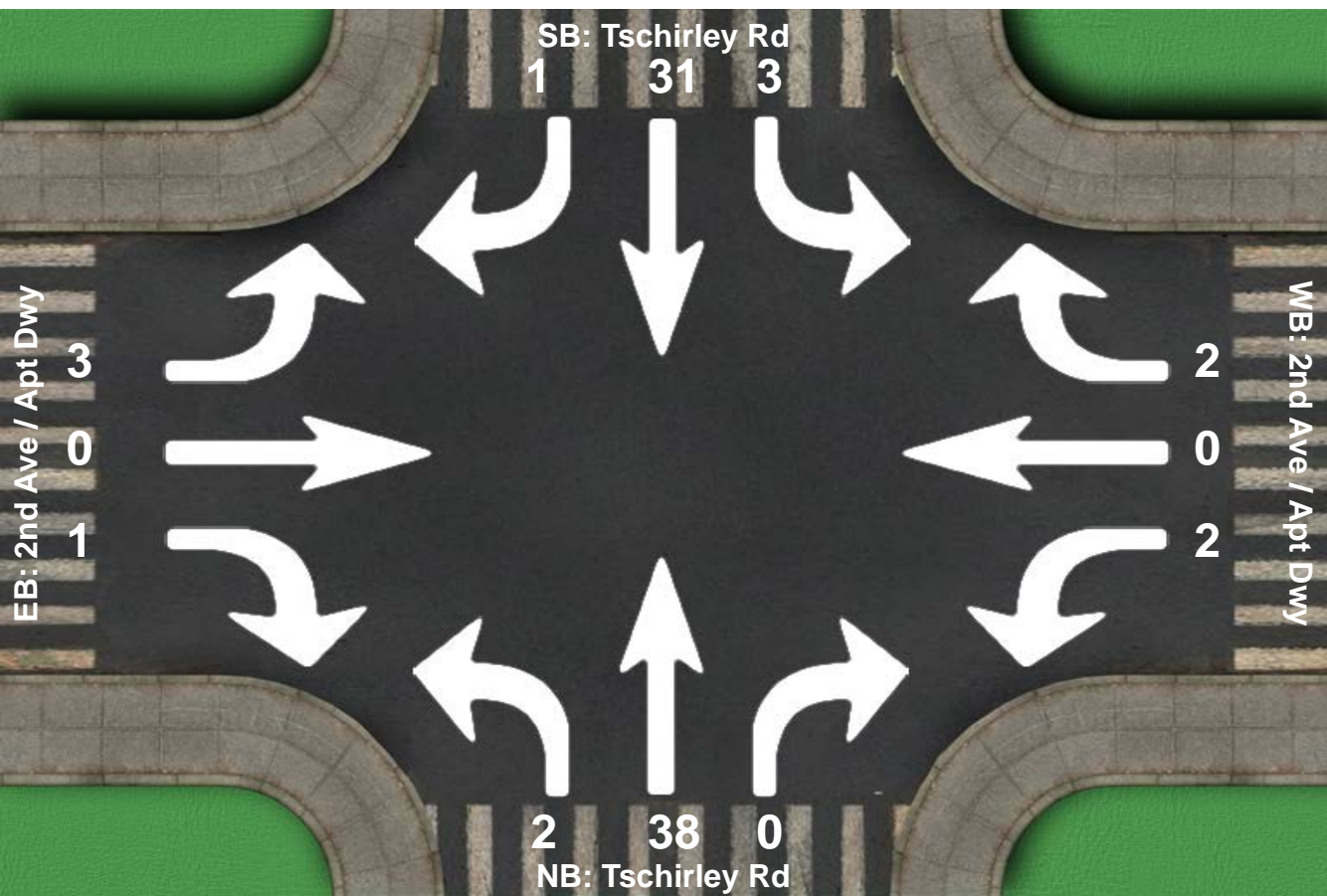
[illegible]

Peak Hour Pedestrians

	NE			NW			SW			SE			Total
	Left	Right	Total	Left	Right	Total	Left	Right	Total	Left	Right	Total	
Pedestrians	0	0	0	0	0	0	0	0	0	0	2	2	2

Intersection Peak Hour

Location: Tschirley Rd at 2nd Ave / Apt Dwy, Spokane Valley, WA
GPS Coordinates: Lat=47.654533, Lon=-117.169545
Date: 2023-03-30
Day of week: Thursday
Weather: Overcast
Analyst: ALW



Intersection Peak Hour

07:15 - 08:15

	SouthBound			Westbound			Northbound			Eastbound			Total
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
Vehicle Total	3	31	1	2	0	2	2	38	0	3	0	1	83
Factor	0.75	0.86	0.25	0.50	0.00	0.50	0.50	0.59	0.00	0.75	0.00	0.25	0.74
Approach Factor	0.80			0.50			0.59			1.00			

Turn Count Summary

Analyst: Mike McCluskey

Total vehicle traffic

Interval starts	SouthBound			Westbound			Northbound			Eastbound			Total
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
07:00	0	1	0	0	0	1	0	2	0	0	0	0	4
07:15	1	2	1	0	3	5	2	4	0	1	0	0	19
07:30	2	4	1	0	1	3	3	6	0	2	0	0	22
07:45	5	6	0	0	1	5	2	4	1	1	0	0	25
08:00	1	6	1	0	1	2	0	4	0	0	0	2	17
08:15	0	4	0	0	0	1	1	4	0	0	0	2	12
08:30	5	8	0	0	2	1	0	5	0	1	1	1	24
08:45	1	8	1	0	2	2	3	6	0	2	0	0	25
09:00	0	0	0	0	0	0	0	1	0	0	0	0	1

Car traffic

Interval starts	SouthBound			Westbound			Northbound			Eastbound			Total
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
07:00	0	1	0	0	0	1	0	1	0	0	0	0	3
07:15	1	2	1	0	3	5	2	4	0	1	0	0	19
07:30	2	4	1	0	1	3	2	6	0	2	0	0	21
07:45	5	6	0	0	1	5	2	4	1	1	0	0	25
08:00	1	6	1	0	1	2	0	4	0	0	0	2	17
08:15	0	4	0	0	0	1	1	3	0	0	0	2	11
08:30	5	8	0	0	2	1	0	5	0	1	1	1	24
08:45	1	8	1	0	2	2	3	6	0	1	0	0	24
09:00	0	0	0	0	0	0	0	1	0	0	0	0	1

Truck traffic

[illegible]

Bicycles traffic

[illegible]

Pedestrian volumes

[illegible]

Intersection Peak Hour

07:15 - 08:15

	SouthBound			Westbound			Northbound			Eastbound			Total
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
Vehicle Total	9	18	3	0	6	15	7	18	1	4	0	2	83
Factor	0.45	0.75	0.75	0.00	0.50	0.75	0.58	0.75	0.25	0.50	0.00	0.25	0.83
Approach Factor	0.68			0.66			0.72			0.75			

Peak Hour Vehicle Summary

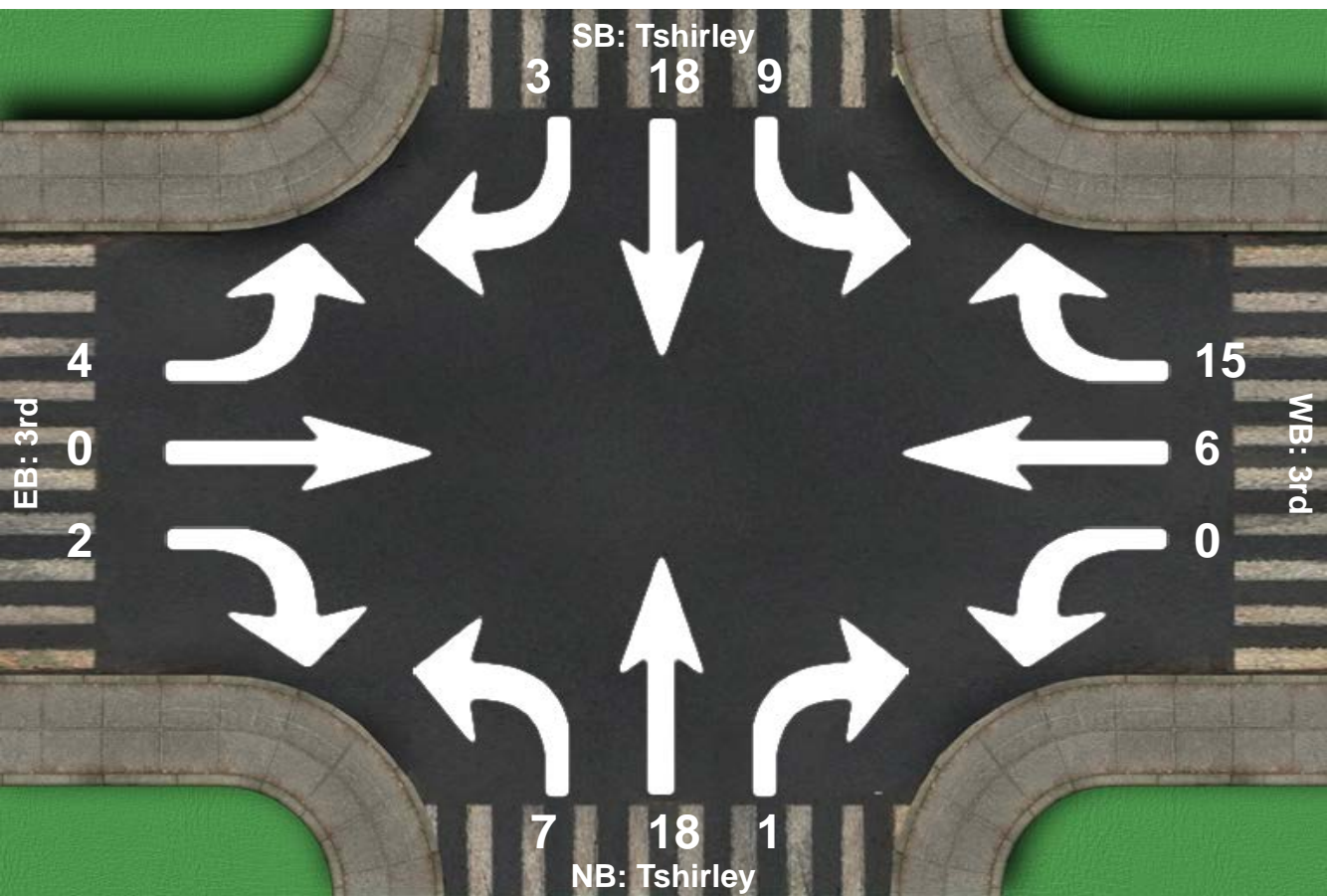
Vehicle	SouthBound			Westbound			Northbound			Eastbound			Total
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
Car	9	18	3	0	6	15	6	18	1	4	0	2	82
Truck	0	0	0	0	0	0	0	0	0	0	0	0	0
Bicycles	0	0	0	0	0	0	1	0	0	0	0	0	1

Peak Hour Pedestrians

[illegible]

Intersection Peak Hour

Location: Tshirley at 3rd, Spokane Valley
GPS Coordinates:
Date: 2022-11-16
Day of week: Wednesday
Weather: Foggy
Analyst: Mike McCluskey



Intersection Peak Hour

07:15 - 08:15

	SouthBound			Westbound			Northbound			Eastbound			Total
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
Vehicle Total	9	18	3	0	6	15	7	18	1	4	0	2	83
Factor	0.45	0.75	0.75	0.00	0.50	0.75	0.58	0.75	0.25	0.50	0.00	0.25	0.83
Approach Factor	0.68			0.66			0.72			0.75			

Total vehicle traffic

Interval starts	SouthBound			Westbound			Northbound			Eastbound			Total
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
07:00	0	2	1	0	0	1	1	3	0	2	0	0	10
07:15	0	2	0	0	0	0	2	5	0	0	0	0	9
07:30	3	6	0	0	0	0	0	3	0	0	1	1	14
07:45	0	3	0	0	0	0	2	2	0	3	0	0	10
08:00	0	9	0	0	0	0	1	5	0	3	0	0	18
08:15	0	6	0	0	0	0	1	4	0	0	0	0	11
08:30	0	5	1	0	0	1	0	4	0	0	0	1	12
08:45	0	5	1	0	0	0	0	6	0	2	0	0	14

Car traffic

Interval starts	SouthBound			Westbound			Northbound			Eastbound			Total
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
07:00	0	2	1	0	0	1	1	3	0	2	0	0	10
07:15	0	2	0	0	0	0	2	5	0	0	0	0	9
07:30	3	6	0	0	0	0	0	3	0	0	1	1	14
07:45	0	3	0	0	0	0	2	2	0	3	0	0	10
08:00	0	9	0	0	0	0	1	5	0	3	0	0	18
08:15	0	6	0	0	0	0	1	4	0	0	0	0	11
08:30	0	5	1	0	0	1	0	4	0	0	0	1	12
08:45	0	5	1	0	0	0	0	6	0	2	0	0	14

Truck traffic

[illegible]

Pedestrian volumes

[illegible]

Intersection Peak Hour

08:00 - 09:00

	SouthBound			Westbound			Northbound			Eastbound			Total
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
Vehicle Total	0	25	2	0	0	1	2	19	0	5	0	1	55
Factor	0.00	0.69	0.50	0.00	0.00	0.25	0.50	0.79	0.00	0.42	0.00	0.25	0.76
Approach Factor	0.75			0.25			0.88			0.50			

Peak Hour Vehicle Summary

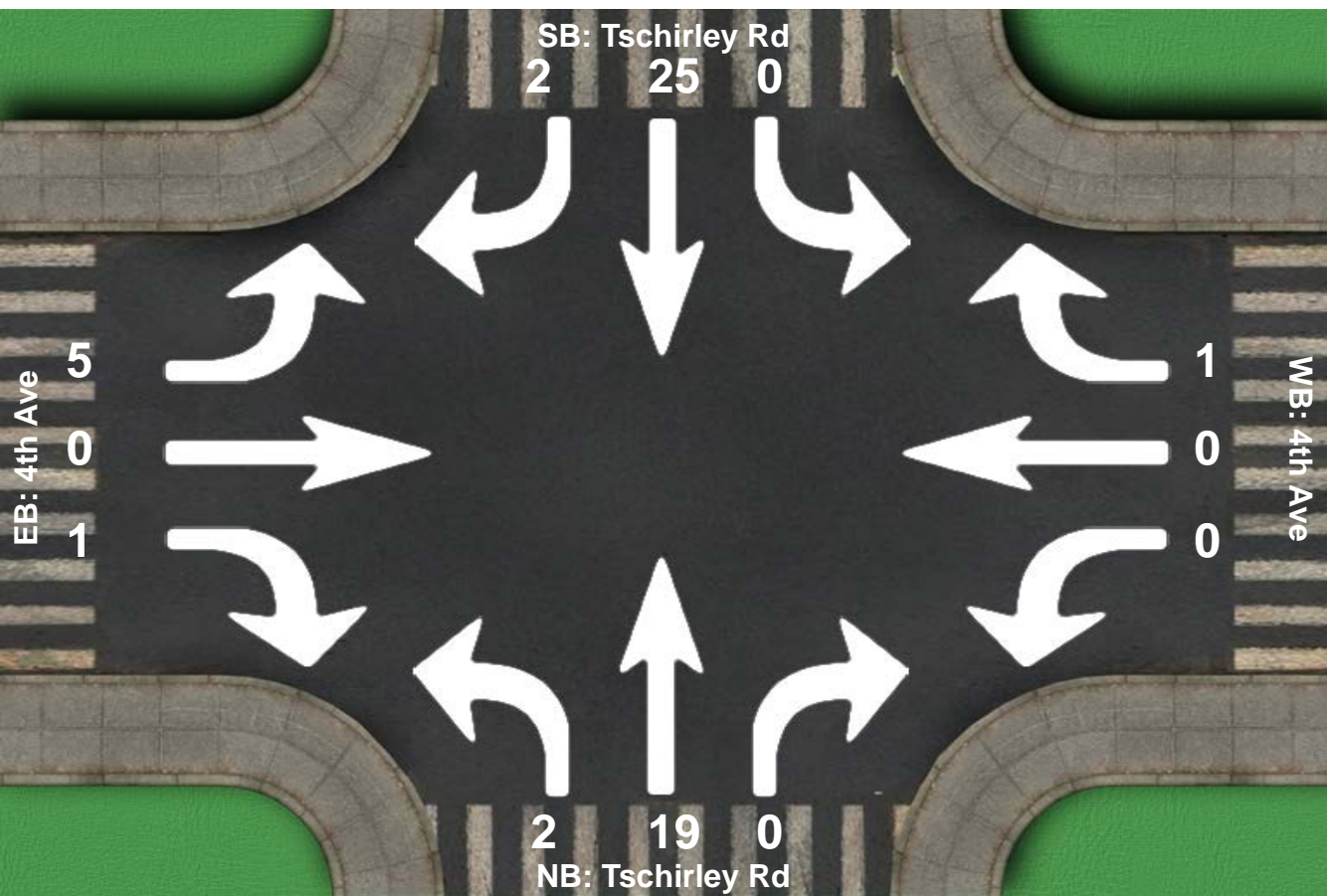
[illegible]

Peak Hour Pedestrians

	NE			NW			SW			SE			Total
	Left	Right	Total	Left	Right	Total	Left	Right	Total	Left	Right	Total	
Pedestrians	0	0	0	0	0	0	0	0	0	0	1	1	1

Intersection Peak Hour

Location: Tschirley Rd at 4th Ave , Spokane Valley, WA
GPS Coordinates: Lat=47.659967, Lon=-117.184058
Date: 2023-04-06
Day of week: Thursday
Weather: Sunny
Analyst: ALW



Intersection Peak Hour

08:00 - 09:00

	SouthBound			Westbound			Northbound			Eastbound			Total
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
Vehicle Total	0	25	2	0	0	1	2	19	0	5	0	1	55
Factor	0.00	0.69	0.50	0.00	0.00	0.25	0.50	0.79	0.00	0.42	0.00	0.25	0.76
Approach Factor	0.75			0.25			0.88			0.50			

PROJECT: Tschirley Apts
 JOB NO. 2220
 INTERSECTION: Tschirley / 5th

DATE OF COUNT: 4/6/23

TRAFFIC COUNT REDUCTION WORKSHEET AM PEAK HOURS
 15 Minute Period Beginning @

APPROACH	MOVEMENT	7:00		7:15		7:30		7:45		8:00		8:15		8:30		8:45	
		pass	trk	pass	trk	pass	trk	pass	trk	pass	trk	pass	trk	pass	trk	pass	trk
Eastbound	Left							1								1	
	Through																
	Right																
	App. Total	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0
	Pct Trucks		####		####		####		0%		####		####		####		0%
Westbound	Left																
	Through																
	Right																
	App. Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Pct Trucks		####		####		####		####		####		####		####		####
Northbound	Left	2				1		1								1	
	Through	4		7		3		4		6		5		4		6	
	Right																
	App. Total	6	0	7	0	4	0	5	0	6	0	5	0	4	0	7	0
	Pct Trucks		0%		0%		0%		0%		0%		0%		0%		0%
Southbound	Left																
	Through	2		2		6		3		9		6		5		5	
	Right							1						1			
	App. Total	2	0	2	0	6	0	4	0	9	0	6	0	6	0	5	0
	Pct Trucks		0%		0%		0%		0%		0%		0%		0%		0%
Total Intersection Volume		8	0	9	0	10	0	10	0	15	0	11	0	10	0	13	0
Intersection Pct Trucks			0%		0%		0%		0%		0%		0%		0%		0%

Intersection Total One Hour Volumes	Pct Trucks
7:00	37 0.00%
7:15	44 0.00%
7:30	46 0.00%
7:45	46 0.00%
8:00	49 0.00%

PROJECT: Tschirley Apts
 JOB NO. 2220
 INTERSECTION: Tschirley / 5th

DATE OF COUNT: 4/6/23

AM PEAK HOUR BREAKDOWN

APPROACH	MOVEMENT	8:00		8:15		8:30		8:45		
		pass	trk	pass	trk	pass	trk	pass	trk	TOTAL
Eastbound	Left							1		1
	Through									0
	Right									0
	App. Total	0	0	0	0	0	0	1	0	1
	Pct Trucks		####		####		####		0%	0%
Westbound	Left									0
	Through									0
	Right									0
	App. Total	0	0	0	0	0	0	0	0	0
	Pct Trucks		####		####		####		####	####
Northbound	Left							1		1
	Through	6		5		4		6		21
	Right									0
	App. Total	6	0	5	0	4	0	7	0	22
	Pct Trucks		0%		0%		0%		0%	0%
Southbound	Left									0
	Through	9		6		5		5		25
	Right					1				1
	App. Total	9	0	6	0	6	0	5	0	26
	Pct Trucks		0%		0%		0%		0%	0%
Total Intersection Volume		15	0	11	0	10	0	13	0	49
Intersection Pct Trucks			0%		0%		0%		0%	

P.H.F. = 0.82

[illegible]

Intersection Peak Hour

08:00 - 09:00

	SouthBound			Westbound			Northbound			Eastbound			Total
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
Vehicle Total	9	17	2	0	0	13	0	9	2	1	1	1	55
Factor	0.56	0.85	0.50	0.00	0.00	0.54	0.00	0.75	0.50	0.25	0.25	0.25	0.72
Approach Factor	0.78			0.54			0.69			0.25			

Peak Hour Vehicle Summary

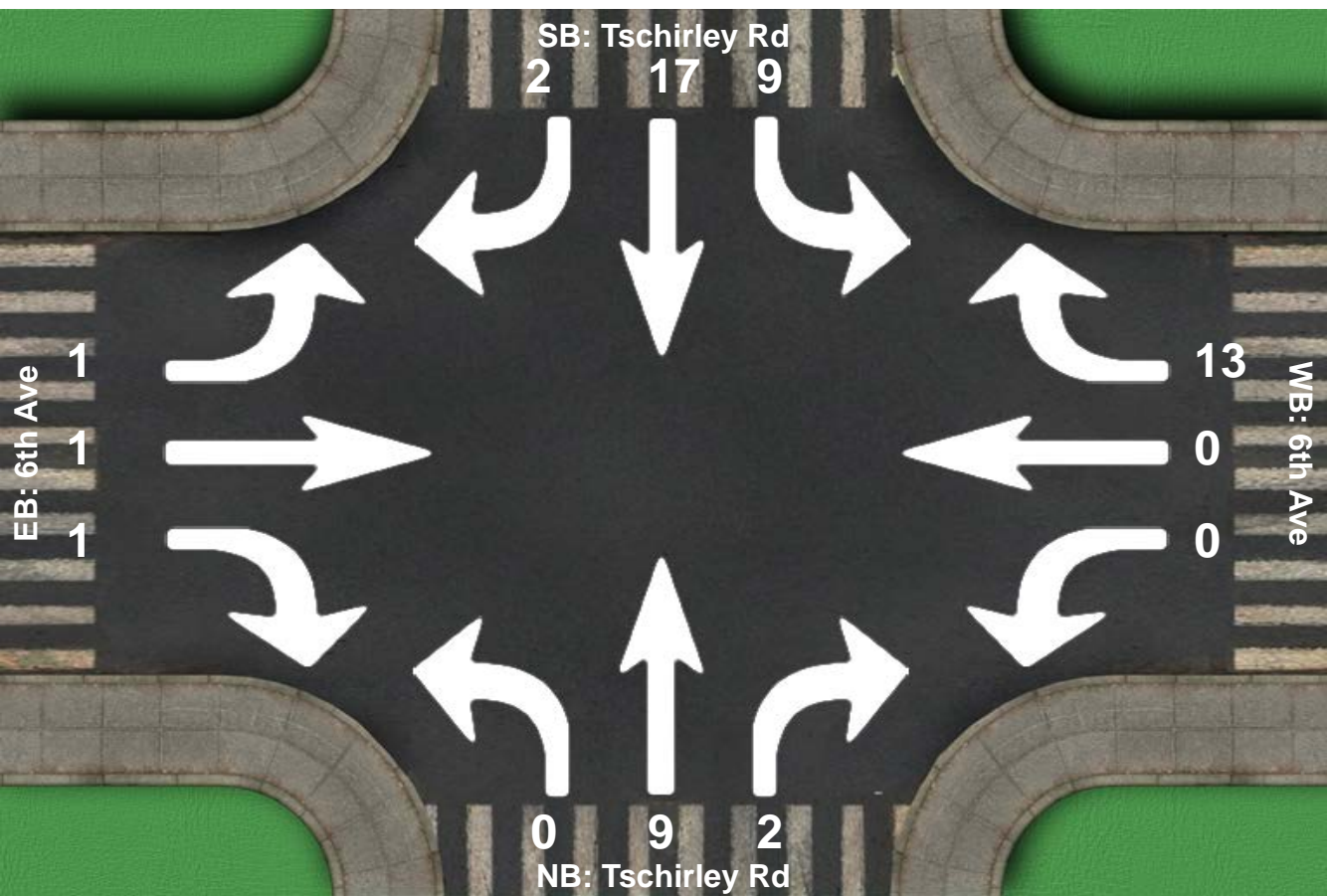
Vehicle	SouthBound			Westbound			Northbound			Eastbound			Total
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
Car	8	16	2	0	0	13	0	8	2	1	1	1	52
Truck	1	1	0	0	0	0	0	1	0	0	0	0	3

Peak Hour Pedestrians

[illegible]

Intersection Peak Hour

Location: Tschirley Rd at 6th Ave, Spokane Valley, WA
GPS Coordinates: Lat=47.657271, Lon=-117.175203
Date: 2023-03-29
Day of week: Wednesday
Weather: Sunny
Analyst: ALW



Intersection Peak Hour

08:00 - 09:00

	SouthBound			Westbound			Northbound			Eastbound			Total
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
Vehicle Total	9	17	2	0	0	13	0	9	2	1	1	1	55
Factor	0.56	0.85	0.50	0.00	0.00	0.54	0.00	0.75	0.50	0.25	0.25	0.25	0.72
Approach Factor	0.78			0.54			0.69			0.25			

Total vehicle traffic

Interval starts	SouthBound			Westbound			Northbound			Eastbound			Total
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
06:59	0	0	0	0	0	0	0	0	0	0	0	0	0
07:00	15	0	15	0	97	20	8	3	0	12	81	0	251
07:15	22	2	10	2	140	16	3	7	2	12	107	2	325
07:30	24	3	23	0	184	32	5	10	3	11	120	2	417
07:45	23	2	29	1	199	38	8	6	1	22	145	1	475
08:00	25	0	24	1	145	19	7	4	1	14	112	2	354
08:15	20	1	20	2	138	25	2	9	1	11	111	1	341
08:30	25	1	21	0	156	20	4	1	1	19	121	4	373
08:45	31	2	29	0	199	34	7	4	1	11	141	6	465

Car traffic

Interval starts	SouthBound			Westbound			Northbound			Eastbound			Total
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
06:59	0	0	0	0	0	0	0	0	0	0	0	0	0
07:00	15	0	15	0	90	20	8	3	0	12	80	0	243
07:15	22	2	10	2	136	15	3	7	2	11	105	2	317
07:30	24	3	23	0	180	32	5	10	3	11	117	2	410
07:45	23	2	29	1	196	37	7	6	1	22	140	0	464
08:00	25	0	23	1	139	19	7	4	1	13	107	2	341
08:15	19	1	19	2	133	23	2	9	1	11	106	1	327
08:30	24	1	21	0	151	19	4	1	1	18	118	3	361
08:45	30	2	27	0	193	33	7	4	1	10	136	5	448

Truck traffic

Interval starts	SouthBound			Westbound			Northbound			Eastbound			Total
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
06:59	0	0	0	0	0	0	0	0	0	0	0	0	0
07:00	0	0	0	0	7	0	0	0	0	0	1	0	8
07:15	0	0	0	0	4	1	0	0	0	1	2	0	8
07:30	0	0	0	0	4	0	0	0	0	0	3	0	7
07:45	0	0	0	0	3	1	1	0	0	0	5	1	11
08:00	0	0	1	0	6	0	0	0	0	1	5	0	13
08:15	1	0	1	0	5	2	0	0	0	0	5	0	14
08:30	1	0	0	0	5	1	0	0	0	1	3	1	12
08:45	1	0	2	0	6	1	0	0	0	1	5	1	17

Pedestrian volumes

[illegible]

Intersection Peak Hour

07:30 - 08:30

	SouthBound			Westbound			Northbound			Eastbound			Total
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
Vehicle Total	92	6	96	4	666	114	22	29	6	58	488	6	1587
Factor	0.92	0.50	0.83	0.50	0.84	0.75	0.69	0.72	0.50	0.66	0.84	0.75	0.84
Approach Factor	0.90			0.82			0.79			0.82			

Peak Hour Vehicle Summary

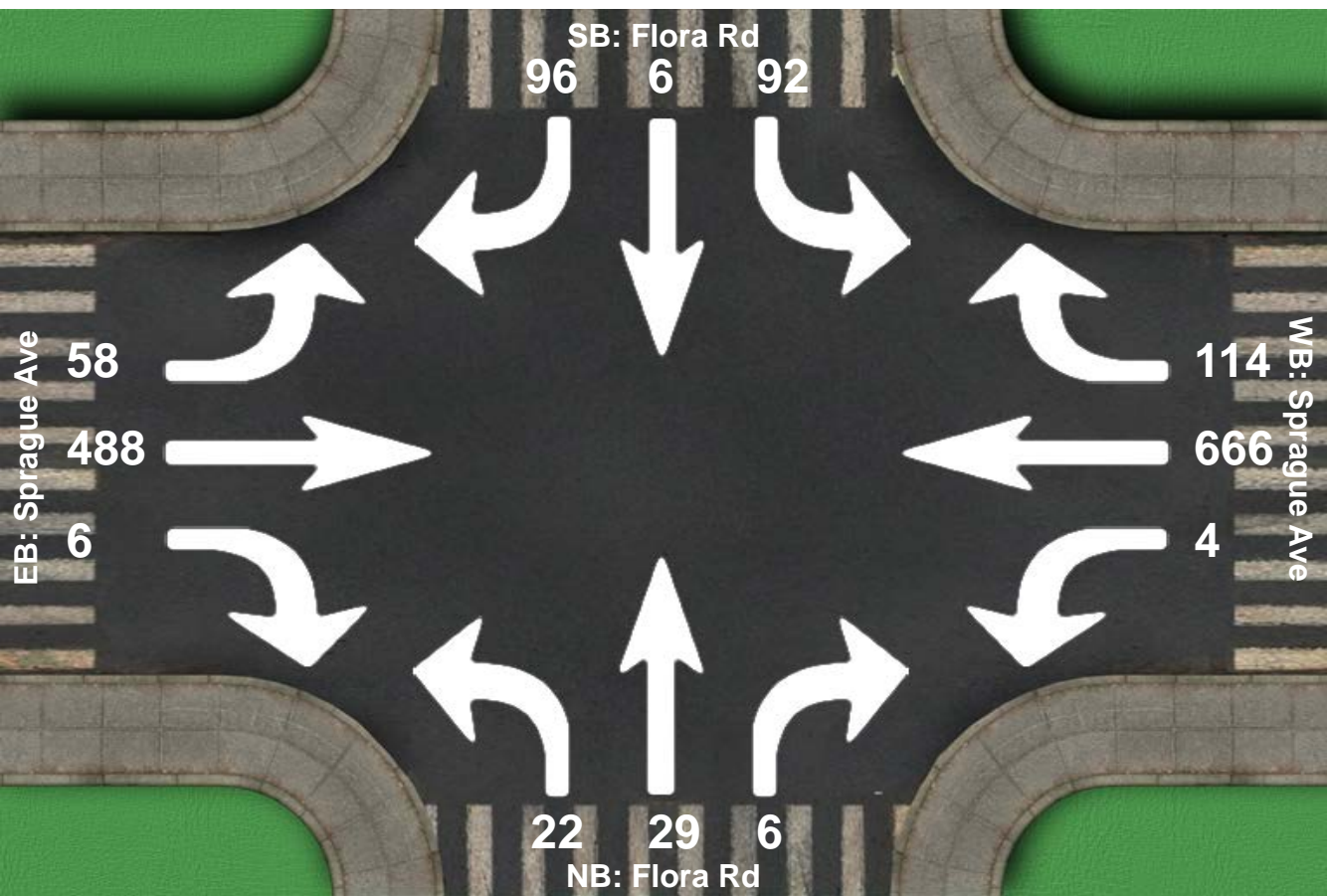
Vehicle	SouthBound			Westbound			Northbound			Eastbound			Total
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
Car	91	6	94	4	648	111	21	29	6	57	470	5	1542
Truck	1	0	2	0	18	3	1	0	0	1	18	1	45

Peak Hour Pedestrians

	NE			NW			SW			SE			Total
	Left	Right	Total	Left	Right	Total	Left	Right	Total	Left	Right	Total	
Pedestrians	0	1	1	4	1	5	3	1	4	0	1	1	11

Intersection Peak Hour

Location: Flora Rd at Sprague Ave , Spokane Valley, WA
GPS Coordinates: Lat=47.660286, Lon=-117.184280
Date: 2023-05-16
Day of week: Tuesday
Weather: Overcast & Warm
Analyst: ALW



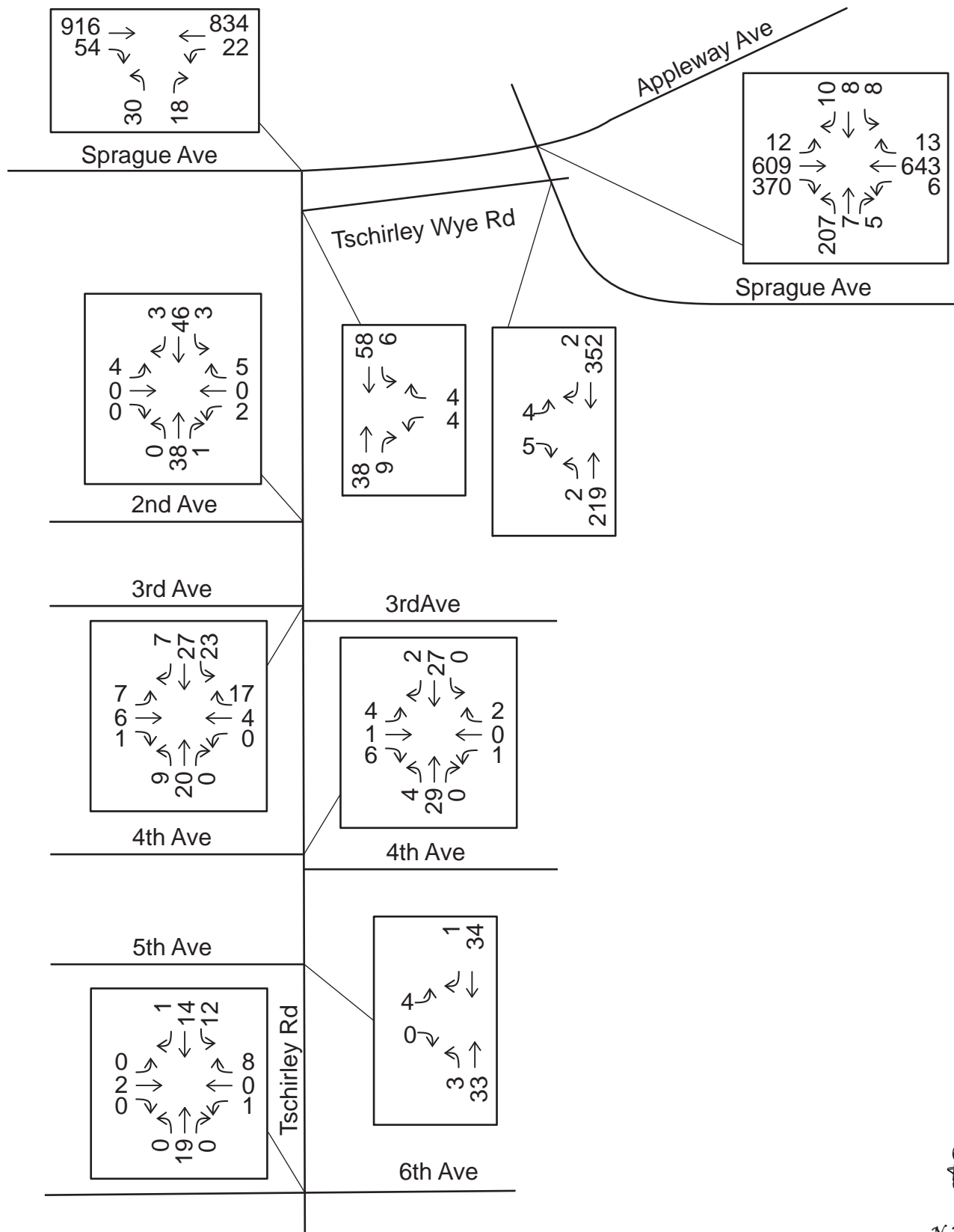
Intersection Peak Hour

07:30 - 08:30

	SouthBound			Westbound			Northbound			Eastbound			Total
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
Vehicle Total	92	6	96	4	666	114	22	29	6	58	488	6	1587
Factor	0.92	0.50	0.83	0.50	0.84	0.75	0.69	0.72	0.50	0.66	0.84	0.75	0.84
Approach Factor	0.90			0.82			0.79			0.82			

TECHNICAL APPENDIX

PM PEAK HOUR TRAFFIC COUNTS



PROJECT: Tschirley Road
 JOB NO. 2220
 INTERSECTION: Appleway / Sprague / Corbin

DATE OF COUNT: 11/17/22

TRAFFIC COUNT REDUCTION WORKSHEET PM PEAK HOURS

		15 Minute Period Beginning @															
APPROACH	MOVEMENT	4:00		4:15		4:30		4:45		5:00		5:15		5:30		5:45	
		pass	trk	pass	trk	pass	trk	pass	trk	pass	trk	pass	trk	pass	trk	pass	trk
Eastbound	Left	0		4		4		4		2		2		2		3	
	Through	156	1	159		161		132		156		150		135	2	109	
	Right	78		78		101		113		66		77		72		70	
	App. Total	234	1	241	0	266	0	249	0	224	0	229	0	209	2	182	0
	Pct Trucks		0%		0%		0%		0%		0%		0%		1%		0%
Westbound	Left	1		3		2		0		1		2		0		0	
	Through	158	0	163	2	174	1	144	1	151	0	143	1	114	1	132	1
	Right	3		5		3		2		1		1		1		7	
	App. Total	162	0	171	2	179	1	146	1	153	0	146	1	115	1	139	1
	Pct Trucks		0%		1%		1%		1%		0%		1%		1%		1%
Northbound	Left	46		65		53		42	1	43		46		50		56	
	Through	1		3	1	0		2		0		0		1		1	
	Right	1		1		1		2		0		0		1		1	
	App. Total	48	0	69	1	54	0	46	1	43	0	46	0	52	0	58	0
	Pct Trucks		0%		1%		0%		2%		0%		0%		0%		0%
Southbound	Left	2		2		1		3		0		0		0		3	
	Through	4		1		0		3		0		2		1		1	
	Right	4		2		2		2		5		2		2		5	
	App. Total	10	0	5	0	3	0	8	0	5	0	4	0	3	0	9	0
	Pct Trucks		0%		0%		0%		0%		0%		0%		0%		0%
Total Intersection Volume		454	1	486	3	502	1	449	2	425	0	425	1	379	3	388	1
Intersection Pct Trucks			0%		1%		0%		0%		0%		0%		1%		0%

Intersection Total One Hour Volumes		Pct Trucks
4:00	1898	0.37%
4:15	1868	0.32%
4:30	1805	0.22%
4:45	1684	0.36%
5:00	1622	0.31%

PROJECT: Tschirley Road
 JOB NO. 2220
 INTERSECTION: Appleway / Sprague / Corbin

DATE OF COUNT: 11/17/22

PM PEAK HOUR BREAKDOWN

APPROACH	MOVEMENT	4:00		4:15		4:30		4:45		TOTAL
		pass	trk	pass	trk	pass	trk	pass	trk	
Eastbound	Left	0		4		4		4		12
	Through	156	1	159		161		132		609
	Right	78		78		101		113		370
		234	1	241	0	266	0	249	0	991
	Pct Trucks		0%		0%		0%		0%	0%
Westbound	Left	1		3		2		0		6
	Through	158	0	163	2	174	1	144	1	643
	Right	3		5		3		2		13
	App. Total	162	0	171	2	179	1	146	1	662
	Pct Trucks		0%		1%		1%		1%	1%
Northbound	Left	46		65		53		42	1	207
	Through	1		3	1	0		2		7
	Right	1		1		1		2		5
	App. Total	48	0	69	1	54	0	46	1	219
	Pct Trucks		0%		1%		0%		2%	1%
Southbound	Left	2		2		1		3		8
	Through	4		1		0		3		8
	Right	4		2		2		2		10
	App. Total	10	0	5	0	3	0	8	0	26
	Pct Trucks		0%		0%		0%		0%	0%
Total Intersection Volume		454	1	486	3	502	1	449	2	1898
Intersection Pct Trucks			0%		1%		0%		0%	

P.H.F. 0.94

Total vehicle traffic

Interval starts	SouthBound			Westbound			Northbound			Eastbound			Total
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
16:00	0	86	2	0	0	0	0	43	0	0	0	5	136
16:15	0	86	0	0	0	0	2	54	0	0	0	1	143
16:30	1	79	1	0	0	0	1	47	0	0	0	2	131
16:45	0	83	0	0	0	0	0	69	0	1	0	1	154
17:00	0	96	0	0	0	0	1	57	0	0	0	1	155
17:15	0	96	1	0	0	0	1	53	7	2	0	1	161
17:30	1	76	1	0	0	0	0	50	0	1	0	2	131
17:45	0	76	0	0	0	0	2	52	0	2	0	3	135

Car traffic

Interval starts	SouthBound			Westbound			Northbound			Eastbound			Total
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
16:00	0	86	2	0	0	0	0	43	0	0	0	5	136
16:15	0	86	0	0	0	0	2	54	0	0	0	1	143
16:30	1	79	1	0	0	0	1	47	0	0	0	2	131
16:45	0	83	0	0	0	0	0	69	0	1	0	1	154
17:00	0	96	0	0	0	0	1	57	0	0	0	1	155
17:15	0	96	1	0	0	0	1	53	7	2	0	1	161
17:30	1	76	1	0	0	0	0	50	0	1	0	2	131
17:45	0	76	0	0	0	0	2	52	0	2	0	3	135

Truck traffic

[illegible]

Pedestrian volumes

[illegible]

Intersection Peak Hour

16:45 - 17:45

	SouthBound			Westbound			Northbound			Eastbound			Total
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
Vehicle Total	1	351	2	0	0	0	2	229	7	4	0	5	601
Factor	0.25	0.91	0.50	0.00	0.00	0.00	0.50	0.83	0.25	0.50	0.00	0.62	0.93
Approach Factor	0.91			0.00			0.86			0.75			

Peak Hour Vehicle Summary

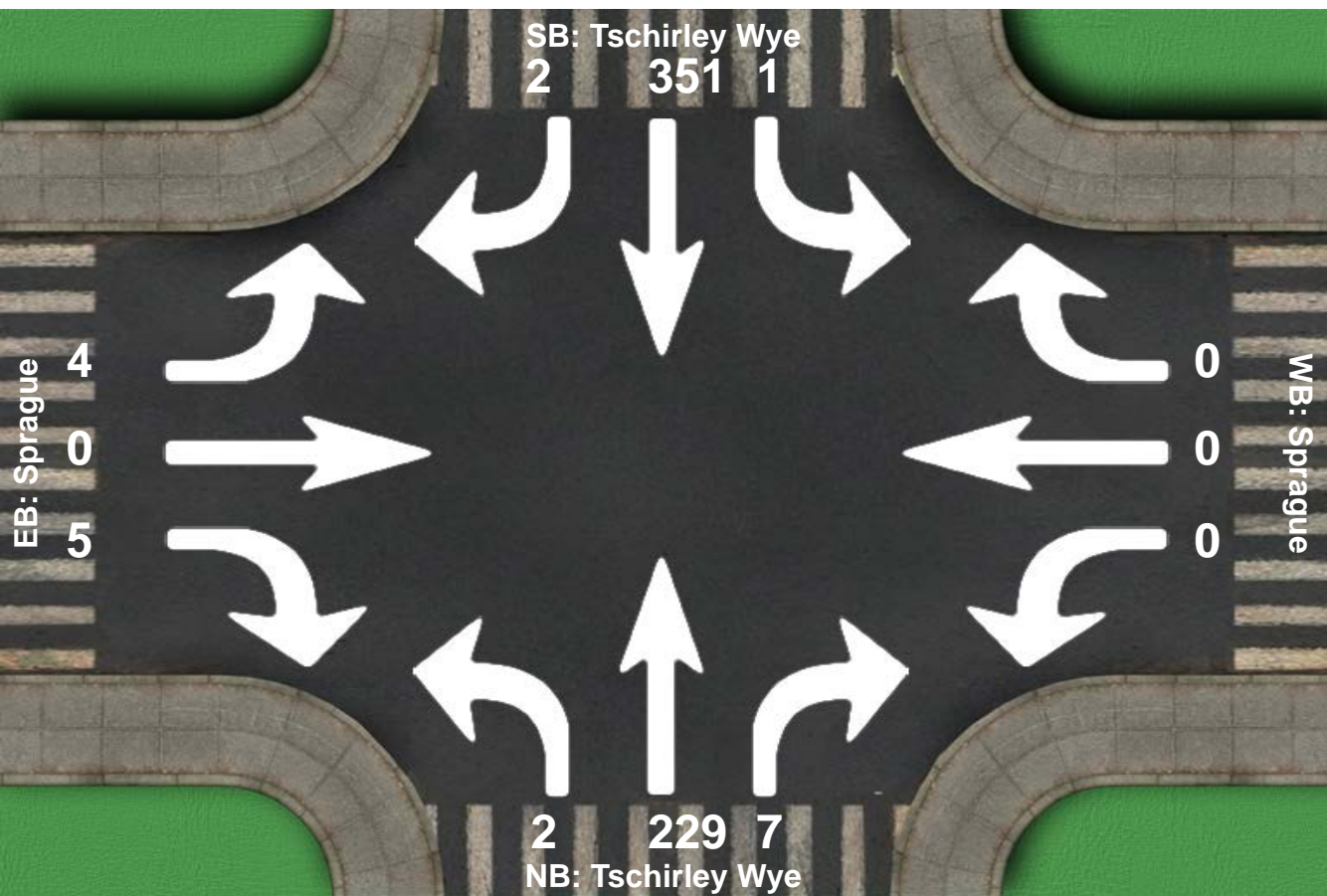
Vehicle	SouthBound			Westbound			Northbound			Eastbound			Total
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
Car	1	351	2	0	0	0	2	229	7	4	0	5	601
Truck	0	0	0	0	0	0	0	0	0	0	0	0	0

Peak Hour Pedestrians

	NE			NW			SW			SE			Total
	Left	Right	Total	Left	Right	Total	Left	Right	Total	Left	Right	Total	
Pedestrians	0	0	0	0	1	1	0	0	0	0	0	0	1

Intersection Peak Hour

Location: Tschirley Wye at Sprague, Spokane Valley, WA
GPS Coordinates: Lat=47.657075, Lon=-117.168420
Date: 2023-03-29
Day of week: Wednesday
Weather: Overcast
Analyst: ALW



Intersection Peak Hour

16:45 - 17:45

	SouthBound			Westbound			Northbound			Eastbound			Total
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
Vehicle Total	1	351	2	0	0	0	2	229	7	4	0	5	601
Factor	0.25	0.91	0.50	0.00	0.00	0.00	0.50	0.83	0.25	0.50	0.00	0.62	0.93
Approach Factor	0.91			0.00			0.86			0.75			

Total vehicle traffic

[illegible]

Car traffic

[illegible]

Truck traffic

[illegible]

Pedestrian volumes

[illegible]

Intersection Peak Hour

16:00 - 17:00

	SouthBound			Westbound			Northbound			Eastbound			Total
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
Vehicle Total	0	0	0	22	834	0	30	0	18	0	916	54	1874
Factor	0.00	0.00	0.00	0.61	0.93	0.00	0.83	0.00	0.64	0.00	0.93	0.79	0.93
Approach Factor	0.00			0.91			0.75			0.94			

Peak Hour Vehicle Summary

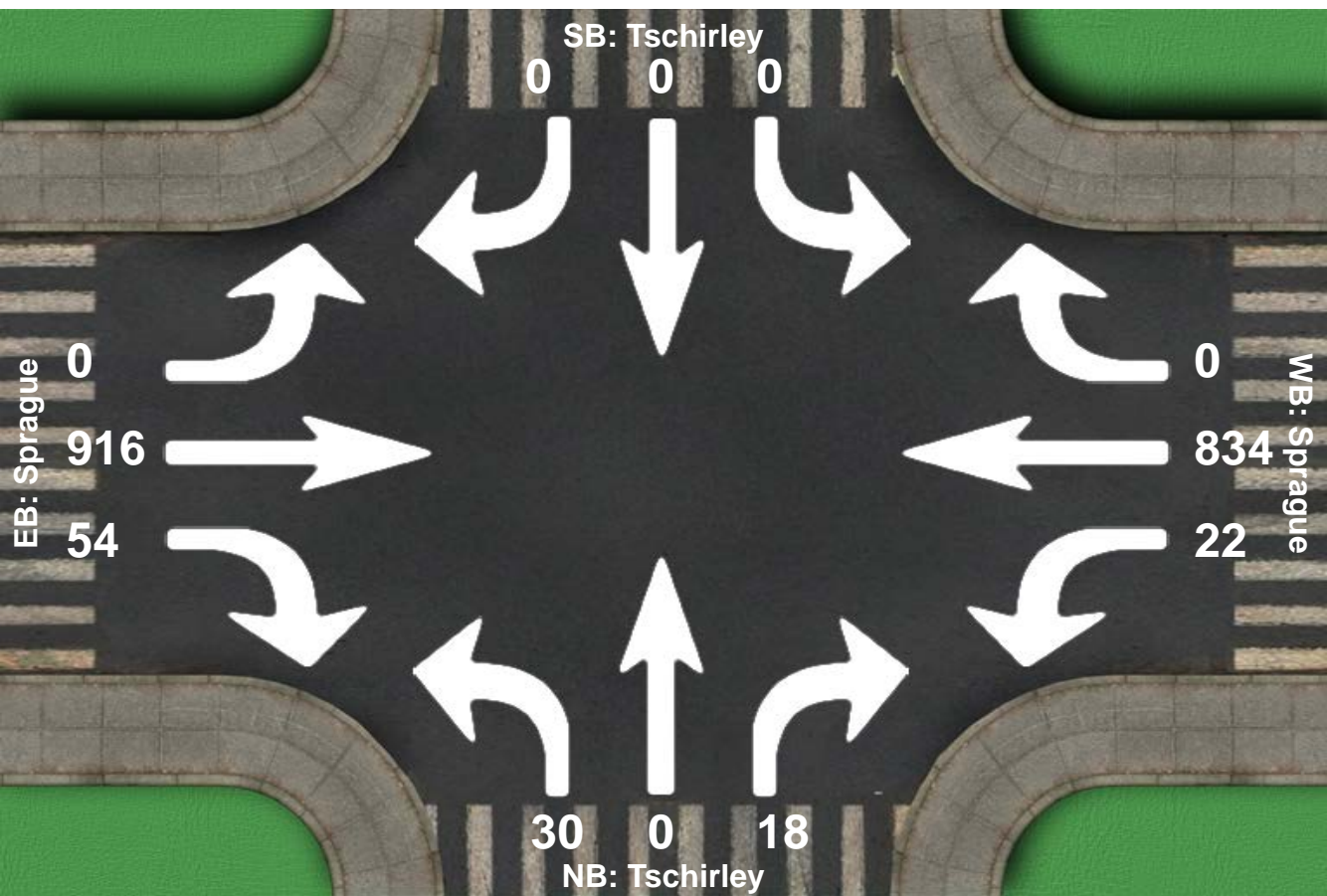
Vehicle	SouthBound			Westbound			Northbound			Eastbound			Total
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
Car	0	0	0	22	828	0	30	0	18	0	898	54	1850
Truck	0	0	0	0	6	0	0	0	0	0	18	0	24

Peak Hour Pedestrians

	NE			NW			SW			SE			Total
	Left	Right	Total	Left	Right	Total	Left	Right	Total	Left	Right	Total	
Pedestrians	0	0	0	1	0	1	0	0	0	1	0	1	2

Intersection Peak Hour

Location: Tschirley at Sprague, Spokane Valley, Wa
GPS Coordinates: Lat=47.656241, Lon=-117.169668
Date: 2022-11-15
Day of week: Tuesday
Weather: Cool, Partly Cloudy
Analyst: ALW



Intersection Peak Hour

16:00 - 17:00

	SouthBound			Westbound			Northbound			Eastbound			Total
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
Vehicle Total	0	0	0	22	834	0	30	0	18	0	916	54	1874
Factor	0.00	0.00	0.00	0.61	0.93	0.00	0.83	0.00	0.64	0.00	0.93	0.79	0.93
Approach Factor	0.00			0.91			0.75			0.94			

Turn Count Summary

Location: Tschirley Ave at Tschirley Wye, Spokane Valley, WA
GPS Coordinates: Lat=47.656960, Lon=-117.168645
Date: 2023-04-05
Day of week: Wednesday
Weather: Sunny
Analyst: ALW

Total vehicle traffic

Interval starts	SouthBound			Westbound			Northbound			Eastbound			Total
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
15:59	0	0	0	0	0	0	0	0	0	0	0	0	0
16:00	2	16	0	1	0	2	0	14	3	0	0	0	38
16:15	1	11	0	1	0	0	0	10	0	0	0	0	23
16:30	1	11	0	2	0	1	0	8	3	0	0	0	26
16:45	2	20	0	0	0	1	0	6	3	0	0	0	32
17:00	0	17	1	0	0	0	0	16	0	0	0	0	34
17:15	0	14	0	1	0	0	0	4	0	0	0	0	19
17:30	1	17	0	2	0	1	0	11	0	0	0	0	32
17:45	0	11	0	0	0	1	0	10	0	0	0	0	22

Car traffic

Interval starts	SouthBound			Westbound			Northbound			Eastbound			Total
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
15:59	0	0	0	0	0	0	0	0	0	0	0	0	0
16:00	2	16	0	1	0	2	0	14	3	0	0	0	38
16:15	1	11	0	1	0	0	0	10	0	0	0	0	23
16:30	1	11	0	2	0	1	0	8	3	0	0	0	26
16:45	2	20	0	0	0	1	0	6	3	0	0	0	32
17:00	0	17	1	0	0	0	0	16	0	0	0	0	34
17:15	0	14	0	1	0	0	0	4	0	0	0	0	19
17:30	1	17	0	2	0	1	0	11	0	0	0	0	32
17:45	0	11	0	0	0	1	0	10	0	0	0	0	22

Truck traffic

Interval starts	SouthBound			Westbound			Northbound			Eastbound			Total
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
15:59	0	0	0	0	0	0	0	0	0	0	0	0	0
16:00	0	0	0	0	0	0	0	0	0	0	0	0	0
16:15	0	0	0	0	0	0	0	0	0	0	0	0	0
16:30	0	0	0	0	0	0	0	0	0	0	0	0	0
16:45	0	0	0	0	0	0	0	0	0	0	0	0	0
17:00	0	0	0	0	0	0	0	0	0	0	0	0	0
17:15	0	0	0	0	0	0	0	0	0	0	0	0	0
17:30	0	0	0	0	0	0	0	0	0	0	0	0	0
17:45	0	0	0	0	0	0	0	0	0	0	0	0	0

Pedestrian volumes

Interval starts	NE			NW			SW			SE			Total
	Left	Right	Total	Left	Right	Total	Left	Right	Total	Left	Right	Total	
15:59	0	0	0	0	0	0	0	0	0	0	0	0	0
16:00	0	0	0	0	0	0	0	0	0	0	0	0	0
16:15	0	0	0	0	0	0	0	0	0	0	0	0	0
16:30	0	2	2	0	0	0	1	0	1	0	0	0	3
16:45	0	0	0	0	0	0	0	0	0	0	0	0	0
17:00	0	0	0	0	0	0	0	0	0	0	0	0	0
17:15	0	0	0	2	0	2	0	0	0	0	0	0	2
17:30	0	0	0	1	0	1	0	0	0	0	0	0	1
17:45	0	0	0	0	1	1	0	0	0	0	0	0	1

Intersection Peak Hour

16:00 - 17:00

	SouthBound			Westbound			Northbound			Eastbound			Total
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
Vehicle Total	6	58	0	4	0	4	0	38	9	0	0	0	119
Factor	0.75	0.72	0.00	0.50	0.00	0.50	0.00	0.68	0.75	0.00	0.00	0.00	0.78
Approach Factor	0.73			0.67			0.69			0.00			

Peak Hour Vehicle Summary

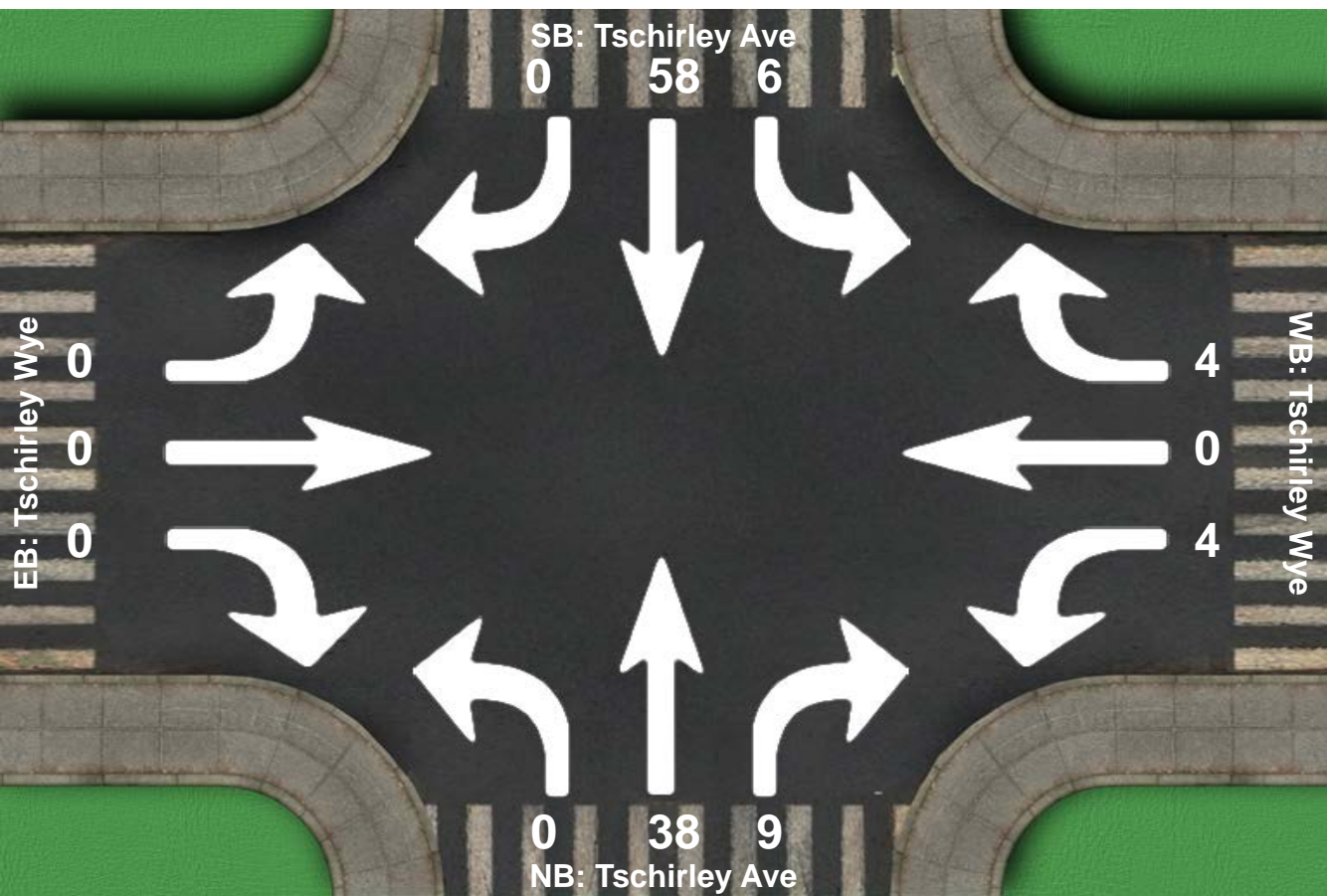
Vehicle	SouthBound			Westbound			Northbound			Eastbound			Total
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
Car	6	58	0	4	0	4	0	38	9	0	0	0	119
Truck	0	0	0	0	0	0	0	0	0	0	0	0	0

Peak Hour Pedestrians

	NE			NW			SW			SE			Total
	Left	Right	Total	Left	Right	Total	Left	Right	Total	Left	Right	Total	
Pedestrians	0	2	2	0	0	0	1	0	1	0	0	0	3

Intersection Peak Hour

Location: Tschirley Ave at Tschirley Wye, Spokane Valley, WA
GPS Coordinates: Lat=47.656960, Lon=-117.168645
Date: 2023-04-05
Day of week: Wednesday
Weather: Sunny
Analyst: ALW



Intersection Peak Hour

16:00 - 17:00

	SouthBound			Westbound			Northbound			Eastbound			Total
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
Vehicle Total	6	58	0	4	0	4	0	38	9	0	0	0	119
Factor	0.75	0.72	0.00	0.50	0.00	0.50	0.00	0.68	0.75	0.00	0.00	0.00	0.78
Approach Factor	0.73			0.67			0.69			0.00			

Intersection Peak Hour

16:45 - 17:45

	SouthBound			Westbound			Northbound			Eastbound			Total
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
Vehicle Total	3	46	3	2	0	5	0	38	1	4	0	0	102
Factor	0.25	0.77	0.38	0.25	0.00	0.62	0.00	0.95	0.25	0.50	0.00	0.00	0.85
Approach Factor	0.72			0.88			0.89			0.50			

Peak Hour Vehicle Summary

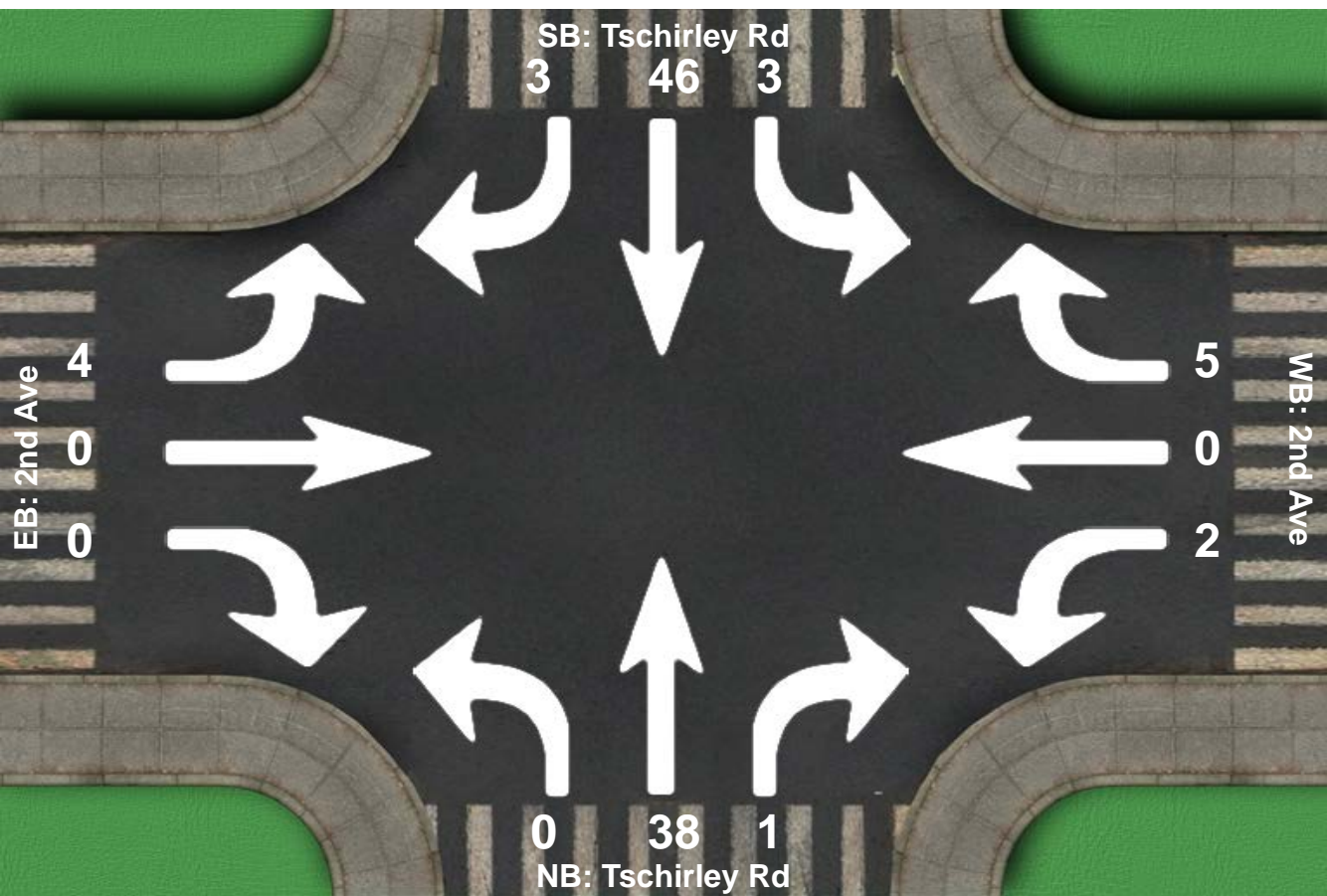
Vehicle	SouthBound			Westbound			Northbound			Eastbound			Total
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
Car	3	46	3	2	0	5	0	37	1	4	0	0	101
Truck	0	0	0	0	0	0	0	1	0	0	0	0	1

Peak Hour Pedestrians

[illegible]

Intersection Peak Hour

Location: Tschirley Rd at 2nd Ave , Spokane Valley, WA
GPS Coordinates: Lat=47.657041, Lon=-117.174976
Date: 2023-03-30
Day of week: Thursday
Weather: P Cloudy
Analyst: ALW



Intersection Peak Hour

16:45 - 17:45

	SouthBound			Westbound			Northbound			Eastbound			Total
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
Vehicle Total	3	46	3	2	0	5	0	38	1	4	0	0	102
Factor	0.25	0.77	0.38	0.25	0.00	0.62	0.00	0.95	0.25	0.50	0.00	0.00	0.85
Approach Factor	0.72			0.88			0.89			0.50			

Turn Count Summary

Analyst: Mike McCluskey

Total vehicle traffic

Interval starts	SouthBound			Westbound			Northbound			Eastbound			Total
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
16:00	9	1	3	0	1	6	4	8	0	0	2	0	34
16:15	4	5	2	0	1	3	3	4	0	1	3	1	27
16:30	6	12	1	0	1	3	0	5	0	1	1	0	30
16:45	4	9	1	0	1	5	2	3	0	5	0	0	30
17:00	0	5	2	0	0	2	2	5	1	0	0	0	17
17:15	8	12	2	0	0	2	1	1	0	2	1	1	30
17:30	1	9	0	0	0	3	1	5	0	0	0	0	19
17:45	3	4	0	0	2	2	0	5	0	1	0	1	18

Car traffic

Interval starts	SouthBound			Westbound			Northbound			Eastbound			Total
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
16:00	9	1	3	0	1	6	4	7	0	0	2	0	33
16:15	4	5	2	0	1	3	3	4	0	1	3	1	27
16:30	6	12	1	0	1	3	0	5	0	1	1	0	30
16:45	4	9	1	0	1	5	2	3	0	5	0	0	30
17:00	0	5	2	0	0	2	2	5	1	0	0	0	17
17:15	8	12	2	0	0	2	1	1	0	2	1	1	30
17:30	1	9	0	0	0	3	1	5	0	0	0	0	19
17:45	3	4	0	0	2	2	0	5	0	1	0	1	18

Truck traffic

[illegible]

Bicycles traffic

[illegible]

Pedestrian volumes

[illegible]

Intersection Peak Hour

16:00 - 17:00

	SouthBound			Westbound			Northbound			Eastbound			Total
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
Vehicle Total	23	27	7	0	4	17	9	20	0	7	6	1	121
Factor	0.64	0.56	0.58	0.00	1.00	0.71	0.56	0.62	0.00	0.35	0.50	0.25	0.89
Approach Factor	0.75			0.75			0.60			0.70			

Peak Hour Vehicle Summary

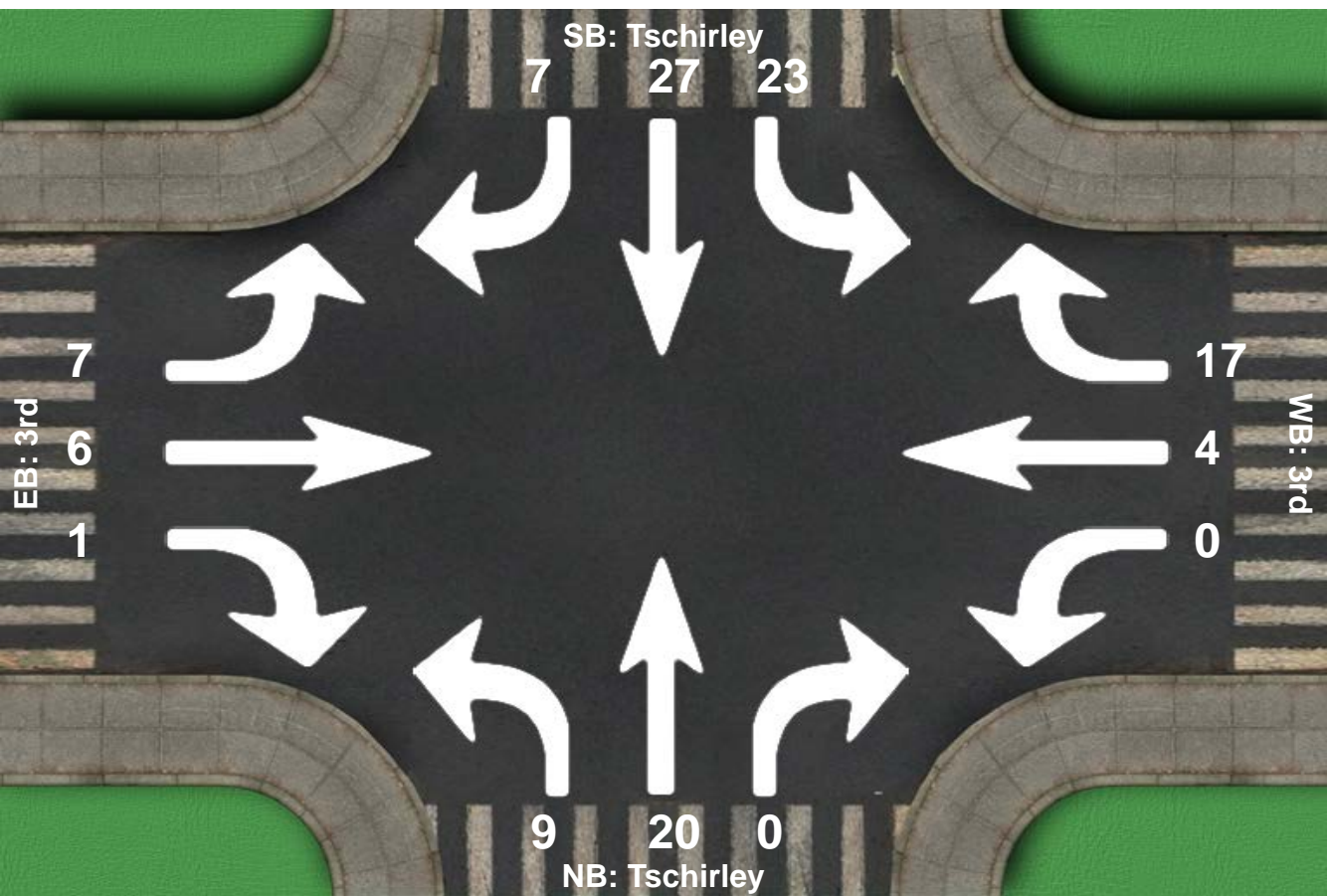
[illegible]

Peak Hour Pedestrians

[illegible]

Intersection Peak Hour

Location: Tschirley at 3rd, Spokane Valley
GPS Coordinates: Lat=47.541017, Lon=-117.393284
Date: 2022-11-16
Day of week: Wednesday
Weather: Overcast
Analyst: Mike McCluskey



Intersection Peak Hour

16:00 - 17:00

	SouthBound			Westbound			Northbound			Eastbound			Total
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
Vehicle Total	23	27	7	0	4	17	9	20	0	7	6	1	121
Factor	0.64	0.56	0.58	0.00	1.00	0.71	0.56	0.62	0.00	0.35	0.50	0.25	0.89
Approach Factor	0.75			0.75			0.60			0.70			

Intersection Peak Hour

16:45 - 17:45

	SouthBound			Westbound			Northbound			Eastbound			Total
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
Vehicle Total	0	27	2	1	0	2	4	29	0	4	1	6	76
Factor	0.00	0.75	0.50	0.25	0.00	0.50	0.50	0.91	0.00	0.50	0.25	0.50	0.86
Approach Factor	0.81			0.75			0.92			0.46			

Peak Hour Vehicle Summary

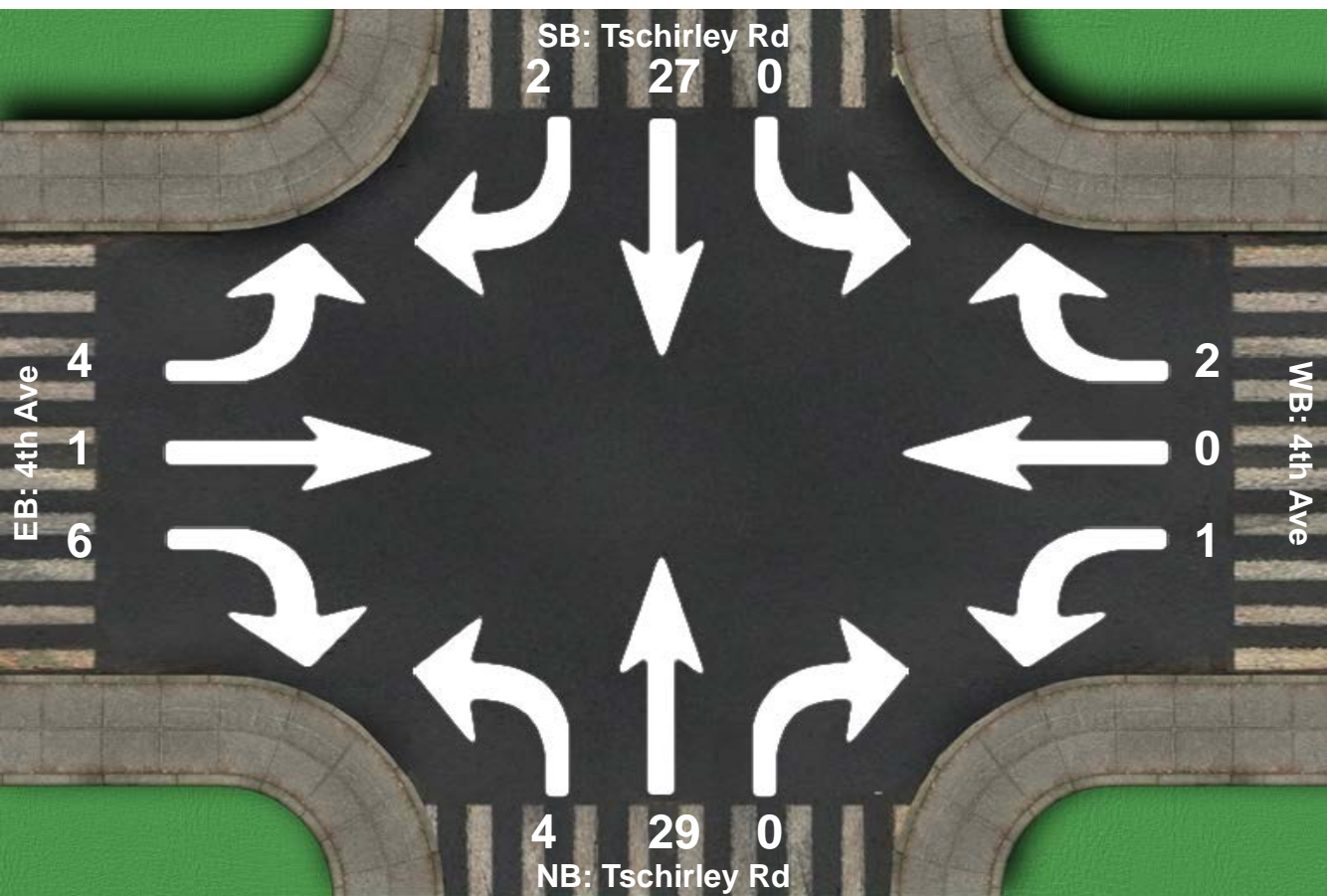
Vehicle	SouthBound			Westbound			Northbound			Eastbound			Total
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
Car	0	27	2	1	0	2	4	29	0	4	1	6	76
Truck	0	0	0	0	0	0	0	0	0	0	0	0	0

Peak Hour Pedestrians

	NE			NW			SW			SE			Total
	Left	Right	Total	Left	Right	Total	Left	Right	Total	Left	Right	Total	
Pedestrians	0	1	1	0	0	0	2	0	2	0	0	0	3

Intersection Peak Hour

Location: Tschirley Rd at 4th Ave, Spokane Valley, WA
GPS Coordinates: Lat=47.660389, Lon=-117.183993
Date: 2023-04-06
Day of week: Thursday
Weather: P Cloudy
Analyst: ALW



Intersection Peak Hour

16:45 - 17:45

	SouthBound			Westbound			Northbound			Eastbound			Total
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
Vehicle Total	0	27	2	1	0	2	4	29	0	4	1	6	76
Factor	0.00	0.75	0.50	0.25	0.00	0.50	0.50	0.91	0.00	0.50	0.25	0.50	0.86
Approach Factor	0.81			0.75			0.92			0.46			

PROJECT: Tschirley Apts
 JOB NO. 2220
 INTERSECTION: Tschirley / 5th

DATE OF COUNT: 4/6/23

TRAFFIC COUNT REDUCTION WORKSHEET PM PEAK HOURS
 15 Minute Period Beginning @

APPROACH	MOVEMENT	pass	trk	pass	trk	pass	trk	pass	trk	pass	trk	pass	trk	pass	trk	pass	trk
Eastbound	Left	1		1								2		2			
	Through																
	Right	1															
	App. Total	2	0	1	0	0	0	0	0	0	0	2	0	2	0	0	0
	Pct Trucks		0%		0%		####		####		####		0%		0%		####
Westbound	Left																
	Through																
	Right																
	App. Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Pct Trucks		####		####		####		####		####		####		####		####
Northbound	Left					2		1		1		1					
	Through	9		4		8		8		8		9		8		1	
	Right																
	App. Total	9	0	4	0	10	0	9	0	9	0	10	0	8	0	1	0
	Pct Trucks		0%		0%		0%		0%		0%		0%		0%		0%
Southbound	Left																
	Through	13		10		5		6		9		9		10		3	
	Right			1								1					
	App. Total	13	0	11	0	5	0	6	0	9	0	10	0	10	0	3	0
	Pct Trucks		0%		0%		0%		0%		0%		0%		0%		0%
Total Intersection Volume		24	0	16	0	15	0	15	0	18	0	22	0	20	0	4	0
Intersection Pct Trucks			0%		0%		0%		0%		0%		0%		0%		0%

Intersection Total One Hour Volumes	Pct Trucks
4:00	70 0.00%
4:15	64 0.00%
4:30	70 0.00%
4:45	75 0.00%
5:00	64 0.00%

PROJECT: Tschirley Apts
 JOB NO. 2220
 INTERSECTION: Tschirley / 5th

DATE OF COUNT: 4/6/23

PM PEAK HOUR BREAKDOWN

APPROACH	MOVEMENT	pass	trk	pass	trk	pass	trk	pass	trk	TOTAL
Eastbound	Left					2		2		4
	Through									0
	Right									0
	App. Total	0	0	0	0	2	0	2	0	4
	Pct Trucks		####		####		0%		0%	0%
Westbound	Left									0
	Through									0
	Right									0
	App. Total	0	0	0	0	0	0	0	0	0
	Pct Trucks		####		####		####		####	####
Northbound	Left	1		1		1				3
	Through	8		8		9		8		33
	Right									0
	App. Total	9	0	9	0	10	0	8	0	36
	Pct Trucks		0%		0%		0%		0%	0%
Southbound	Left									0
	Through	6		9		9		10		34
	Right					1				1
	App. Total	6	0	9	0	10	0	10	0	35
	Pct Trucks		0%		0%		0%		0%	0%
Total Intersection Volume		15	0	18	0	22	0	20	0	75
Intersection Pct Trucks			0%		0%		0%		0%	

P.H.F. : 0.85

Intersection Peak Hour

16:00 - 17:00

	SouthBound			Westbound			Northbound			Eastbound			Total
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
Vehicle Total	12	14	1	1	0	8	0	19	0	0	2	0	57
Factor	0.60	0.58	0.25	0.25	0.00	0.67	0.00	0.59	0.00	0.00	0.50	0.00	0.89
Approach Factor	0.75			0.75			0.59			0.50			

Peak Hour Vehicle Summary

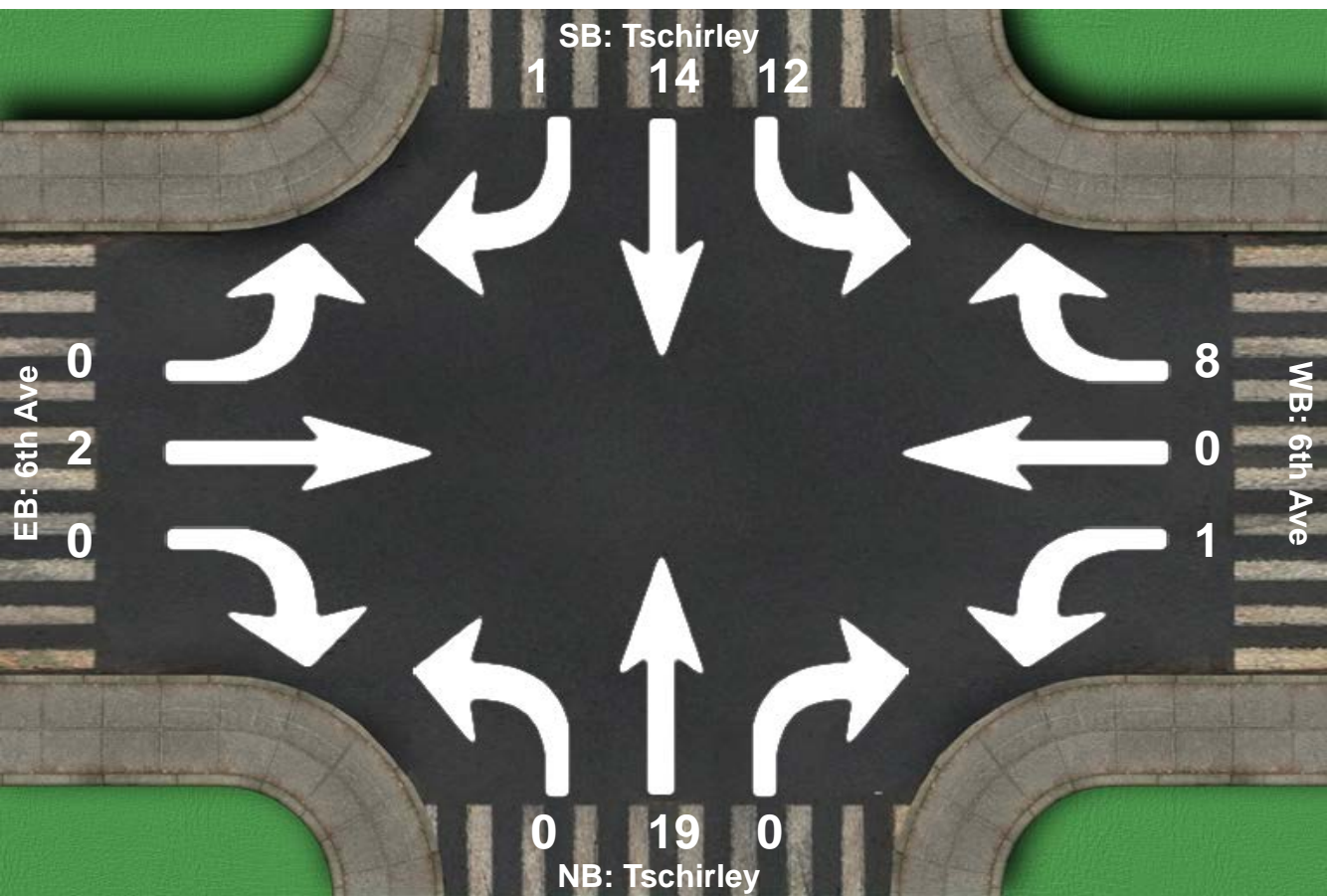
Vehicle	SouthBound			Westbound			Northbound			Eastbound			Total
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
Car	12	13	1	1	0	8	0	18	0	0	2	0	55
Truck	0	1	0	0	0	0	0	1	0	0	0	0	2

Peak Hour Pedestrians

[illegible]

Intersection Peak Hour

Location: Tschirley at 6th Ave, Spokane Valley, WA
GPS Coordinates: Lat=47.652285, Lon=-117.169807
Date: 2022-11-16
Day of week: Wednesday
Weather: Overcast
Analyst: ALW



Intersection Peak Hour

16:00 - 17:00

	SouthBound			Westbound			Northbound			Eastbound			Total
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
Vehicle Total	12	14	1	1	0	8	0	19	0	0	2	0	57
Factor	0.60	0.58	0.25	0.25	0.00	0.67	0.00	0.59	0.00	0.00	0.50	0.00	0.89
Approach Factor	0.75			0.75			0.59			0.50			

Total vehicle traffic

Interval starts	SouthBound			Westbound			Northbound			Eastbound			Total
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
16:00	71	6	36	3	213	34	6	7	1	38	189	6	610
16:15	43	4	29	2	220	35	8	4	0	25	210	4	584
16:30	46	2	33	5	218	23	10	2	2	34	232	4	611
16:45	58	8	28	6	223	24	6	2	3	51	197	8	614
17:00	46	8	37	5	203	23	3	3	4	41	230	3	606
17:15	73	3	38	7	224	33	5	5	1	43	228	2	662
17:30	51	3	26	5	171	24	2	3	2	29	209	10	535
17:45	42	12	22	3	166	20	9	6	1	27	179	10	497
18:00	0	0	0	0	0	0	0	0	0	1	0	0	1

Car traffic

[illegible]

Truck traffic

[illegible]

Pedestrian volumes

[illegible]

Intersection Peak Hour

16:30 - 17:30

	SouthBound			Westbound			Northbound			Eastbound			Total
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
Vehicle Total	223	21	136	23	868	103	24	12	10	169	887	17	2493
Factor	0.76	0.66	0.89	0.82	0.97	0.78	0.60	0.60	0.62	0.83	0.96	0.53	0.94
Approach Factor	0.83			0.94			0.82			0.98			

Peak Hour Vehicle Summary

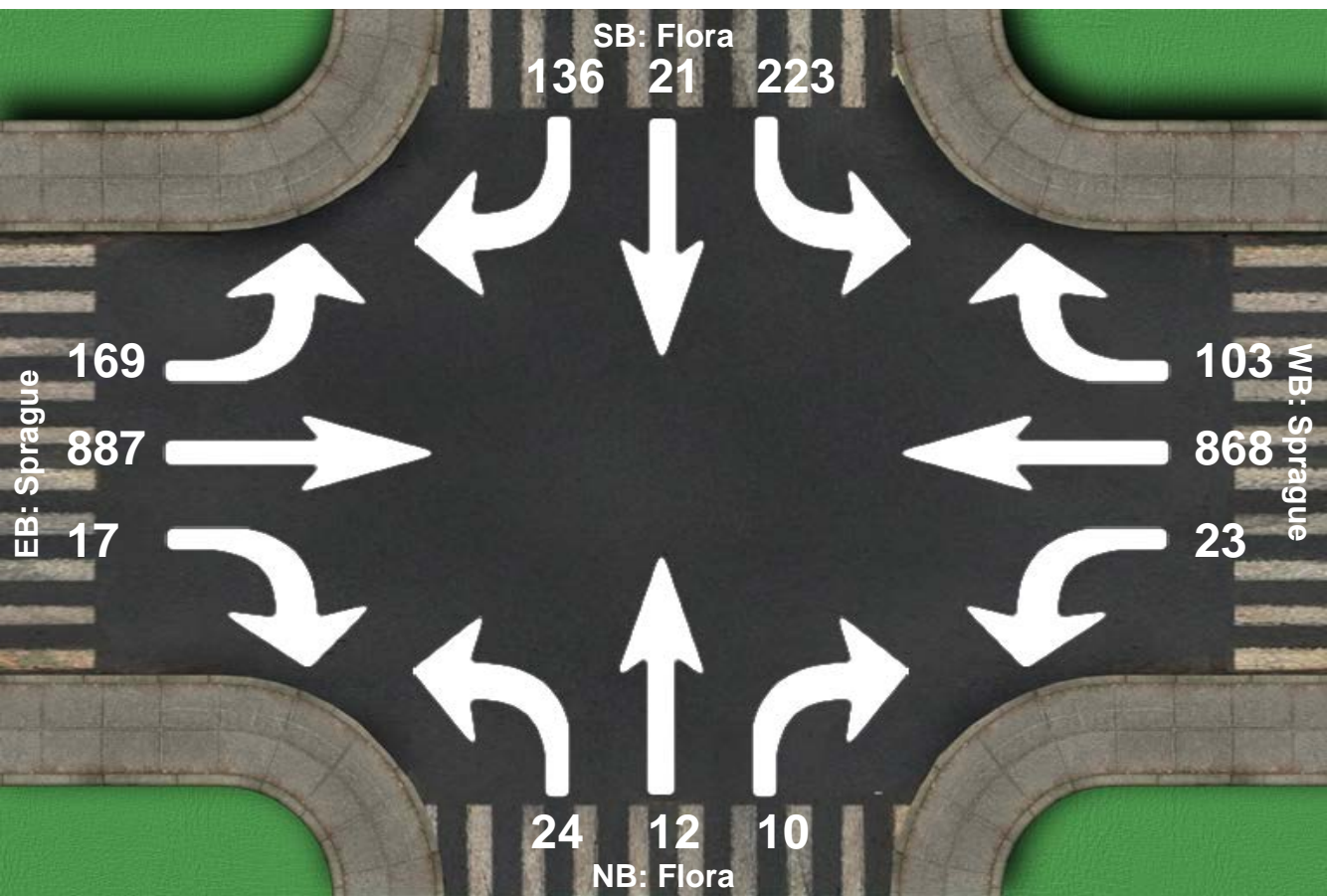
Vehicle	SouthBound			Westbound			Northbound			Eastbound			Total
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
Car	222	21	136	23	860	102	24	12	10	169	883	17	2479
Truck	1	0	0	0	8	1	0	0	0	0	4	0	14

Peak Hour Pedestrians

	NE			NW			SW			SE			Total
	Left	Right	Total	Left	Right	Total	Left	Right	Total	Left	Right	Total	
Pedestrians	0	1	1	1	1	2	0	1	1	0	0	0	4

Intersection Peak Hour

Location: Flora at Sprague, Spokane Valley, WA
GPS Coordinates: Lat=47.657009, Lon=-117.168575
Date: 2023-05-16
Day of week: Tuesday
Weather: Sunny
Analyst: ALW



Intersection Peak Hour

16:30 - 17:30

	SouthBound			Westbound			Northbound			Eastbound			Total
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
Vehicle Total	223	21	136	23	868	103	24	12	10	169	887	17	2493
Factor	0.76	0.66	0.89	0.82	0.97	0.78	0.60	0.60	0.62	0.83	0.96	0.53	0.94
Approach Factor	0.83			0.94			0.82			0.98			

TECHNICAL APPENDIX

SCHOOL DISMISSAL TRAFFIC COUNTS

Turn Count Summary

Location: Corbin Rd at Appleway, Spokane Valley, WA
GPS Coordinates: Lat=47.656996, Lon=-117.168598
Date: 2023-05-16
Day of week: Tuesday
Weather: Sunny
Analyst: ALW

Total vehicle traffic

Interval starts	SouthBound			Westbound			Northbound			Eastbound			Total
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
14:00	4	1	3	1	157	1	40	1	0	5	145	57	415
14:15	1	1	4	4	177	3	50	1	2	1	148	64	456
14:30	2	2	1	3	212	5	48	2	3	4	155	78	515
14:45	6	8	5	3	166	5	52	1	1	1	188	92	528
15:00	4	2	1	1	182	2	52	0	3	2	142	93	484

Car traffic

Interval starts	SouthBound			Westbound			Northbound			Eastbound			Total
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
14:00	0	1	2	1	149	1	40	0	0	3	145	56	398
14:15	1	1	4	4	169	3	50	1	2	1	144	63	443
14:30	1	2	1	3	210	3	48	2	3	1	153	78	505
14:45	4	5	2	3	163	1	52	1	1	1	186	89	508
15:00	3	2	1	1	180	2	52	0	3	2	140	89	475

Truck traffic

Interval starts	SouthBound			Westbound			Northbound			Eastbound			Total
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
14:00	4	0	1	0	8	0	0	1	0	2	0	1	17
14:15	0	0	0	0	8	0	0	0	0	0	4	1	13
14:30	1	0	0	0	2	2	0	0	0	3	2	0	10
14:45	2	3	3	0	3	4	0	0	0	0	2	3	20
15:00	1	0	0	0	2	0	0	0	0	0	2	4	9

Pedestrian volumes

Interval starts	NE			NW			SW			SE			Total
	Left	Right	Total	Left	Right	Total	Left	Right	Total	Left	Right	Total	
14:00	0	0	0	0	0	0	0	1	1	0	0	0	1
14:15	0	0	0	0	0	0	0	0	0	1	1	2	2
14:30	0	0	0	1	24	25	1	0	1	0	0	0	26
14:45	0	0	0	0	30	30	1	1	2	0	0	0	32
15:00	0	1	1	0	3	3	3	0	3	0	0	0	7

Intersection Peak Hour

14:15 - 15:15

	SouthBound			Westbound			Northbound			Eastbound			Total
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
Vehicle Total	13	13	11	11	737	15	202	4	9	8	633	327	1983
Factor	0.54	0.41	0.55	0.69	0.87	0.75	0.97	0.50	0.75	0.50	0.84	0.88	0.94
Approach Factor	0.49			0.87			0.98			0.86			

Peak Hour Vehicle Summary

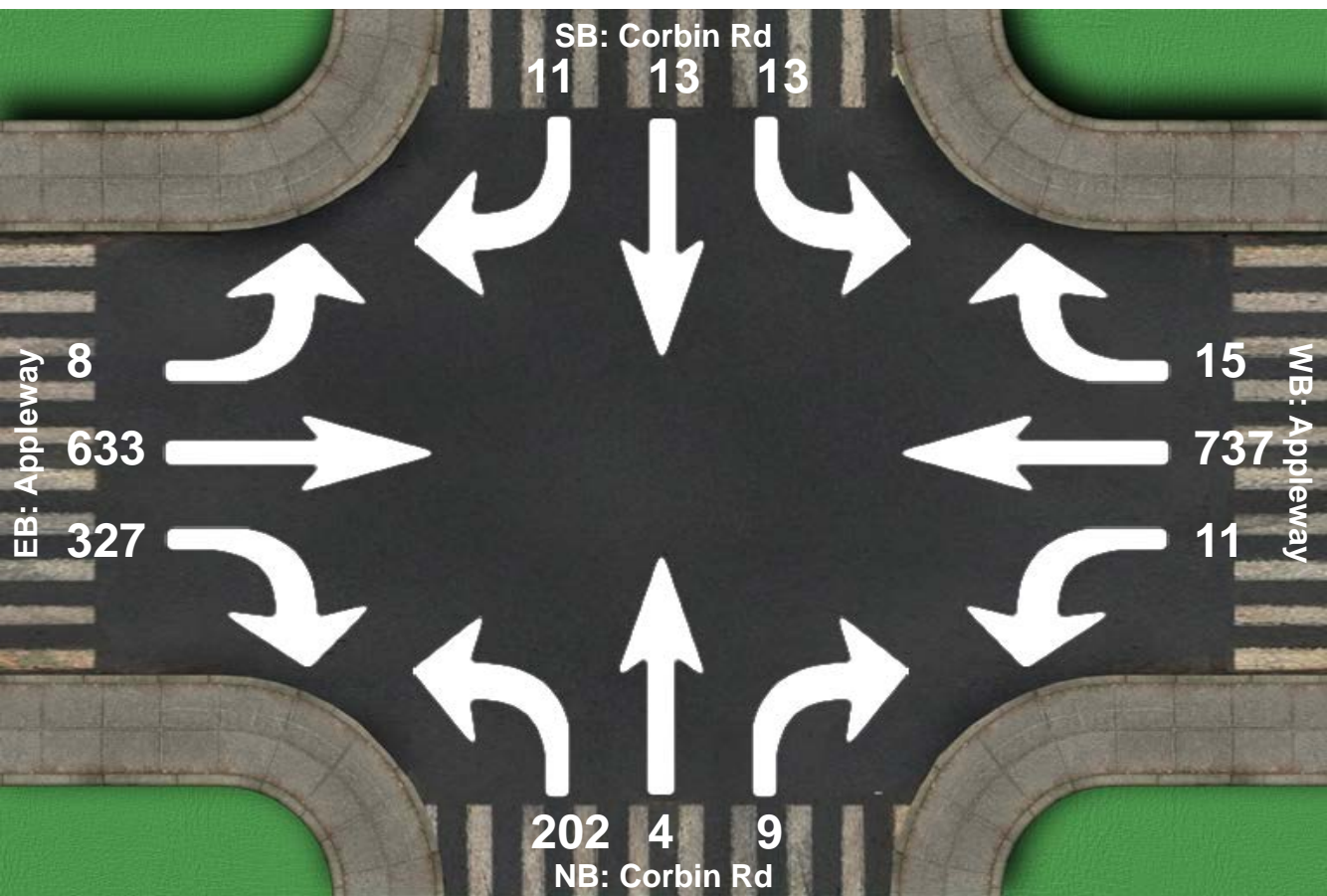
Vehicle	SouthBound			Westbound			Northbound			Eastbound			Total
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
Car	9	10	8	11	722	9	202	4	9	5	623	319	1931
Truck	4	3	3	0	15	6	0	0	0	3	10	8	52

Peak Hour Pedestrians

	NE			NW			SW			SE			Total
	Left	Right	Total	Left	Right	Total	Left	Right	Total	Left	Right	Total	
Pedestrians	0	1	1	1	57	58	5	1	6	1	1	2	67

Intersection Peak Hour

Location: Corbin Rd at Appleway, Spokane Valley, WA
GPS Coordinates: Lat=47.656996, Lon=-117.168598
Date: 2023-05-16
Day of week: Tuesday
Weather: Sunny
Analyst: ALW



Intersection Peak Hour

14:15 - 15:15

	SouthBound			Westbound			Northbound			Eastbound			Total
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
Vehicle Total	13	13	11	11	737	15	202	4	9	8	633	327	1983
Factor	0.54	0.41	0.55	0.69	0.87	0.75	0.97	0.50	0.75	0.50	0.84	0.88	0.94
Approach Factor	0.49			0.87			0.98			0.86			

Intersection Peak Hour

14:30 - 15:30

	SouthBound			Westbound			Northbound			Eastbound			Total
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
Vehicle Total	0	0	0	55	941	9	30	0	22	0	996	58	2111
Factor	0.00	0.00	0.00	0.57	0.96	0.56	0.83	0.00	0.61	0.00	0.86	0.81	0.92
Approach Factor	0.00			0.98			0.87			0.87			

Peak Hour Vehicle Summary

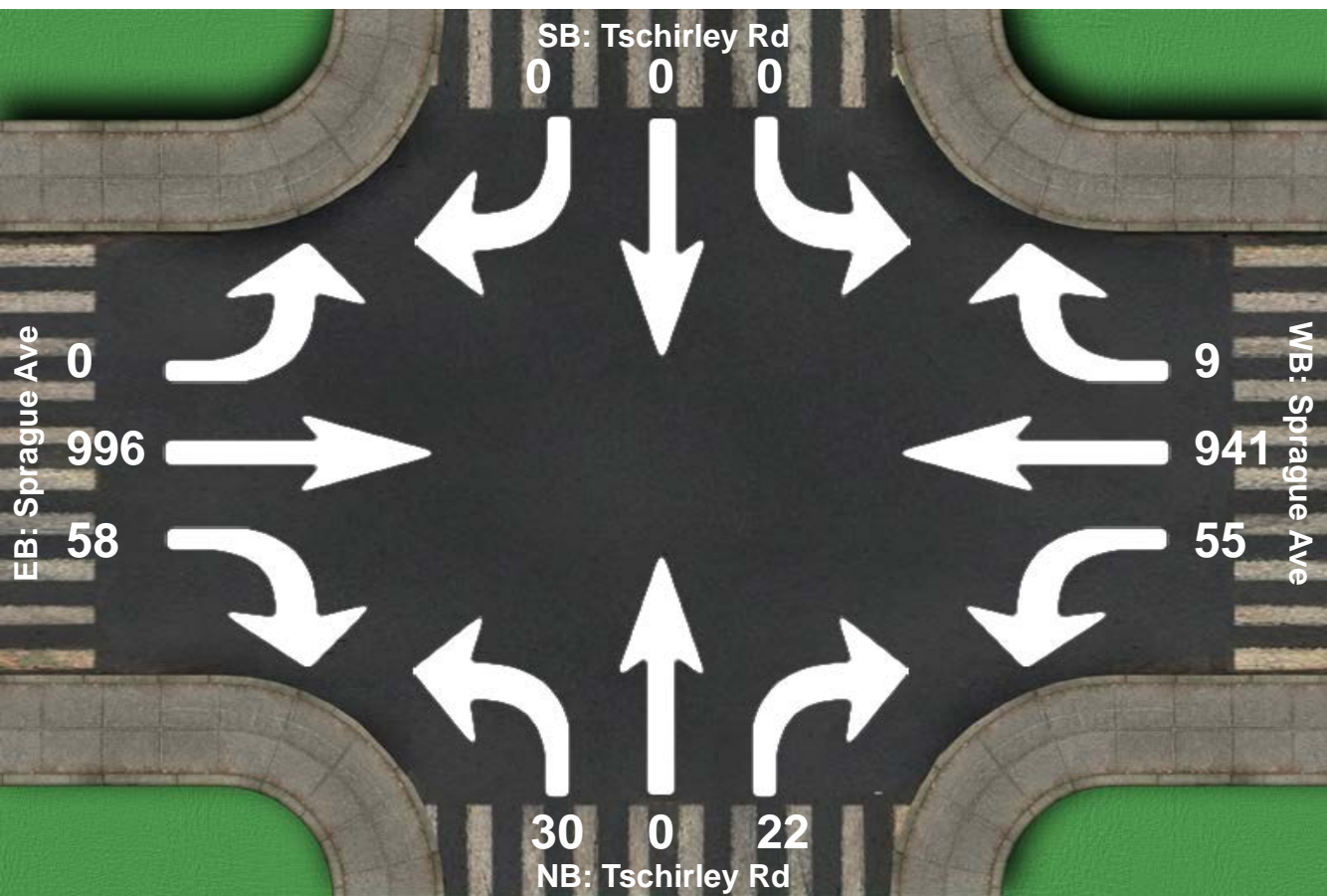
Vehicle	SouthBound			Westbound			Northbound			Eastbound			Total
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
Car	0	0	0	55	928	9	29	0	22	0	986	58	2087
Truck	0	0	0	0	13	0	1	0	0	0	10	0	24

Peak Hour Pedestrians

	NE			NW			SW			SE			Total
	Left	Right	Total	Left	Right	Total	Left	Right	Total	Left	Right	Total	
Pedestrians	0	1	1	0	0	0	0	2	2	1	0	1	4

Intersection Peak Hour

Location: Tschirley Rd at Sprague Ave, Spokane Valley, WA
GPS Coordinates: Lat=47.656833, Lon=-117.171745
Date: 2023-05-11
Day of week: Thursday
Weather: Sunny
Analyst: ALW



Intersection Peak Hour

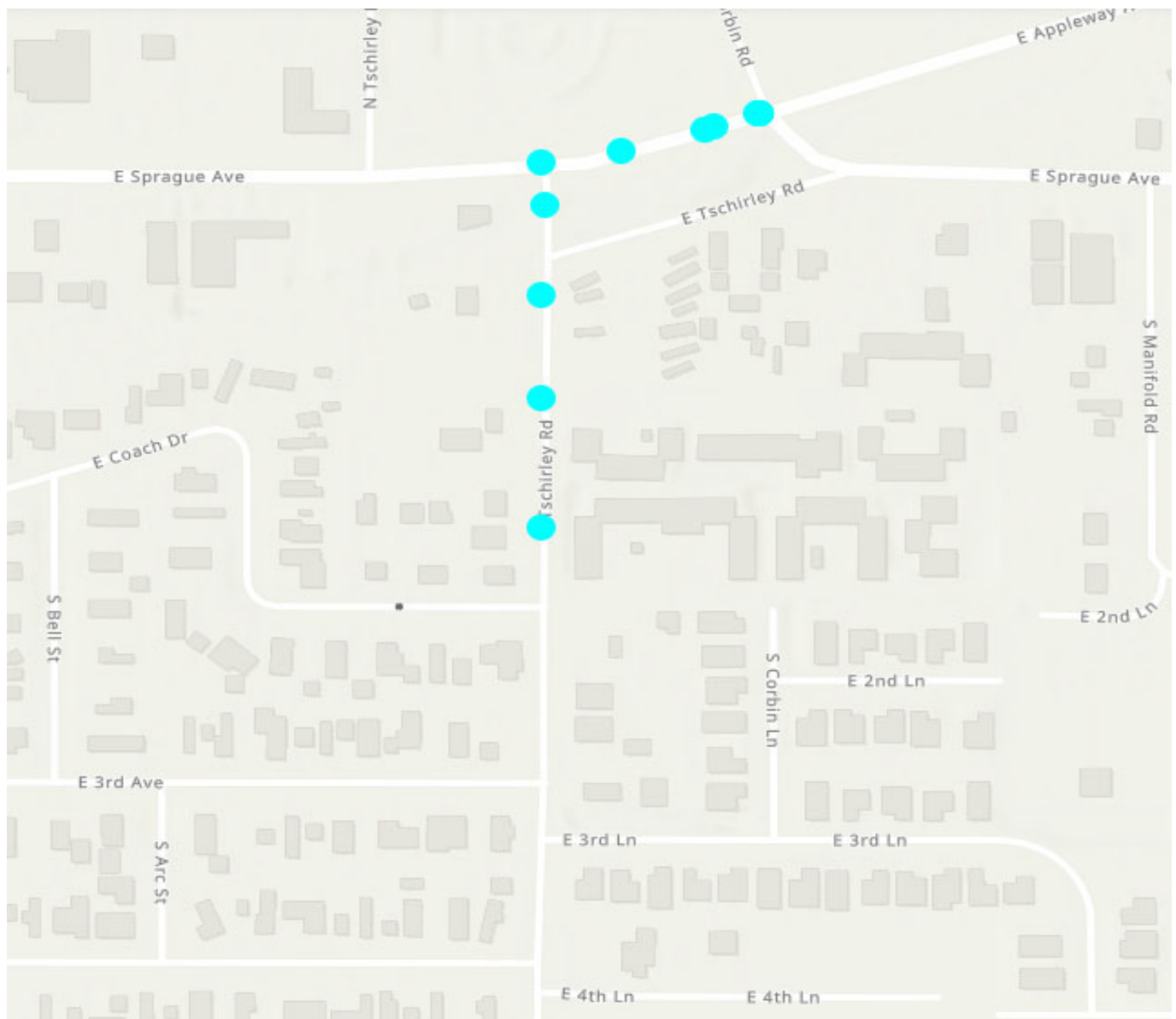
14:30 - 15:30

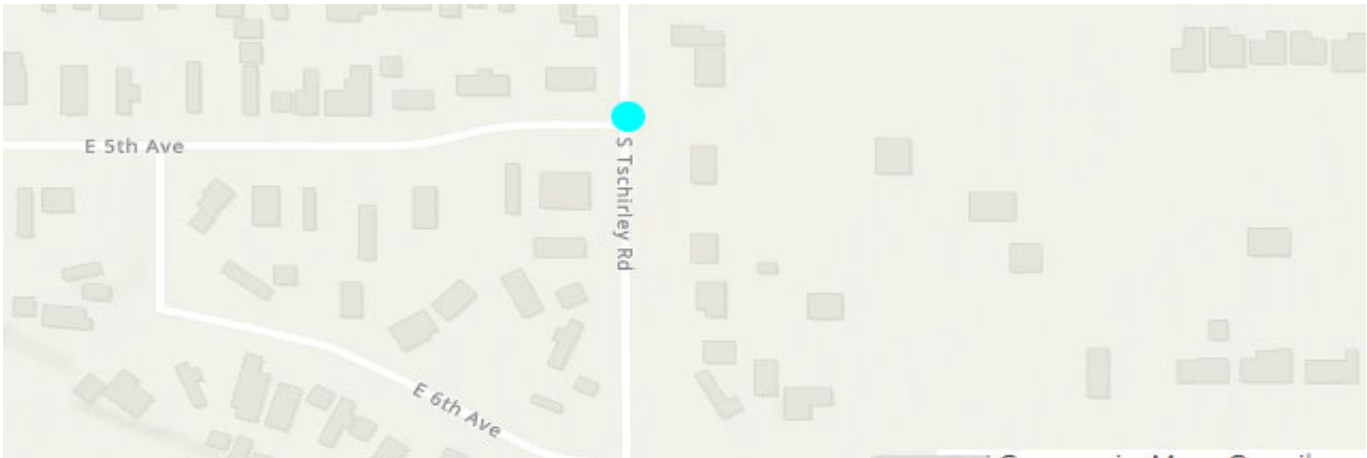
	SouthBound			Westbound			Northbound			Eastbound			Total
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
Vehicle Total	0	0	0	55	941	9	30	0	22	0	996	58	2111
Factor	0.00	0.00	0.00	0.57	0.96	0.56	0.83	0.00	0.61	0.00	0.86	0.81	0.92
Approach Factor	0.00			0.98			0.87			0.87			

TECHNICAL APPENDIX

Crash Data

Shape	NON-REPO	TARGET	ZE	WA STATE	WA STATE	Latitude	Longitude	JURISDICTION	COUNTY	CITY
Reportable	1	2461296	864844.4	47.65721	-117.169	City Street	Spokane	Spokane Va		
Reportable	1	2461050	863210.9	47.65277	-117.17	City Street	Spokane	Spokane Va		
Reportable	1	2461220	864815.9	47.65714	-117.169	City Street	Spokane	Spokane Va		
Reportable	1	2461296	864844.4	47.65721	-117.169	City Street	Spokane	Spokane Va		
Reportable	1	2461098	864776.6	47.65705	-117.169	City Street	Spokane	Spokane Va		
Reportable	1	2461296	864844.4	47.65721	-117.169	City Street	Spokane	Spokane Va		
Reportable	1	2461296	864845.5	47.65721	-117.169	City Street	Spokane	Spokane Va		
Reportable	1	2460993	864538.3	47.65641	-117.17	City Street	Spokane	Spokane Va		
Reportable	1	2461010	864165.3	47.65538	-117.17	City Street	Spokane	Spokane Va		
Reportable	1	2460991	864682.9	47.6568	-117.17	City Street	Spokane	Spokane Va		
Reportable	1	2461232	864820.3	47.65715	-117.169	City Street	Spokane	Spokane Va		
Reportable	1	2461001	864372.4	47.65595	-117.17	City Street	Spokane	Spokane Va		
NED	0	2460983	864753.4	47.657	-117.17	City Street	Spokane	Spokane Va		





REPORT NU	INDEXED P	PRIMARY T	BLOCK NU	MILEPOST	A/B	INTERSECT	DIST FROM	MI or FT	COMP DIR
E812576	E	APPLEW/	E	APPLEW/	0	N CORBIN LN			
E837126	S	TSCHIRLE	S	TSCHIRLE	0	E 5TH AVE			
E847705	E	SPRAGUE	E	SPRAGUE	17400		80 F		W
E854644	E	SPRAGUE	E	SPRAGUE	0	N CORBIN LN			
EA39907	E	SPRAGUE	E	SPRAGUE	17400		118 F		E
EA55712	E	SPRAGUE	E	SPRAGUE	17461	N CORBIN LN			
EA83435	E	SPRAGUE	E	SPRAGUE	17481	N CORBIN LN			
EB01620	S	TSCHIRLE	S	TSCHIRLE	100		0.09 M		N
EB26173	S	TSCHIRLE	S	TSCHIRLE	100		127 F		N
EB35633	S	TSCHIRLE	S	TSCHIRLE	0	E SPRAGUE AVE			
EB38901	E	SPRAGUE	E	SPRAGUE	17400	N CORBIN LN			
EC10155	S	TSCHIRLE	S	TSCHIRLE	100		381 F		S
EC46791	S	TSCHIRLE	S	TSCHIRLE	80	E SPRAGUE AVE			



REFERENCE	LAST TRAN DATE	YEAR	QTR #	MONTH	MOST SEVE	MOST SEVE	TOTAL CRA	FATAL CRA
	31-Aug-18	27-Jun-18	2018 Q2	Jun	HBD - Abili	Suspected	1	0
	12-Sep-18	11-Sep-18	2018 Q3	Sep	Had NOT B	Possible Inj	1	0
E APPLEW	14-Nov-18	10-Oct-18	2018 Q4	Oct	Had NOT B	No Appare	1	0
	7-Dec-18	29-Oct-18	2018 Q4	Oct	Unknown	Suspected	1	0
S TSCHIRLE	10-Jul-20	4-Jun-20	2020 Q2	Jun		No Appare	1	0
	28-Aug-20	12-Aug-20	2020 Q3	Aug		No Appare	1	0
	15-Dec-20	22-Nov-20	2020 Q4	Nov		Possible Inj	1	0
E COACH D	25-Feb-21	27-Jan-21	2021 Q1	Jan		Suspected	1	0
E COACH D	3-Jun-21	29-Apr-21	2021 Q2	Apr		No Appare	1	0
	13-Jul-21	2-Jun-21	2021 Q2	Jun		No Appare	1	0
	21-Jul-21	10-Jun-21	2021 Q2	Jun		No Appare	1	0
E SPRAGUE	21-Apr-22	5-Jan-22	2022 Q1	Jan		No Appare	1	0
	26-Jul-22	1-Apr-22	2022 Q2	Apr		No Appare	1	0

SERIOUS IN EVIDENT IN POSSIBLE II PDO - NO II TOTAL FAT.TOTAL SER TOTAL EVII TOTAL POS TOTAL VEH TOTAL PED									
0	1	0	0	0	0	1	0	1	0
0	0	1	0	0	0	0	1	2	0
0	0	0	1	0	0	0	0	3	0
0	1	0	0	0	0	1	0	1	1
0	0	0	1	0	0	0	0	1	0
0	0	0	1	0	0	0	0	2	0
0	0	1	0	0	0	0	1	2	0
0	1	0	0	0	0	1	0	1	1
0	0	0	1	0	0	0	0	2	0
0	0	0	1	0	0	0	0	2	0
0	0	0	1	0	0	0	0	2	0
0	0	0	1	0	0	0	0	2	0
0	0	0	1	0	0	0	0	2	0

TOTAL BICYCLIST WORKZON FIRST COLL SECOND COLL JUNCTION WEATHER ROAD SURF LIGHTING (ROADWAY LOCATION

1	Within Workzone	Vehicle Strikes Pedalcyclist	At Intersection	Clear or Partly Cloudy	Dry	Daylight	Straight & Level
0	Entering at angle		At Intersection	Overcast	Dry	Daylight	Straight & Level
0	From same direction	From same direction	Intersection	Clear or Partly Cloudy	Dry	Daylight	Straight & Level
0	Vehicle going straight		At Intersection	Clear or Partly Cloudy	Wet	Dark-Street	Straight & Level
0	Linear Curbside Fence		Not at Intersection	Clear	Dry	Dark-Street	Straight & Level
0	From opposite direction		At Intersection	Clear or Partly Cloudy	Dry	Dark-Street	Straight & Level
0	From same direction		At Intersection	Clear or Partly Cloudy	Dry	Daylight	Straight & Level
0	Vehicle going straight		Not at Intersection	Overcast	Dry	Dark-No Street	Straight & Level
0	One parked--one moving		Not at Intersection	Clear	Dry	Dusk	Straight & Level
0	From same direction		At Intersection	Clear or Partly Cloudy	Dry	Daylight	Straight & Level
0	From same direction		At Intersection	Clear or Partly Cloudy	Dry	Daylight	Straight & Level
0	From opposite direction		At Driveway	Overcast	Snow/Slush	Daylight	Straight & Level
0	Entering at angle		At Intersection	Clear	Dry	Daylight	Curve & Level

MISC TRAF COUNTY RI ARM

History/Su	FIRST IMPA SECOND IM SR ONLY, V SR ONLY, V SR ONLY, V SR ONLY, V
No	Lane of Primary Trafficway
No	Lane of Primary Trafficway
No	Lane of Prii Lane of Primary Trafficway
No	Lane of Primary Trafficway
No	Outside Sh: Past the Outside Shoulder of Primary Trafficway
No	Lane of Primary Trafficway
No	Lane of Primary Trafficway
No	Outside Shoulder of Primary Trafficway
No	Outside Shoulder of Primary Trafficway
No	Lane of Primary Trafficway
No	Lane of Primary Trafficway
No	Lane of Primary Trafficway
No	Lane of Primary Trafficway

VEH 1 TYPE	VEH 1 MAKE	VEH 1 MODEL	VEH 1 STYLE	VEH 1 ACTION	VEH 1 COM	VEH 1 COM	VEH 1 USA	VEH 1 TRAI	VEH 1 POS
Not Stated				Going Strai East	West			Signals	35
Pickup, Pan	DODGE	RAM 1500	Pickup	Making Lef West	Northeast			Stop Sign	25
Passenger	GEO	PRIZM	Sedan	Going Strai West	East			Signals	35
Not Stated				Going Strai West	East			Signals	35
Pickup, Pan	DODGE	RAM 1500	Pickup	Changing L West	East			No Traffic Control	
Pickup, Pan	DODGE	GRAND CA	VAN PASSE	Making Lef South	West		Vanette Ur	Signals	35
Passenger	MAZDA	3	Sedan	Going Strai West	East			Signals	35
Pickup, Pan	DODGE	GRAND CA	VAN PASSE	Going Strai North	South		Vanette Ur	No Traffic Control	
Not Stated				Going Straight Ahead				No Traffic Control	
Passenger	MAZDA	6	Sedan	Starting in	South	North		Stop Sign	
Passenger	DODGE	AVENGER	Sedan	Going Strai West	East			Signals	35
Passenger	HYUNDAI	ELANTRA	Sedan	Making Lef North	East			No Traffic C	25
Pickup, Pan	GMC	ACADIA	UTILITY	Making Lef South	West		Vanette Ur	Stop Sign	

VEH 1 COM	VEH 1 COM	VEH 1 COM	VEH 1 CLASS	VEH 1 CON	VEH 1 CON	VEH 1 CON	VEH 1 CON	VEH 2 TYPE	VEH 2 MAKE	VEH 2 MODEL
No Defects										
No Defects								Pickup, Pan	CHEVROLET	EXPRESS G
No Defects								Passenger	HYUNDAI	ELANTRA
No Defects										
No Defects								Pickup, Pan	TOYOTA	SIENNA
No Defects								Pickup, Pan	ACURA	MDX
No Defects										
No Defects								Passenger	VOLKSWAGEN	JETTA
No Defects								Truck & Tr	FREIGHTLIN	M2
No Defects								Pickup, Pan	NISSAN	ROGUE
No Defects								Pickup, Pan	JEEP	GRAND CH
No Defects								Passenger	SUBARU	LEGACY

VEH 2 STYL VEH 2 ACTIVE VEH 2 COM VEH 2 COM VEH 2 USA VEH 2 TRAI VEH 2 POS VEH 2 COM VEH 2 COM VEH 2 COM

CARGO VAI	Going Strai North	South	Vanette Ur	No Traffic (25
Sedan	Stopped fo Vehicle Sto	Vehicle Stopped		Signals	35

VAN PASSE	Going Strai North	South	Vanette Ur	Signals	35
UTILITY	Stopped at Vehicle Sto	Vehicle Sto	Vanette Ur	Signals	35

Sedan	Legally Parked, Unoccupied				
Truck	Stopped at South	North	Stop Sign		
UTILITY	Stopped at Vehicle Sto	Vehicle Sto	Vanette Ur	Signals	35
UTILITY	Going Strai South	North	Vanette Ur	No Traffic (25
Sedan	Going Strai East	East	No Traffic Control		

VEH 2 CLAS VEH 2 CON VEH 2 CON VEH 2 CON VEH 3 TYPE VEH 3 MAK VEH 3 STYL VEH 3 MOI VEH 3 ACTI VEH 3 COM

No Defects

No Defects

Pickup,Pan GMC

UTILITY

YUKON

Stopped at Vehicle Sto

No Defects

No Defects

No Defects

No Defects

No Defects

No Defects

VEH 3 COM VEH 3 USA VEH 3 TRA VEH 3 POS VEH 3 COM VEH 3 COM VEH 3 COM VEHICLE 3 VEH 3 CON VEH 3 CON

Vehicle Sto Vanette Ur Signals	35	No Defects
--------------------------------	----	------------

VEH 3 CON VEH 1 MV IVEH 1 MV IVEH 1 MV IVEH 1 MV IVEH 1 MV IVEH 1 MV IVEH 1 MOTVEH 1 MOTVEH 1 MOT

Unknown Other Contributing Circ Not Listed

43 Male No Appare Did Not Grant RW to Vehicle

32 Male No Appare Follow Too Closely

Unknown Other Contributing Circ Not Listed

46 No Appare Under Influence of Alcohol

16 Female No Appare Improper Turn/Merge

30 Female Possible Inj Follow Too Closely

54 Female No Appare None

Unknown Unknown Distraction

47 Male No Appare Distracted by Adjusting Vehicle Cntrls

16 Female No Appare Follow Too Closely

40 Female No Appare Did Not Grant RW to Vehicle

40 Female No Appare Improper Turn/Merge

[illegible]

VEH 2 MV I VEH 2 MV I VEH 2 MV I VEH 2 MV I VEH 2 MV I VEH 2 MO I VEH 2 MO I VEH 2 MO I VEH 2 MV I VEH 2 MV I

Male	Possible Inj Driver Not Distracted	Lap & Shou Not Ejectec
Male	No Appare None	Lap & Shou Not Ejectec
Female	No Appare None	Lap & Shou Not Ejectec
Male	No Appare None	Lap & Shou Not Ejectec
	None	
Male	No Appare None	Lap & Shou Not Ejectec
Female	No Appare None	Unknown Not Ejectec
Female	No Appare None	Lap & Shou Not Ejectec
Male	No Appare None	Lap & Shou Not Ejectec

VEH 3 MV IVEH 3 MV IVEH 3 MV IVEH 3 MOTIVEH 3 MOTIVEH 3 MOTIVEH 3 MV IVEH 3 MV IVEH 3 MV IVEH 3 MV I

None

Lap & Shou Not Ejected

VEH 3 MV I VEH 3 MV I VEH 3 MV I VEH 3 MV I VEH 3 MV I UNIT 2 PED UNIT 2 PED UNIT 2 PED UNIT 2 PED UNIT 2 PED

Collision Involving Motor Vehicle in Transport				
Xing at Inte		49 Mixed	Female	Suspected
Walking on		26 Dark	Male	Suspected

UNIT 2 PED UNIT 2 PED UNIT 2 PED UNIT 2 PED UNIT 2 PED UNIT 3 PED UNIT 3 PED UNIT 3 PED UNIT 3 PED UNIT 3 PED

None

Marked X v Person on Foot

Non Motorist on Wrong Side of R_c Shoulder Person on Foot

UNIT 3 PED UNIT 3 PED UNIT 3 PED UNIT 3 PED UNIT 3 PED UNIT 1 BIC' UNIT 1 BIC' UNIT 1 BIC' UNIT 1 BIC' UNIT 1 BIC'

UNIT 1 BIC'	UNIT 1 BIC'	UNIT 1 BIC'	UNIT 1 BIC'	UNIT 2 BIC'	UNIT 2 BIC'	UNIT 2 BIC'	UNIT 2 BIC'	UNIT 2 BIC'	UNIT 2 BIC'	UNIT 2 BIC'
				Xing or Ent	42 Mixed	Male	Suspected	Under Infl		

UNIT 2 BIC' UNIT 2 BIC' UNIT 2 BIC' UNIT 3 BIC' UNIT 3 BIC' UNIT 3 BIC' UNIT 3 BIC' UNIT 3 BIC' UNIT 3 BIC'
ience of Alcohol Marked X walk

UNIT 3 BIC' UNIT 3 BIC' HIT & RUN	TZ Work Zc	TZ Intersec	TZ Wrong \	TZ Wrong \	TZ Alcohol	TZ Alcohol	TZ Drug Im
Yes	1	1	0	0	1	1	0
No	0	1	0	0	0	0	0
No	0	1	0	0	0	0	0
Yes	0	1	0	0	0	0	0
Yes	0	0	0	0	1	1	1
No	0	1	0	0	0	0	0
No	0	1	0	0	0	0	0
No	0	0	0	0	0	0	0
Yes	0	0	0	0	0	0	0
No	0	1	0	0	0	0	0
No	0	1	0	0	0	0	0
No	0	0	0	0	0	0	0
No	0	1	0	0	0	0	0

[illegible]

TZ Unrestr:	TZ Drowsy	TZ Drowsy	TZ Run Off	TZ Non Jun	TZ Lane De	TZ MV Driv	TZ MV Driv	TZ MV Driv	TZ MV Driv
0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0
0	0	0	1	0	1	0	0	0	0
0	0	0	0	0	0	1	1	0	0
0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0
0	0	0	1	0	1	0	0	0	0
0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	1	2	0	0
0	0	0	0	0	0	0	0	1	1
0	0	0	0	0	0	1	1	0	0

TZ MV	Driv TZ	MV	Driv TZ	Wildlife	TZ Motorcy	TZ Total	Mi	TZ School E	TZ School E	TZ Heavy V	TZ Heavy V	TZ Vehicle
0		0		0		0		0		0		0
0		0		0		0		0		0		0
0		0		0		0		0		0		0
0		0		0		0		0		0		0
0		0		0		0		0		0		0
0		0		0		0		0		0		0
0		0		0		0		0		0		0
0		0		0		0		0		0		0
0		0		0		0		0		0		0
0		0		0		0		0		1		0
0		0		0		0		0		0		0
0		0		0		0		0		0		0
0		0		0		0		0		0		0

TZ Catostroc	TZ Pedestri	TZ Pedacyc	x	y
0	0	1	2543252	261231.8
0	0	0	2543015	259597.3
0	0	0	2543176	261202.9
0	1	0	2543252	261231.8
0	0	0	2543055	261163
0	0	0	2543252	261231.8
0	0	0	2543252	261232.9
0	1	0	2542951	260924.1
0	0	0	2542969	260551.3
0	0	0	2542947	261068.7
0	0	0	2543188	261207.4
0	0	0	2542959	260758.3
0	0	0	2542940	261139.2

TECHNICAL APPENDIX

Public Meeting Information

Issue	TIA Scope of Work	Data / Discussion
Additional Intersections Considered for Inclusion in Level of Service Analysis: <ul style="list-style-type: none"> ○ Sprague / Flora 	This intersection was included in the TIA.	
Additional Time Period Considered for Inclusion in Level of Service Analysis at: <ul style="list-style-type: none"> ○ Sprague / Tschirley ○ Appleway / Corbin 	This analysis was included.	There is concern that the traffic volumes and characteristics when Greenacres Middle School dismisses class could exceed p.m. peak hour conditions.
Internal Circulation / Effect of Additional East/West Connection Linking Site to Turtle Creek South	This is planned as an emergency access only and will be chained off.	The circulation plan is still preliminary and the status of this access point could change.
Sight Distance Analysis of Project Entrance Points to Tschirley Road	Included in Designated Section in TIA.	Significant grading will be required to establish adequate sight distance under the current layout.
Alternate Forms of Transportation <ul style="list-style-type: none"> ○ Sidewalks 	Sidewalks will be constructed along site frontage.	Off-site sidewalks will not be required.
The residents at the Good Sam facility often need assistance from the fire department. The fire truck, often the very large ladder truck, needs to have access past this site. Concerned with on street parking and fire truck cornering at Tschirley / 8th.		The frontage improvements need to meet agency standards. Parking could be restricted. The ladder truck can make very tight turns.
There is a problem with sight distance for westbound traffic on 6th observing northbound traffic		Tschirley is going through a vertical curve here, and vehicles are hidden from view within the sight triangle. This is an existing problem.
Think the density of housing is too great		Explained zoning
Concern for school pedestrian traffic		Pedestrian traffic uses the roadway and margins of the roads to complete their trips. These pedestrian trips occur now, and will increase with the Tschirley Apts

April 11, 2023 Traffic Meeting for Tschirley Apts

2220

Name	Address	E-mail
Gary Peters	16924 E 7th Ln SWA	
Pam & Vanna	17117 E 8th St ✓	
Monna Tschirley	17117 E 8th St ✓	
Alexis Schmitt	17117 E 8th St ✓	
Carolyn Githner		
Tom Swans	16925 E 7th Lane 99016	tsuseus@gmail.com
Cheri Swans	" " " 99016	girsus4@aol.com
Paul Nelson	14009 E 7th Lane	
" " " "		
Jerry Nelson	705 S. Tschirley Ln.	
David Nelson	705 S. Tschirley Ln	
Robert Mills	17502 E. 6th Ave	Chalearnp@hotmail.com
Chelene Fortitude	704 S. Tschirley Rd.	
Breanna Cropp	704 S. Tschirley Rd.	breanna.cropp@yahoo.com
Paul Cropp	704 S. Tschirley Rd.	
Freya O'Sullivan	17421 E 5th Ave	
Cheryl Williams	17421 E 5th Ave	
Kevin Camp	17908 E. 12th St	
Toni & Doug Groot	715 S. Florida	N/A

2220

[illegible]

adversky@mail.ru

2220

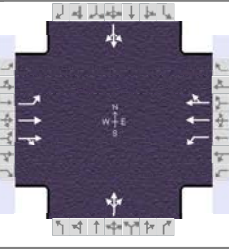
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740175@outlook.com

TECHNICAL APPENDIX

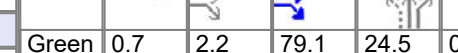

EXISTING LEVEL OF SERVICE CALCULATIONS

HCS Signalized Intersection Results Summary

General Information					Intersection Information		
Agency	Sunburst Engineering				Duration, h	0.250	
Analyst	ALW	Analysis Date	5/24/2023	Area Type	Other		
Jurisdiction		Time Period	AM Peak	PHF	0.76		
Urban Street	Appleway	Analysis Year	2023	Analysis Period	1> 7:00		
Intersection	Appleway / Corbin	File Name	EX AM Appleway.xus				
Project Description	Tschirley Apts						

Demand Information	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Demand (v), veh/h	15	380	133	3	499	8	184	14	3	5	7	11

Signal Information												
Cycle, s	120.0	Reference Phase	2									
Offset, s	0	Reference Point	End									
Uncoordinated	No	Simult. Gap E/W	On	Green	0.7	2.2	79.1	24.5	0.0	0.0		
				Yellow	3.5	0.0	3.5	3.5	0.0	0.0		
Force Mode	Fixed	Simult. Gap N/S	On	Red	1.0	0.0	1.0	1.0	0.0	0.0		

			
1	2	3	4
5	6	7	8

Timer Results	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Assigned Phase	5	2	1	6		8		4
Case Number	2.0	4.0	2.0	4.0		8.0		8.0
Phase Duration, s	7.4	85.8	5.2	83.6		29.0		29.0
Change Period, ($Y+R_c$), s	4.5	4.5	4.5	4.5		4.5		4.5
Max Allow Headway (MAH), s	3.1	0.0	3.1	0.0		3.2		3.2
Queue Clearance Time (g_s), s	3.3		2.3			24.4		3.7
Green Extension Time (g_e), s	0.0	0.0	0.0	0.0		0.1		0.5
Phase Call Probability	0.48		0.12			1.00		1.00
Max Out Probability	0.00		0.00			1.00		0.00

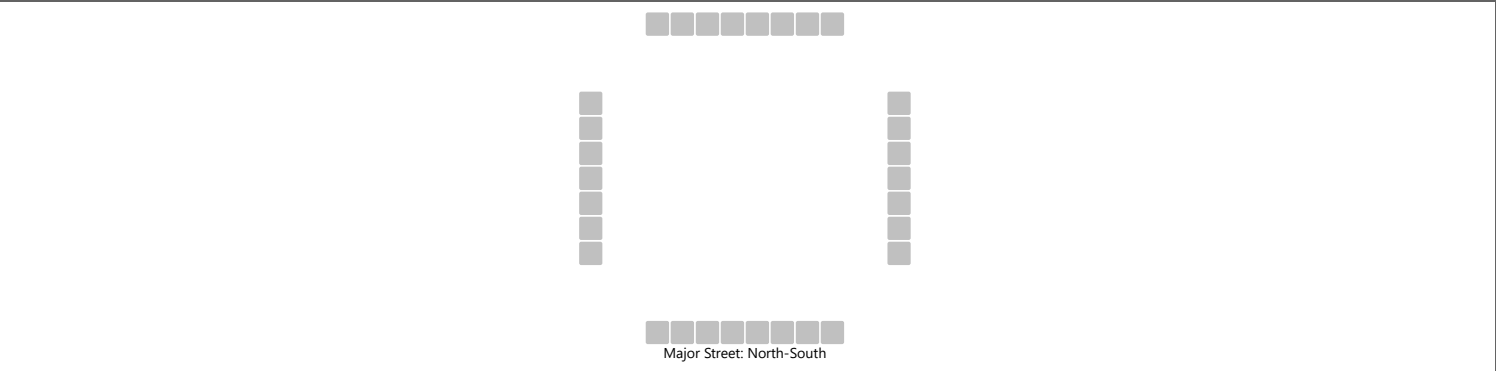
Movement Group Results	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Assigned Movement	5	2	12	1	6	16	3	8	18	7	4	14
Adjusted Flow Rate (v), veh/h	20	353	322	4	336	331		264			30	
Adjusted Saturation Flow Rate (s), veh/h/ln	1810	1950	1762	1810	1950	1923		1475			1882	
Queue Service Time (g_s), s	1.3	8.6	8.7	0.3	8.5	8.5		20.8			0.0	
Cycle Queue Clearance Time (g_c), s	1.3	8.6	8.7	0.3	8.5	8.5		22.4			1.7	
Green Ratio (g/C)	0.02	0.68	0.68	0.01	0.66	0.66		0.20			0.20	
Capacity (c), veh/h	44	1320	1193	11	1286	1268		359			421	
Volume-to-Capacity Ratio (X)	0.452	0.267	0.270	0.353	0.261	0.261		0.738			0.072	
Back of Queue (Q), ft/ln (95 th percentile)	27.9	157	143.9	6.3	158.2	156.2		325.2			32.6	
Back of Queue (Q), veh/ln (95 th percentile)	1.1	6.3	5.8	0.3	6.3	6.2		13.0			1.3	
Queue Storage Ratio (RQ) (95 th percentile)	0.00	0.00	0.00	0.00	0.00	0.00		0.00			0.00	
Uniform Delay (d_1), s/veh	57.8	7.6	7.7	59.4	8.4	8.4		46.9			38.7	
Incremental Delay (d_2), s/veh	2.7	0.5	0.6	6.9	0.5	0.5		6.4			0.0	
Initial Queue Delay (d_3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0		0.0			0.0	
Control Delay (d), s/veh	60.5	8.1	8.2	66.3	8.9	8.9		53.3			38.7	
Level of Service (LOS)	E	A	A	E	A	A		D			D	
Approach Delay, s/veh / LOS	9.7	A		9.3	A		53.3	D		38.7	D	
Intersection Delay, s/veh / LOS	17.0						B					

Multimodal Results	EB		WB		NB		SB	
Pedestrian LOS Score / LOS	1.65	B	1.65	B	2.30	B	2.30	B
Bicycle LOS Score / LOS	1.06	A	1.04	A	0.92	A	0.54	A

HCS Two-Way Stop-Control Report

General Information		Site Information	
Analyst	ALW	Intersection	Sprague / Tschirley Wye
Agency/Co.	Sunburst Engineering	Jurisdiction	Spokane Valley, WA
Date Performed	5/24/2023	East/West Street	Tschirley Wye
Analysis Year	2023	North/South Street	Sprague Ave
Time Analyzed	AM Peak	Peak Hour Factor	0.96
Intersection Orientation	North-South	Analysis Time Period (hrs)	0.25
Project Description	Tschirley Apts		

Lanes



Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority		10	11	12		7	8	9	1U	1	2	3	4U	4	5	6
Number of Lanes		0	1	0		0	0	0	0	0	1	0	0	0	1	0
Configuration			LR							LT						TR
Volume (veh/h)		3		1						1	174				87	3
Percent Heavy Vehicles (%)		0		0						0						
Proportion Time Blocked																
Percent Grade (%)	0															
Right Turn Channelized																
Median Type Storage	Undivided															

Critical and Follow-up Headways

Base Critical Headway (sec)		7.1		6.2						4.1						
Critical Headway (sec)		6.40		6.20						4.10						
Base Follow-Up Headway (sec)		3.5		3.3						2.2						
Follow-Up Headway (sec)		3.50		3.30						2.20						

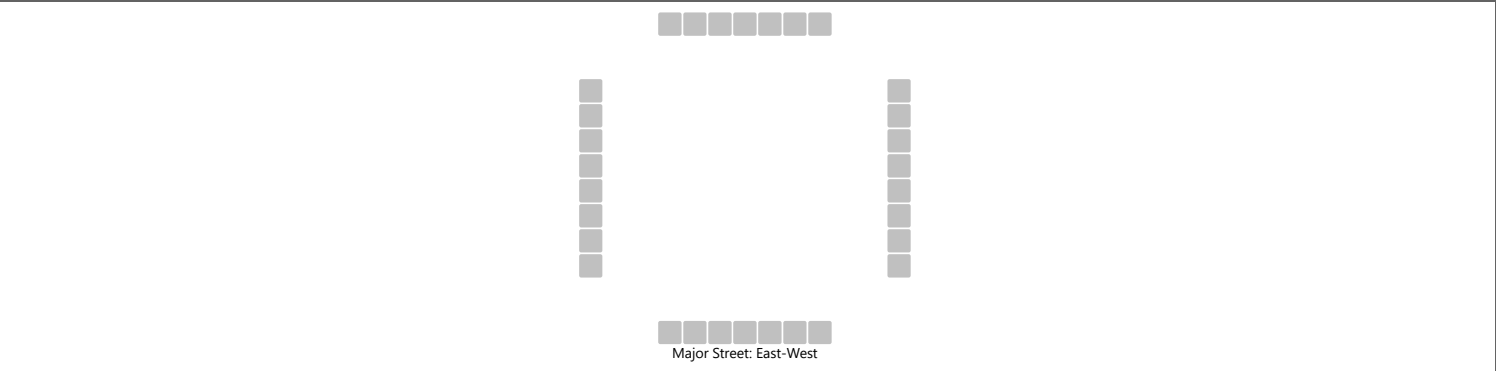
Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)			4							1						
Capacity, c (veh/h)			768							1513						
v/c Ratio			0.01							0.00						
95% Queue Length, Q ₉₅ (veh)			0.0							0.0						
Control Delay (s/veh)			9.7							7.4	0.0					
Level of Service (LOS)			A							A	A					
Approach Delay (s/veh)	9.7								0.0							
Approach LOS	A								A							

HCS Two-Way Stop-Control Report

General Information		Site Information	
Analyst	ALW	Intersection	Sprague / Flora
Agency/Co.	Sunburst Engineering	Jurisdiction	Spokane Valley, WA
Date Performed	5/24/2023	East/West Street	Sprague Ave
Analysis Year	2023	North/South Street	Flora Rd
Time Analyzed	AM Peak	Peak Hour Factor	0.83
Intersection Orientation	East-West	Analysis Time Period (hrs)	0.25
Project Description	Tschirley Apts		

Lanes



Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority	1U	1	2	3	4U	4	5	6		7	8	9		10	11	12
Number of Lanes	0	0	2	0	0	1	2	0		0	1	0		0	0	0
Configuration			T	TR		L	T				LR					
Volume (veh/h)			577	27	0	9	845			24		26				
Percent Heavy Vehicles (%)					0	0				0		0				
Proportion Time Blocked																
Percent Grade (%)									0							
Right Turn Channelized																
Median Type Storage	Left Only								1							

Critical and Follow-up Headways

Base Critical Headway (sec)						4.1					7.5		6.9			
Critical Headway (sec)						4.10					6.80		6.90			
Base Follow-Up Headway (sec)						2.2					3.5		3.3			
Follow-Up Headway (sec)						2.20					3.50		3.30			

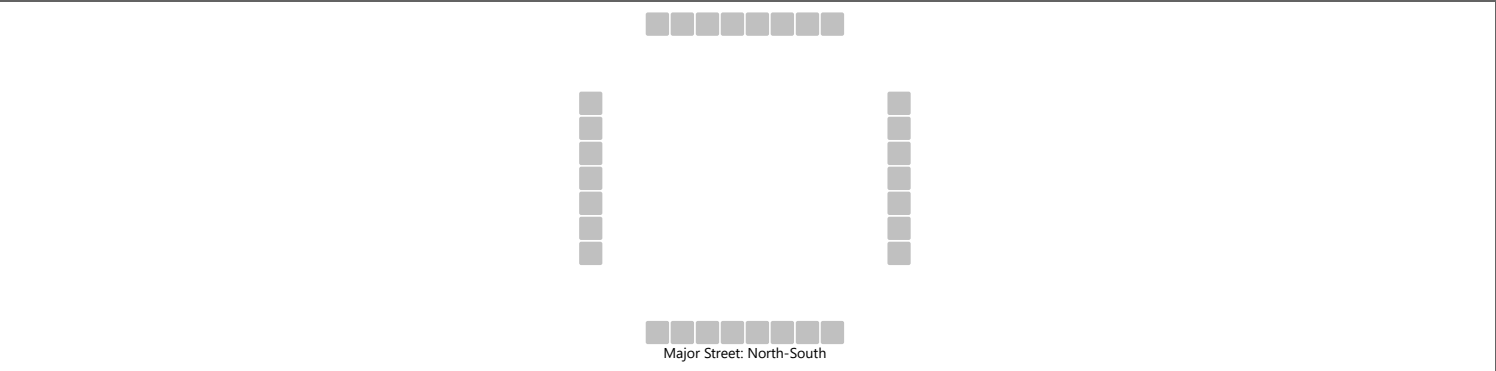
Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)						11					60					
Capacity, c (veh/h)						885					417					
v/c Ratio						0.01					0.14					
95% Queue Length, Q ₉₅ (veh)						0.0					0.5					
Control Delay (s/veh)						9.1					15.1					
Level of Service (LOS)						A					C					
Approach Delay (s/veh)					0.1				15.1							
Approach LOS					A				C							

HCS Two-Way Stop-Control Report

General Information		Site Information	
Analyst	ALW	Intersection	Tschirley / Tschirley Wye
Agency/Co.	Sunburst Engineering	Jurisdiction	Spokane Valley, WA
Date Performed	5/24/2023	East/West Street	Tschirley Wye
Analysis Year	2023	North/South Street	Tschirley Rd
Time Analyzed	AM Peak	Peak Hour Factor	0.85
Intersection Orientation	North-South	Analysis Time Period (hrs)	0.25
Project Description	Tschirley Apts		

Lanes



Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority		10	11	12		7	8	9	1U	1	2	3	4U	4	5	6
Number of Lanes		0	1	0		0	1	0	0	0	1	0	0	0	1	0
Configuration			LTR				LTR				LTR				LTR	
Volume (veh/h)		0	0	1		5	0	3		0	36	1		0	32	0
Percent Heavy Vehicles (%)		0	0	0		0	0	0		0				0		
Proportion Time Blocked																
Percent Grade (%)	0				0											
Right Turn Channelized																
Median Type Storage	Undivided															

Critical and Follow-up Headways

Base Critical Headway (sec)		7.1	6.5	6.2		7.1	6.5	6.2		4.1				4.1		
Critical Headway (sec)		7.10	6.50	6.20		7.10	6.50	6.20		4.10				4.10		
Base Follow-Up Headway (sec)		3.5	4.0	3.3		3.5	4.0	3.3		2.2				2.2		
Follow-Up Headway (sec)		3.50	4.00	3.30		3.50	4.00	3.30		2.20				2.20		

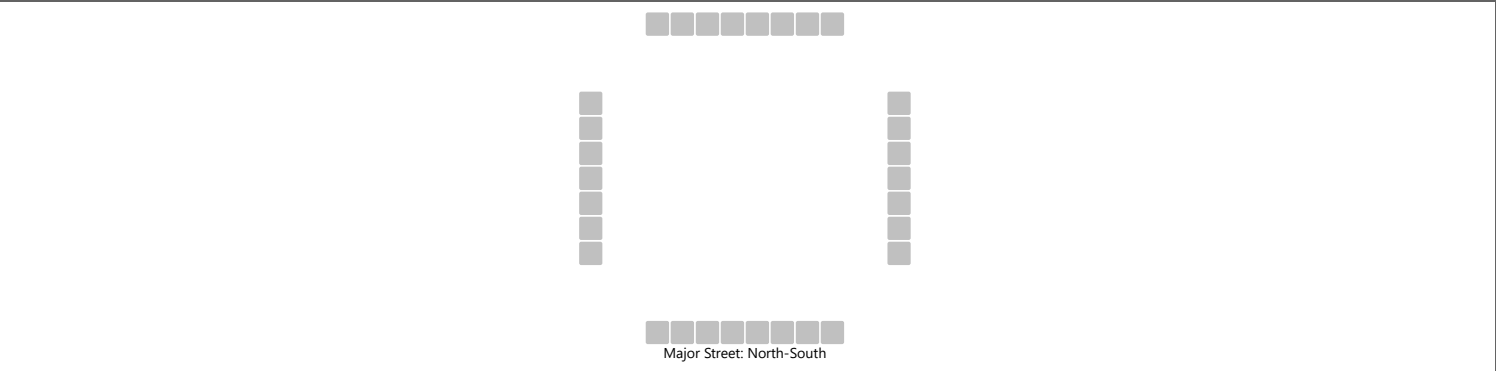
Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)			1			9				0				0		
Capacity, c (veh/h)			1040			953				1586				1578		
v/c Ratio			0.00			0.01				0.00				0.00		
95% Queue Length, Q ₉₅ (veh)			0.0			0.0				0.0				0.0		
Control Delay (s/veh)			8.5			8.8				7.3	0.0	0.0		7.3	0.0	0.0
Level of Service (LOS)			A			A				A	A	A		A	A	A
Approach Delay (s/veh)	8.5				8.8				0.0				0.0			
Approach LOS	A				A				A				A			

HCS Two-Way Stop-Control Report

General Information		Site Information	
Analyst	ALW	Intersection	Tschirley / 3rd
Agency/Co.	Sunburst Engineering	Jurisdiction	Spokane Valley, WA
Date Performed	5/25/2023	East/West Street	3rd Ave
Analysis Year	2023	North/South Street	Tschirley Rd
Time Analyzed	AM Peak	Peak Hour Factor	0.83
Intersection Orientation	North-South	Analysis Time Period (hrs)	0.25
Project Description	Tschirley Apts		

Lanes



Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority		10	11	12		7	8	9	1U	1	2	3	4U	4	5	6
Number of Lanes		0	1	0		0	1	0	0	0	1	0	0	0	1	0
Configuration			LTR				LTR				LTR				LTR	
Volume (veh/h)		4	0	2		0	6	15		7	18	1		9	18	3
Percent Heavy Vehicles (%)		3	3	3		3	3	3		3				3		
Proportion Time Blocked																
Percent Grade (%)	0				0											
Right Turn Channelized																
Median Type Storage	Undivided															

Critical and Follow-up Headways

Base Critical Headway (sec)		7.1	6.5	6.2		7.1	6.5	6.2		4.1				4.1		
Critical Headway (sec)		7.13	6.53	6.23		7.13	6.53	6.23		4.13				4.13		
Base Follow-Up Headway (sec)		3.5	4.0	3.3		3.5	4.0	3.3		2.2				2.2		
Follow-Up Headway (sec)		3.53	4.03	3.33		3.53	4.03	3.33		2.23				2.23		

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)			7			25				8				11		
Capacity, c (veh/h)			907			962				1583				1586		
v/c Ratio			0.01			0.03				0.01				0.01		
95% Queue Length, Q ₉₅ (veh)			0.0			0.1				0.0				0.0		
Control Delay (s/veh)			9.0			8.8				7.3	0.0	0.0		7.3	0.1	0.1
Level of Service (LOS)			A			A				A	A	A		A	A	A
Approach Delay (s/veh)	9.0				8.8				2.0				2.2			
Approach LOS	A				A				A				A			

HCS Two-Way Stop-Control Report

General Information

Analyst

ALW

Agency/Co.

Sunburst Engineering

Date Performed

5/25/2023

Analysis Year

2023

Time Analyzed

AM Peak

Intersection Orientation

North-South

Project Description

Tschirley Apts

Site Information

Intersection

Tschirley / 4th

Jurisdiction

Spokane Valley, WA

East/West Street

4th Ave

North/South Street

Tschirley Rd

Peak Hour Factor

0.76

Analysis Time Period (hrs)

0.25

Lanes


Major Street: North-South

Vehicle Volumes and Adjustments																
Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority		10	11	12		7	8	9	1U	1	2	3	4U	4	5	6
Number of Lanes		0	1	0		0	1	0	0	0	1	0	0	0	1	0
Configuration			LTR				LTR				LTR				LTR	
Volume (veh/h)		5	0	1		0	0	1		2	19	0		0	25	2
Percent Heavy Vehicles (%)		3	3	3		3	3	3		3				3		
Proportion Time Blocked																
Percent Grade (%)	0				0											
Right Turn Channelized																
Median Type Storage	Undivided															

Critical and Follow-up Headways																
Base Critical Headway (sec)		7.1	6.5	6.2		7.1	6.5	6.2		4.1				4.1		
Critical Headway (sec)		7.13	6.53	6.23		7.13	6.53	6.23		4.13				4.13		
Base Follow-Up Headway (sec)		3.5	4.0	3.3		3.5	4.0	3.3		2.2				2.2		
Follow-Up Headway (sec)		3.53	4.03	3.33		3.53	4.03	3.33		2.23				2.23		

Delay, Queue Length, and Level of Service																
Flow Rate, v (veh/h)			8				1			3				0		
Capacity, c (veh/h)			940				1048			1569				1583		
v/c Ratio			0.01				0.00			0.00				0.00		
95% Queue Length, Q ₉₅ (veh)			0.0				0.0			0.0				0.0		
Control Delay (s/veh)			8.9				8.4			7.3	0.0	0.0		7.3	0.0	0.0
Level of Service (LOS)			A				A			A	A	A		A	A	A
Approach Delay (s/veh)	8.9				8.4				0.7				0.0			
Approach LOS	A				A				A				A			

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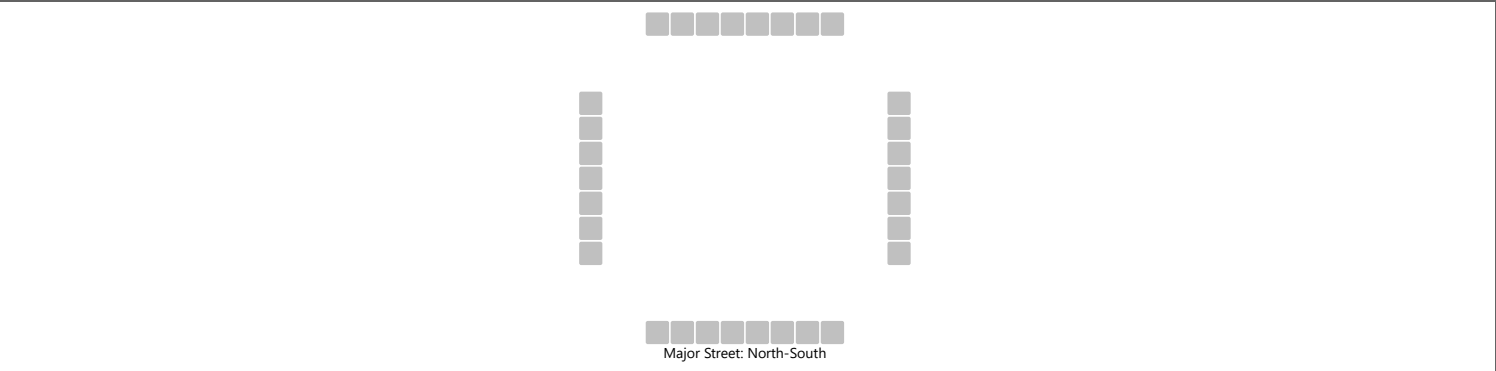
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HCS Two-Way Stop-Control Report

General Information		Site Information	
Analyst	ALW	Intersection	Tschirley / 6th
Agency/Co.	Sunburst Engineering	Jurisdiction	Spokane Valley, WA
Date Performed	5/25/2023	East/West Street	6th Ave
Analysis Year	2023	North/South Street	Tschirley Rd
Time Analyzed	AM Peak	Peak Hour Factor	0.72
Intersection Orientation	North-South	Analysis Time Period (hrs)	0.25
Project Description	Tschirley Apts		

Lanes



Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority		10	11	12		7	8	9	1U	1	2	3	4U	4	5	6
Number of Lanes		0	1	0		0	1	0	0	0	1	0	0	0	1	0
Configuration			LTR				LTR				LTR				LTR	
Volume (veh/h)		1	1	1		0	0	13		0	9	2		9	17	2
Percent Heavy Vehicles (%)		3	3	3		3	3	3		3				3		
Proportion Time Blocked																
Percent Grade (%)	0				0											
Right Turn Channelized																
Median Type Storage	Undivided															

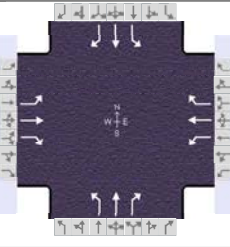
Critical and Follow-up Headways

Base Critical Headway (sec)		7.1	6.5	6.2		7.1	6.5	6.2		4.1				4.1		
Critical Headway (sec)		7.13	6.53	6.23		7.13	6.53	6.23		4.13				4.13		
Base Follow-Up Headway (sec)		3.5	4.0	3.3		3.5	4.0	3.3		2.2				2.2		
Follow-Up Headway (sec)		3.53	4.03	3.33		3.53	4.03	3.33		2.23				2.23		

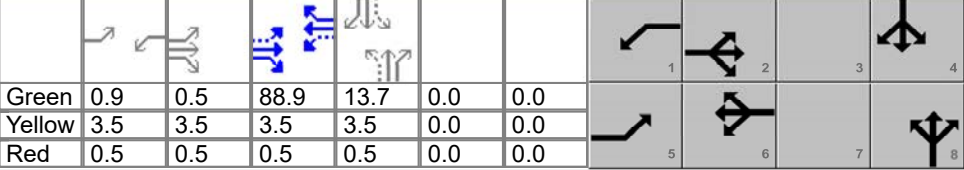
Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)			4			18				0				13		
Capacity, c (veh/h)			910			1063				1581				1596		
v/c Ratio			0.00			0.02				0.00				0.01		
95% Queue Length, Q ₉₅ (veh)			0.0			0.1				0.0				0.0		
Control Delay (s/veh)			9.0			8.4				7.3	0.0	0.0		7.3	0.1	0.1
Level of Service (LOS)			A			A				A	A	A		A	A	A
Approach Delay (s/veh)	9.0				8.4				0.0				2.4			
Approach LOS	A				A				A				A			

HCS Signalized Intersection Results Summary

General Information				Intersection Information		
Agency	Sunburst Engineering			Duration, h	0.250	
Analyst	ALW	Analysis Date	5/24/2023	Area Type	Other	
Jurisdiction	Spokane Valley, WA	Time Period	AM Peak	PHF	0.84	
Urban Street	Sprague Ave	Analysis Year	2023	Analysis Period	1> 7:00	
Intersection	Sprague / Flora	File Name	EX AM Flora.xus			
Project Description	Tschirley Apts					

Demand Information	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Demand (v), veh/h	58	488	6	4	666	114	22	29	6	92	6	96

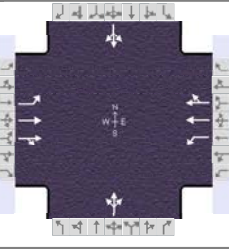
Signal Information											
Cycle, s	120.0	Reference Phase	2								
Offset, s	0	Reference Point	End								
Uncoordinated	No	Simult. Gap E/W	On								
Force Mode	Fixed	Simult. Gap N/S	On	Green	0.9	0.5	88.9	13.7	0.0	0.0	
				Yellow	3.5	3.5	3.5	3.5	0.0	0.0	
				Red	0.5	0.5	0.5	0.5	0.0	0.0	

Timer Results	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Assigned Phase	5	2	1	6		8		4
Case Number	1.1	3.0	1.1	3.0		5.0		5.0
Phase Duration, s	9.4	97.5	4.9	92.9		17.7		17.7
Change Period, ($Y+R_c$), s	4.0	4.0	4.0	4.0		4.0		4.0
Max Allow Headway (MAH), s	3.1	0.0	3.1	0.0		3.3		3.3
Queue Clearance Time (g_s), s	2.9		2.1			4.3		13.1
Green Extension Time (g_e), s	0.1	0.0	0.0	0.0		0.6		0.5
Phase Call Probability	0.90		0.15			1.00		1.00
Max Out Probability	0.00		0.00			0.00		0.00

Movement Group Results	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Assigned Movement	5	2	12	1	6	16	3	8	18	7	4	14
Adjusted Flow Rate (v), veh/h	69	581	7	5	793	136	26	35	7	110	7	114
Adjusted Saturation Flow Rate (s), veh/h/ln	1810	1950	1597	1810	1950	1597	1517	1950	1610	1480	1950	1610
Queue Service Time (g_s), s	0.9	11.3	0.1	0.1	21.3	2.9	2.0	1.9	0.5	9.2	0.4	8.1
Cycle Queue Clearance Time (g_c), s	0.9	11.3	0.1	0.1	21.3	2.9	2.3	1.9	0.5	11.1	0.4	8.1
Green Ratio (g/C)	0.80	0.78	0.78	0.75	0.74	0.74	0.11	0.11	0.11	0.11	0.11	0.11
Capacity (c), veh/h	532	1518	1244	638	1445	1183	229	223	184	206	223	184
Volume-to-Capacity Ratio (X)	0.130	0.383	0.006	0.007	0.549	0.115	0.115	0.155	0.039	0.533	0.032	0.622
Back of Queue (Q), ft/ln (95 th percentile)	11.9	172.9	1.5	1.1	315.4	39.7	32.6	42.8	8.7	148.4	8.7	151.5
Back of Queue (Q), veh/ln (95 th percentile)	0.5	6.9	0.1	0.0	12.6	1.6	1.3	1.7	0.3	5.9	0.3	6.1
Queue Storage Ratio (RQ) (95 th percentile)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Uniform Delay (d_1), s/veh	5.0	4.2	3.0	4.1	6.8	4.4	48.3	47.9	47.3	52.9	47.3	50.7
Incremental Delay (d_2), s/veh	0.0	0.7	0.0	0.0	1.5	0.2	0.1	0.1	0.0	0.8	0.0	1.3
Initial Queue Delay (d_3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Control Delay (d), s/veh	5.0	4.9	3.0	4.1	8.3	4.6	48.4	48.1	47.3	53.7	47.3	52.0
Level of Service (LOS)	A	A	A	A	A	A	D	D	D	D	D	D
Approach Delay, s/veh / LOS	4.9	A		7.7	A		48.1	D		52.7	D	
Intersection Delay, s/veh / LOS	13.7						B					

Multimodal Results	EB		WB		NB		SB	
Pedestrian LOS Score / LOS	2.03	B	2.04	B	2.14	B	2.14	B
Bicycle LOS Score / LOS	1.57	B	2.03	B	0.60	A	0.87	A

HCS Signalized Intersection Results Summary

General Information					Intersection Information		
Agency	Sunburst Engineering				Duration, h	0.250	
Analyst	ALW	Analysis Date	5/24/2023	Area Type	Other		
Jurisdiction	Spokane Valley, WA	Time Period	PM Peak	PHF	0.94		
Urban Street	Appleway	Analysis Year	2023	Analysis Period	1 > 7:00		
Intersection	Appleway / Corbin	File Name	EX PM Appleway.xus				
Project Description	Tschirley Apts						

Demand Information	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Demand (v), veh/h	12	609	370	6	643	13	207	7	5	8	8	10

Signal Information											
Cycle, s	120.0	Reference Phase	2								
Offset, s	0	Reference Point	End								
Uncoordinated	No	Simult. Gap E/W	On								
Force Mode	Fixed	Simult. Gap N/S	On								

Timer Results	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Assigned Phase	5	2	1	6		8		4
Case Number	2.0	4.0	2.0	4.0		8.0		8.0
Phase Duration, s	6.6	88.5	5.7	87.6		25.9		25.9
Change Period, ($Y+R_c$), s	4.5	4.5	4.5	4.5		4.5		4.5
Max Allow Headway (MAH), s	3.1	0.0	3.1	0.0		3.1		3.1
Queue Clearance Time (g_s), s	2.8		2.4			21.2		3.5
Green Extension Time (g_e), s	0.0	0.0	0.0	0.0		0.2		0.4
Phase Call Probability	0.35		0.19			1.00		1.00
Max Out Probability	0.00		0.00			0.32		0.00

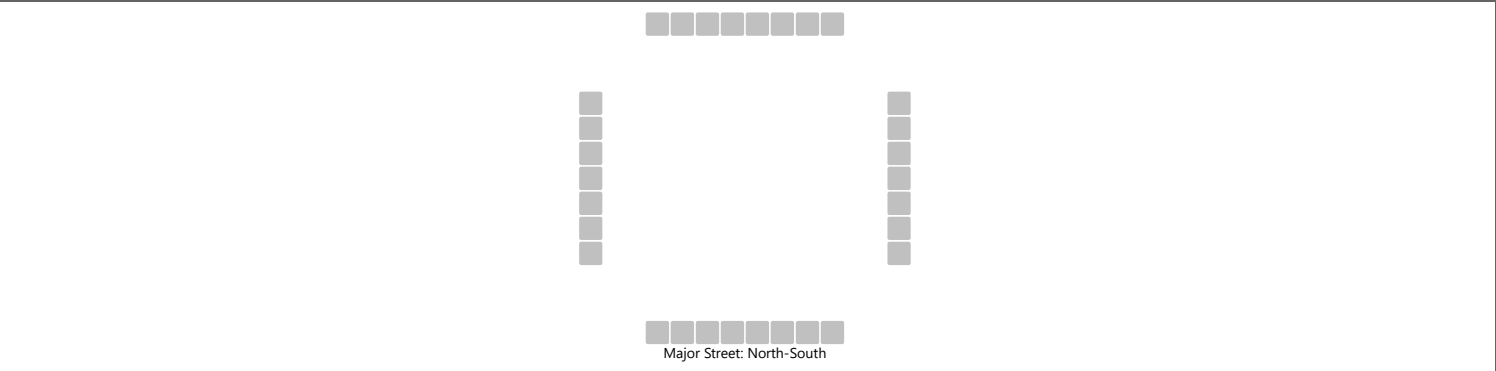
Movement Group Results	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Assigned Movement	5	2	12	1	6	16	3	8	18	7	4	14
Adjusted Flow Rate (v), veh/h	13	558	483	6	351	346		233			28	
Adjusted Saturation Flow Rate (s), veh/h/ln	1810	1950	1687	1810	1950	1921		1519			1861	
Queue Service Time (g_s), s	0.8	14.4	14.5	0.4	8.1	8.1		17.6			0.0	
Cycle Queue Clearance Time (g_c), s	0.8	14.4	14.5	0.4	8.1	8.1		19.2			1.5	
Green Ratio (g/C)	0.02	0.70	0.70	0.01	0.69	0.69		0.18			0.18	
Capacity (c), veh/h	31	1365	1181	17	1350	1329		329			370	
Volume-to-Capacity Ratio (X)	0.407	0.409	0.409	0.368	0.260	0.261		0.709			0.075	
Back of Queue (Q), ft/ln (95 th percentile)	18.4	241.8	217.2	9.7	145.9	143.9		286.9			30.8	
Back of Queue (Q), veh/ln (95 th percentile)	0.7	9.7	8.7	0.4	5.8	5.8		11.5			1.2	
Queue Storage Ratio (RQ) (95 th percentile)	0.00	0.00	0.00	0.00	0.00	0.00		0.00			0.00	
Uniform Delay (d_1), s/veh	58.3	7.6	7.6	59.1	6.9	6.9		48.4			41.2	
Incremental Delay (d_2), s/veh	3.1	0.9	1.1	4.8	0.5	0.5		3.8			0.0	
Initial Queue Delay (d_3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0		0.0			0.0	
Control Delay (d), s/veh	61.5	8.5	8.6	63.8	7.4	7.4		52.2			41.2	
Level of Service (LOS)	E	A	A	E	A	A		D			D	
Approach Delay, s/veh / LOS	9.2		A	7.9		A	52.2		D	41.2		D
Intersection Delay, s/veh / LOS	14.1						B					

Multimodal Results	EB		WB		NB		SB	
Pedestrian LOS Score / LOS	1.64	B	1.64	B	2.31	B	2.31	B
Bicycle LOS Score / LOS	1.36	A	1.07	A	0.87	A	0.53	A

HCS Two-Way Stop-Control Report

General Information		Site Information	
Analyst	ALW	Intersection	Sprague / Tschirley Wye
Agency/Co.	Sunburst Engineering	Jurisdiction	Spokane Valley, WA
Date Performed	5/24/2023	East/West Street	Tschirley Wye
Analysis Year	2023	North/South Street	Sprague Ave
Time Analyzed	PM Peak	Peak Hour Factor	0.93
Intersection Orientation	North-South	Analysis Time Period (hrs)	0.25
Project Description	Tschirley Apts		

Lanes



Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority		10	11	12		7	8	9	1U	1	2	3	4U	4	5	6
Number of Lanes		0	1	0		0	0	0	0	0	1	0	0	0	1	0
Configuration			LR							LT						TR
Volume (veh/h)		4		5						2	219				352	2
Percent Heavy Vehicles (%)		0		0						0						
Proportion Time Blocked																
Percent Grade (%)	0															
Right Turn Channelized																
Median Type Storage	Undivided															

Critical and Follow-up Headways

Base Critical Headway (sec)		7.1		6.2						4.1						
Critical Headway (sec)		6.40		6.20						4.10						
Base Follow-Up Headway (sec)		3.5		3.3						2.2						
Follow-Up Headway (sec)		3.50		3.30						2.20						

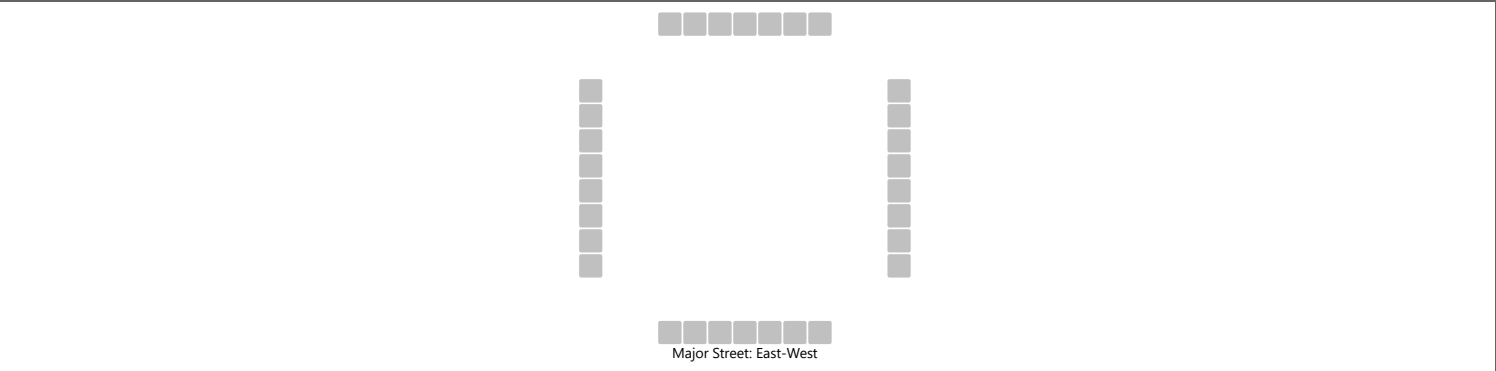
Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)			10							2						
Capacity, c (veh/h)			554							1189						
v/c Ratio			0.02							0.00						
95% Queue Length, Q ₉₅ (veh)			0.1							0.0						
Control Delay (s/veh)			11.6							8.0	0.0					
Level of Service (LOS)			B							A	A					
Approach Delay (s/veh)	11.6								0.1							
Approach LOS	B								A							

HCS Two-Way Stop-Control Report

General Information		Site Information	
Analyst	ALW	Intersection	Sprague / Flora
Agency/Co.	Sunburst Engineering	Jurisdiction	Spokane Valley, WA
Date Performed	5/24/2023	East/West Street	Sprague Ave
Analysis Year	2023	North/South Street	Flora Rd
Time Analyzed	PM Peak	Peak Hour Factor	0.93
Intersection Orientation	East-West	Analysis Time Period (hrs)	0.25
Project Description	Tschirley Apts		

Lanes



Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority	1U	1	2	3	4U	4	5	6		7	8	9		10	11	12
Number of Lanes	0	0	2	0	0	1	2	0		0	1	0		0	0	0
Configuration			T	TR		L	T				LR					
Volume (veh/h)			916	54	0	22	834			30		18				
Percent Heavy Vehicles (%)					0	0				0		0				
Proportion Time Blocked																
Percent Grade (%)									0							
Right Turn Channelized																
Median Type Storage	Left Only								1							

Critical and Follow-up Headways

Base Critical Headway (sec)						4.1					7.5		6.9			
Critical Headway (sec)						4.10					6.80		6.90			
Base Follow-Up Headway (sec)						2.2					3.5		3.3			
Follow-Up Headway (sec)						2.20					3.50		3.30			

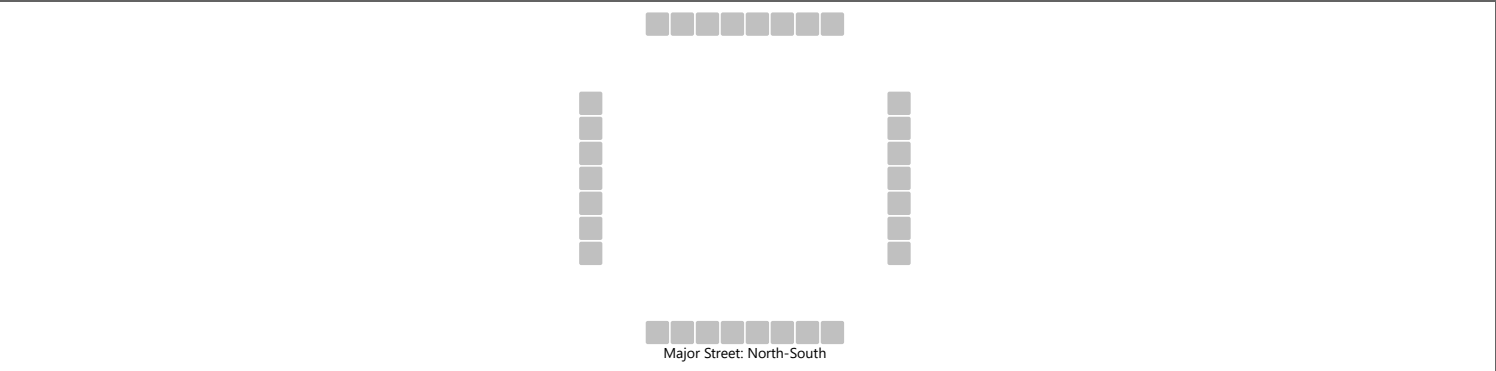
Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)						24					52					
Capacity, c (veh/h)						675					288					
v/c Ratio						0.04					0.18					
95% Queue Length, Q ₉₅ (veh)						0.1					0.6					
Control Delay (s/veh)						10.5					20.2					
Level of Service (LOS)						B					C					
Approach Delay (s/veh)					0.3				20.2							
Approach LOS					A				C							

HCS Two-Way Stop-Control Report

General Information		Site Information	
Analyst	ALW	Intersection	Tschirley / Tschirley Wye
Agency/Co.	Sunburst Engineering	Jurisdiction	Spokane Valley, WA
Date Performed	5/24/2023	East/West Street	Tschirley Wye
Analysis Year	2023	North/South Street	Tschirley Rd
Time Analyzed	PM Peak	Peak Hour Factor	0.78
Intersection Orientation	North-South	Analysis Time Period (hrs)	0.25
Project Description	Tschirley Apts		

Lanes



Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority		10	11	12		7	8	9	1U	1	2	3	4U	4	5	6
Number of Lanes		0	1	0		0	1	0	0	0	1	0	0	0	1	0
Configuration			LTR				LTR				LTR				LTR	
Volume (veh/h)		0	0	0		4	0	4		0	38	9		6	58	0
Percent Heavy Vehicles (%)		0	0	0		0	0	0		0				0		
Proportion Time Blocked																
Percent Grade (%)	0				0											
Right Turn Channelized																
Median Type Storage	Undivided															

Critical and Follow-up Headways

Base Critical Headway (sec)		7.1	6.5	6.2		7.1	6.5	6.2		4.1				4.1		
Critical Headway (sec)		7.10	6.50	6.20		7.10	6.50	6.20		4.10				4.10		
Base Follow-Up Headway (sec)		3.5	4.0	3.3		3.5	4.0	3.3		2.2				2.2		
Follow-Up Headway (sec)		3.50	4.00	3.30		3.50	4.00	3.30		2.20				2.20		

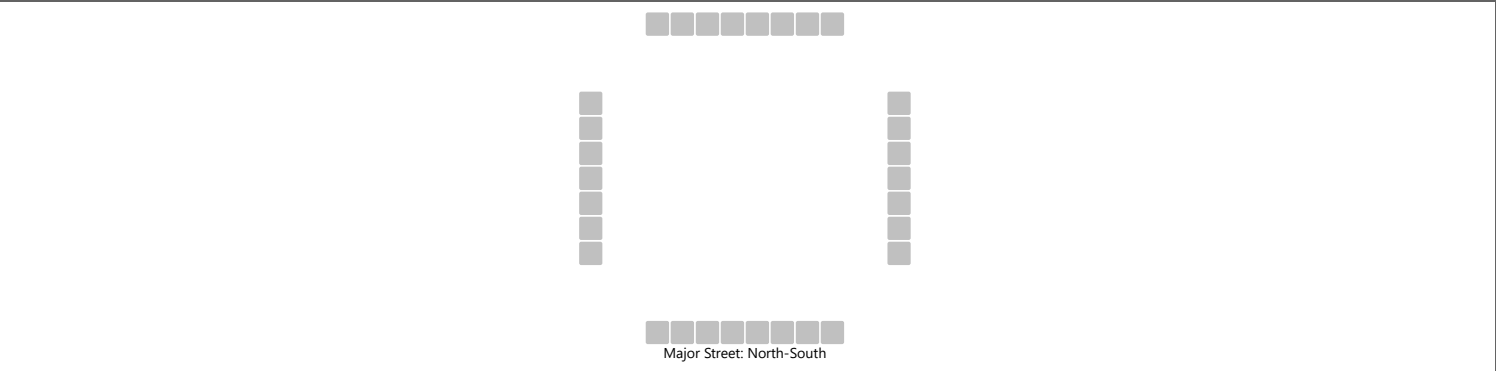
Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)			0			10				0				8		
Capacity, c (veh/h)			0			912				1538				1556		
v/c Ratio						0.01				0.00				0.00		
95% Queue Length, Q ₉₅ (veh)						0.0				0.0				0.0		
Control Delay (s/veh)						9.0				7.3	0.0	0.0		7.3	0.0	0.0
Level of Service (LOS)						A				A	A	A		A	A	A
Approach Delay (s/veh)					9.0				0.0				0.7			
Approach LOS					A				A				A			

HCS Two-Way Stop-Control Report

General Information		Site Information	
Analyst	ALW	Intersection	Tschirley / 3rd
Agency/Co.	Sunburst Engineering	Jurisdiction	Spokane Valley, WA
Date Performed	5/25/2023	East/West Street	3rd Ave
Analysis Year	2023	North/South Street	Tschirley Rd
Time Analyzed	PM Peak	Peak Hour Factor	0.89
Intersection Orientation	North-South	Analysis Time Period (hrs)	0.25
Project Description	Tschirley Apts		

Lanes



Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority		10	11	12		7	8	9	1U	1	2	3	4U	4	5	6
Number of Lanes		0	1	0		0	1	0	0	0	1	0	0	0	1	0
Configuration			LTR				LTR				LTR				LTR	
Volume (veh/h)		7	6	1		0	4	17		9	20	0		23	27	7
Percent Heavy Vehicles (%)		3	3	3		3	3	3		3				3		
Proportion Time Blocked																
Percent Grade (%)	0				0											
Right Turn Channelized																
Median Type Storage	Undivided															

Critical and Follow-up Headways

Base Critical Headway (sec)		7.1	6.5	6.2		7.1	6.5	6.2		4.1				4.1		
Critical Headway (sec)		7.13	6.53	6.23		7.13	6.53	6.23		4.13				4.13		
Base Follow-Up Headway (sec)		3.5	4.0	3.3		3.5	4.0	3.3		2.2				2.2		
Follow-Up Headway (sec)		3.53	4.03	3.33		3.53	4.03	3.33		2.23				2.23		

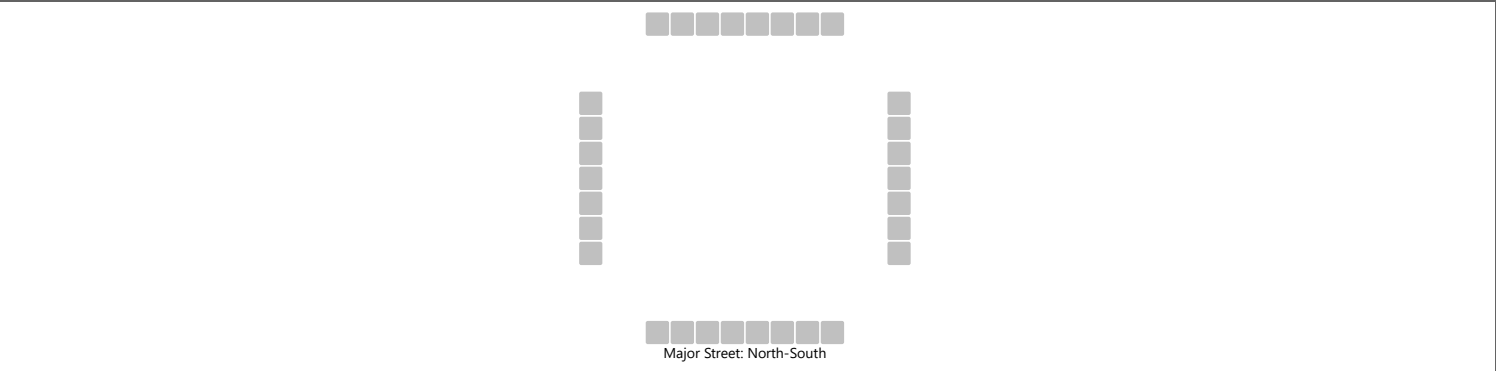
Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)			16				24			10				26		
Capacity, c (veh/h)			781				973			1566				1586		
v/c Ratio			0.02				0.02			0.01				0.02		
95% Queue Length, Q ₉₅ (veh)			0.1				0.1			0.0				0.0		
Control Delay (s/veh)			9.7				8.8			7.3	0.0	0.0		7.3	0.1	0.1
Level of Service (LOS)			A				A			A	A	A		A	A	A
Approach Delay (s/veh)	9.7				8.8				2.3				3.0			
Approach LOS	A				A				A				A			

HCS Two-Way Stop-Control Report

General Information		Site Information	
Analyst	ALW	Intersection	Tschirley / 4th
Agency/Co.	Sunburst Engineering	Jurisdiction	Spokane Valley, WA
Date Performed	5/25/2023	East/West Street	4th Ave
Analysis Year	2023	North/South Street	Tschirley Rd
Time Analyzed	PM Peak	Peak Hour Factor	0.86
Intersection Orientation	North-South	Analysis Time Period (hrs)	0.25
Project Description	Tschirley Apts		

Lanes



Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority		10	11	12		7	8	9	1U	1	2	3	4U	4	5	6
Number of Lanes		0	1	0		0	1	0	0	0	1	0	0	0	1	0
Configuration			LTR				LTR				LTR				LTR	
Volume (veh/h)		4	1	6		1	0	2		4	29	0		0	27	2
Percent Heavy Vehicles (%)		3	3	3		3	3	3		3				3		
Proportion Time Blocked																
Percent Grade (%)	0				0											
Right Turn Channelized																
Median Type Storage	Undivided															

Critical and Follow-up Headways

Base Critical Headway (sec)		7.1	6.5	6.2		7.1	6.5	6.2		4.1				4.1		
Critical Headway (sec)		7.13	6.53	6.23		7.13	6.53	6.23		4.13				4.13		
Base Follow-Up Headway (sec)		3.5	4.0	3.3		3.5	4.0	3.3		2.2				2.2		
Follow-Up Headway (sec)		3.53	4.03	3.33		3.53	4.03	3.33		2.23				2.23		

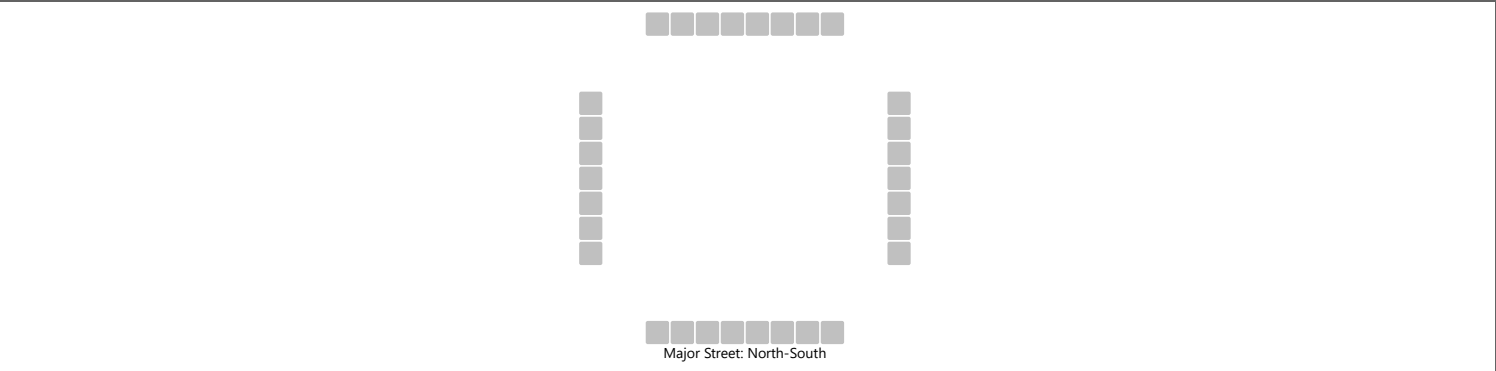
Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)			13			3				5				0		
Capacity, c (veh/h)			962			985				1571				1571		
v/c Ratio			0.01			0.00				0.00				0.00		
95% Queue Length, Q ₉₅ (veh)			0.0			0.0				0.0				0.0		
Control Delay (s/veh)			8.8			8.7				7.3	0.0	0.0		7.3	0.0	0.0
Level of Service (LOS)			A			A				A	A	A		A	A	A
Approach Delay (s/veh)	8.8				8.7				0.9				0.0			
Approach LOS	A				A				A				A			

HCS Two-Way Stop-Control Report

General Information		Site Information	
Analyst	ALW	Intersection	Tschirley / 6th
Agency/Co.	Sunburst Engineering	Jurisdiction	Spokane Valley, WA
Date Performed	5/25/2023	East/West Street	6th Ave
Analysis Year	2023	North/South Street	Tschirley Rd
Time Analyzed	PM Peak	Peak Hour Factor	0.89
Intersection Orientation	North-South	Analysis Time Period (hrs)	0.25
Project Description	Tschirley Apts		

Lanes



Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority		10	11	12		7	8	9	1U	1	2	3	4U	4	5	6
Number of Lanes		0	1	0		0	1	0	0	0	1	0	0	0	1	0
Configuration			LTR				LTR				LTR				LTR	
Volume (veh/h)		0	2	0		1	0	8		0	19	0		12	14	1
Percent Heavy Vehicles (%)		3	3	3		3	3	3		3				3		
Proportion Time Blocked																
Percent Grade (%)	0				0											
Right Turn Channelized																
Median Type Storage	Undivided															

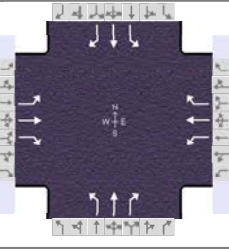
Critical and Follow-up Headways

Base Critical Headway (sec)		7.1	6.5	6.2		7.1	6.5	6.2		4.1				4.1		
Critical Headway (sec)		7.13	6.53	6.23		7.13	6.53	6.23		4.13				4.13		
Base Follow-Up Headway (sec)		3.5	4.0	3.3		3.5	4.0	3.3		2.2				2.2		
Follow-Up Headway (sec)		3.53	4.03	3.33		3.53	4.03	3.33		2.23				2.23		

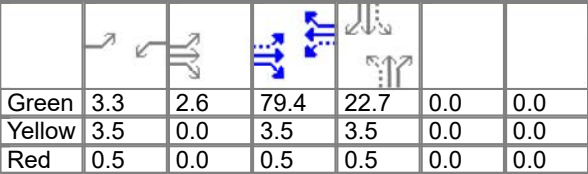

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)			2				10			0				13		
Capacity, c (veh/h)			817				1036			1594				1588		
v/c Ratio			0.00				0.01			0.00				0.01		
95% Queue Length, Q ₉₅ (veh)			0.0				0.0			0.0				0.0		
Control Delay (s/veh)			9.4				8.5			7.3	0.0	0.0		7.3	0.1	0.1
Level of Service (LOS)			A				A			A	A	A		A	A	A
Approach Delay (s/veh)	9.4				8.5				0.0				3.3			
Approach LOS	A				A				A				A			

HCS Signalized Intersection Results Summary

General Information					Intersection Information		
Agency	Sunburst Engineering				Duration, h	0.250	
Analyst	ALW	Analysis Date	5/24/2023	Area Type	Other		
Jurisdiction	Spokane Valley, WA	Time Period	PM Peak	PHF	0.94		
Urban Street	Sprague Ave	Analysis Year	2023	Analysis Period	1 > 7:00		
Intersection	Sprague / Flora	File Name	EX PM Flora.xus				
Project Description	Tschirley Apts						

Demand Information	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Demand (v), veh/h	169	887	17	23	868	103	24	12	10	223	21	136

Signal Information												
Cycle, s	120.0	Reference Phase	2		Green	3.3	2.6	79.4	22.7	0.0	0.0	
Offset, s	0	Reference Point	End									
Uncoordinated	No	Simult. Gap E/W	On									
Force Mode	Fixed	Simult. Gap N/S	On									

Timer Results	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Assigned Phase	5	2	1	6		8		4
Case Number	1.1	3.0	1.1	3.0		5.0		5.0
Phase Duration, s	10.0	86.0	7.3	83.4		26.7		26.7
Change Period, ($Y+R_c$), s	4.0	4.0	4.0	4.0		4.0		4.0
Max Allow Headway (MAH), s	3.1	0.0	3.1	0.0		3.3		3.3
Queue Clearance Time (g_s), s	5.8		2.5			4.9		22.2
Green Extension Time (g_e), s	0.3	0.0	0.0	0.0		0.9		0.4
Phase Call Probability	1.00		0.56			1.00		1.00
Max Out Probability	0.00		0.00			0.00		0.75

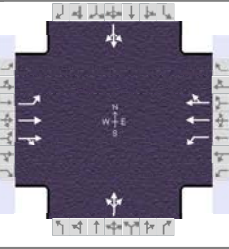
Movement Group Results	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Assigned Movement	5	2	12	1	6	16	3	8	18	7	4	14
Adjusted Flow Rate (v), veh/h	180	944	18	24	923	110	26	13	11	237	22	145
Adjusted Saturation Flow Rate (s), veh/h/ln	1810	1950	1597	1810	1950	1597	1496	1950	1610	1509	1950	1610
Queue Service Time (g_s), s	3.8	35.6	0.4	0.5	36.6	3.0	1.8	0.6	0.6	19.6	1.1	9.6
Cycle Queue Clearance Time (g_c), s	3.8	35.6	0.4	0.5	36.6	3.0	2.9	0.6	0.6	20.2	1.1	9.6
Green Ratio (g/C)	0.72	0.68	0.68	0.69	0.66	0.66	0.19	0.19	0.19	0.19	0.19	0.19
Capacity (c), veh/h	369	1332	1091	333	1289	1056	329	368	304	337	368	304
Volume-to-Capacity Ratio (X)	0.487	0.708	0.017	0.073	0.716	0.104	0.078	0.035	0.035	0.704	0.061	0.476
Back of Queue (Q), ft/ln (95 th percentile)	84.4	529	6.5	8.2	551.7	45.9	29	14.2	11.8	295	24.9	175.9
Back of Queue (Q), veh/ln (95 th percentile)	3.4	21.2	0.3	0.3	22.1	1.8	1.2	0.6	0.5	11.8	1.0	7.0
Queue Storage Ratio (RQ) (95 th percentile)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Uniform Delay (d_1), s/veh	13.5	11.7	6.1	11.2	13.1	7.4	41.1	39.7	39.7	48.0	39.9	43.4
Incremental Delay (d_2), s/veh	0.4	3.2	0.0	0.0	3.4	0.2	0.0	0.0	0.0	3.9	0.0	0.4
Initial Queue Delay (d_3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Control Delay (d), s/veh	13.9	14.9	6.1	11.2	16.5	7.6	41.2	39.8	39.8	51.9	40.0	43.8
Level of Service (LOS)	B	B	A	B	B	A	D	D	D	D	D	D
Approach Delay, s/veh / LOS	14.6	B		15.5	B		40.5	D		48.4	D	
Intersection Delay, s/veh / LOS	20.6						C					

Multimodal Results	EB		WB		NB		SB	
Pedestrian LOS Score / LOS	2.06	B	2.07	B	2.14	B	2.14	B
Bicycle LOS Score / LOS	2.37	B	2.23	B	0.57	A	1.15	A


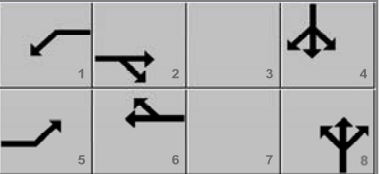
TECHNICAL APPENDIX

YEAR 2028 LEVEL OF SERVICE CALCULATIONS

HCS Signalized Intersection Results Summary

General Information					Intersection Information		
Agency	Sunburst Engineering				Duration, h	0.250	
Analyst	ALW	Analysis Date	5/24/2023	Area Type	Other		
Jurisdiction	Spokane Valley, WA	Time Period	AM Peak	PHF	0.76		
Urban Street	Appleway	Analysis Year	2028	Analysis Period	1 > 7:00		
Intersection	Appleway / Corbin	File Name	FO AM Appleway.xus				
Project Description	Tschirley Apts						

Demand Information	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Demand (v), veh/h	16	399	140	3	524	8	193	15	3	5	7	12

Signal Information												
Cycle, s	120.0	Reference Phase	2									
Offset, s	0	Reference Point	End									
Uncoordinated	No	Simult. Gap E/W	On									
Force Mode	Fixed	Simult. Gap N/S	On									
				Green	0.7	2.3	78.0	25.5	0.0	0.0		
				Yellow	3.5	0.0	3.5	3.5	0.0	0.0		
				Red	1.0	0.0	1.0	1.0	0.0	0.0		

Timer Results	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Assigned Phase	5	2	1	6		8		4
Case Number	2.0	4.0	2.0	4.0		8.0		8.0
Phase Duration, s	7.5	84.8	5.2	82.5		30.0		30.0
Change Period, ($Y+R_c$), s	4.5	4.5	4.5	4.5		4.5		4.5
Max Allow Headway (MAH), s	3.1	0.0	3.1	0.0		3.2		3.2
Queue Clearance Time (g_s), s	3.4		2.3			25.5		3.7
Green Extension Time (g_e), s	0.0	0.0	0.0	0.0		0.0		0.6
Phase Call Probability	0.50		0.12			1.00		1.00
Max Out Probability	0.00		0.00			1.00		0.00

Movement Group Results	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Assigned Movement	5	2	12	1	6	16	3	8	18	7	4	14
Adjusted Flow Rate (v), veh/h	21	371	338	4	352	348		278			32	
Adjusted Saturation Flow Rate (s), veh/h/ln	1810	1950	1761	1810	1950	1924		1476			1885	
Queue Service Time (g_s), s	1.4	9.4	9.4	0.3	9.3	9.3		21.8			0.0	
Cycle Queue Clearance Time (g_c), s	1.4	9.4	9.4	0.3	9.3	9.3		23.5			1.7	
Green Ratio (g/C)	0.03	0.67	0.67	0.01	0.65	0.65		0.21			0.21	
Capacity (c), veh/h	46	1304	1178	11	1267	1250		371			437	
Volume-to-Capacity Ratio (X)	0.461	0.285	0.287	0.353	0.278	0.278		0.748			0.072	
Back of Queue (Q), ft/ln (95 th percentile)	29.7	172.8	158.1	6.3	174.7	172.5		340.7			33.6	
Back of Queue (Q), veh/ln (95 th percentile)	1.2	6.9	6.3	0.3	7.0	6.9		13.6			1.3	
Queue Storage Ratio (RQ) (95 th percentile)	0.00	0.00	0.00	0.00	0.00	0.00		0.00			0.00	
Uniform Delay (d_1), s/veh	57.7	8.1	8.1	59.4	9.0	9.0		46.5			37.9	
Incremental Delay (d_2), s/veh	2.7	0.5	0.6	6.9	0.5	0.6		7.3			0.0	
Initial Queue Delay (d_3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0		0.0			0.0	
Control Delay (d), s/veh	60.4	8.7	8.8	66.3	9.5	9.5		53.8			37.9	
Level of Service (LOS)	E	A	A	E	A	A		D			D	
Approach Delay, s/veh / LOS	10.2	B		9.9	A		53.8	D		37.9	D	
Intersection Delay, s/veh / LOS	17.5						B					

Multimodal Results	EB		WB		NB		SB	
Pedestrian LOS Score / LOS	1.65	B	1.65	B	2.30	B	2.30	B
Bicycle LOS Score / LOS	1.09	A	1.07	A	0.95	A	0.54	A

HCS Two-Way Stop-Control Report

General Information

Analyst

ALW

Agency/Co.

Sunburst Engineering

Date Performed

5/24/2023

Analysis Year

2028

Time Analyzed

AM Peak

Intersection Orientation

North-South

Project Description

Tschirley Apts

Site Information

Intersection

Sprague / Tschirley Wye

Jurisdiction

Spokane Valley, WA

East/West Street

Tschirley Wye

North/South Street

Sprague Ave

Peak Hour Factor

0.96

Analysis Time Period (hrs)

0.25

Lanes


Major Street: North-South

Vehicle Volumes and Adjustments																
Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority		10	11	12		7	8	9	1U	1	2	3	4U	4	5	6
Number of Lanes		0	1	0		0	0	0	0	0	1	0	0	0	1	0
Configuration			LR							LT						TR
Volume (veh/h)		3		1						1	183				91	3
Percent Heavy Vehicles (%)		0		0						0						
Proportion Time Blocked																
Percent Grade (%)	0															
Right Turn Channelized																
Median Type Storage	Undivided															

Critical and Follow-up Headways																
Base Critical Headway (sec)		7.1		6.2						4.1						
Critical Headway (sec)		6.40		6.20						4.10						
Base Follow-Up Headway (sec)		3.5		3.3						2.2						
Follow-Up Headway (sec)		3.50		3.30						2.20						

Delay, Queue Length, and Level of Service																
Flow Rate, v (veh/h)			4							1						
Capacity, c (veh/h)			756							1508						
v/c Ratio			0.01							0.00						
95% Queue Length, Q ₉₅ (veh)			0.0							0.0						
Control Delay (s/veh)			9.8							7.4	0.0					
Level of Service (LOS)			A							A	A					
Approach Delay (s/veh)	9.8								0.0							
Approach LOS	A								A							

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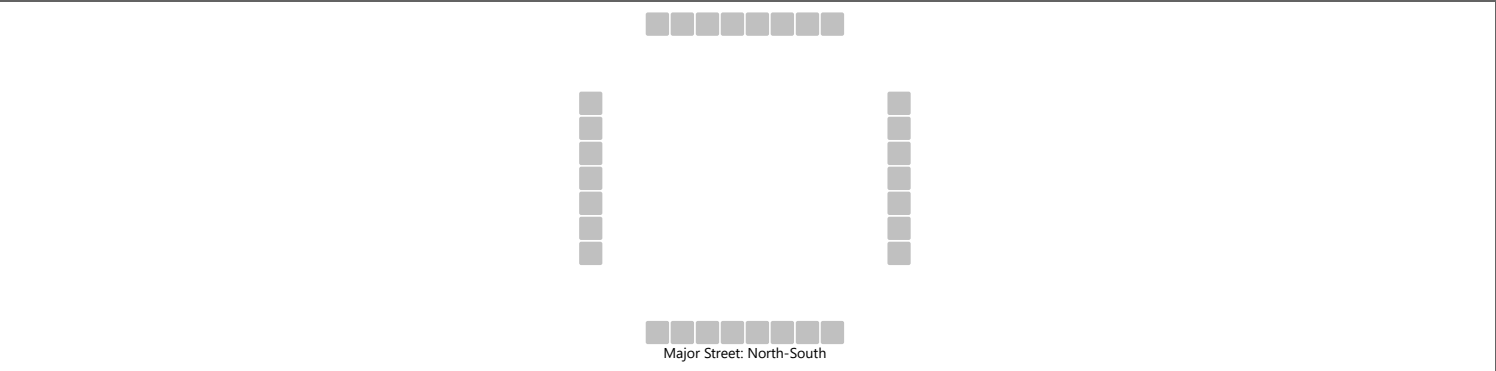
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FO AM T Wye Sprague.xtw

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HCS Two-Way Stop-Control Report

General Information		Site Information	
Analyst	ALW	Intersection	Tschirley / Tschirley Wye
Agency/Co.	Sunburst Engineering	Jurisdiction	Spokane Valley, WA
Date Performed	5/24/2023	East/West Street	Tschirley Wye
Analysis Year	2028	North/South Street	Tschirley Rd
Time Analyzed	AM Peak	Peak Hour Factor	0.85
Intersection Orientation	North-South	Analysis Time Period (hrs)	0.25
Project Description	Tschirley Apts		

Lanes



Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority		10	11	12		7	8	9	1U	1	2	3	4U	4	5	6
Number of Lanes		0	1	0		0	1	0	0	0	1	0	0	0	1	0
Configuration			LTR				LTR				LTR				LTR	
Volume (veh/h)		0	0	1		5	0	3		0	38	1		0	34	0
Percent Heavy Vehicles (%)		0	0	0		0	0	0		0				0		
Proportion Time Blocked																
Percent Grade (%)	0				0											
Right Turn Channelized																
Median Type Storage	Undivided															

Critical and Follow-up Headways

Base Critical Headway (sec)		7.1	6.5	6.2		7.1	6.5	6.2		4.1				4.1		
Critical Headway (sec)		7.10	6.50	6.20		7.10	6.50	6.20		4.10				4.10		
Base Follow-Up Headway (sec)		3.5	4.0	3.3		3.5	4.0	3.3		2.2				2.2		
Follow-Up Headway (sec)		3.50	4.00	3.30		3.50	4.00	3.30		2.20				2.20		

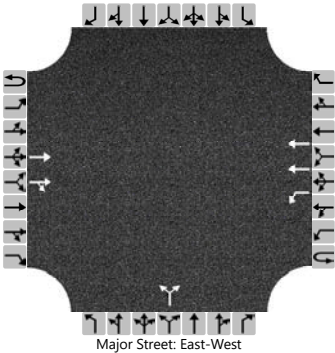
Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)			1			9				0				0		
Capacity, c (veh/h)			1037			948				1583				1575		
v/c Ratio			0.00			0.01				0.00				0.00		
95% Queue Length, Q ₉₅ (veh)			0.0			0.0				0.0				0.0		
Control Delay (s/veh)			8.5			8.8				7.3	0.0	0.0		7.3	0.0	0.0
Level of Service (LOS)			A			A				A	A	A		A	A	A
Approach Delay (s/veh)	8.5				8.8				0.0				0.0			
Approach LOS	A				A				A				A			

HCS Two-Way Stop-Control Report

General Information		Site Information	
Analyst	ALW	Intersection	Sprague / Tschirley
Agency/Co.	Sunburst Engineering	Jurisdiction	Spokane Valley, WA
Date Performed	5/24/2023	East/West Street	Sprague Ave
Analysis Year	2028	North/South Street	Tschirley Rd
Time Analyzed	AM Peak	Peak Hour Factor	0.83
Intersection Orientation	East-West	Analysis Time Period (hrs)	0.25
Project Description	Tschirley Apts		

Lanes



Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority	1U	1	2	3	4U	4	5	6		7	8	9		10	11	12
Number of Lanes	0	0	2	0	0	1	2	0		0	1	0		0	0	0
Configuration			T	TR		L	T				LR					
Volume (veh/h)			606	28	0	9	888			25		27				
Percent Heavy Vehicles (%)					0	0				0		0				
Proportion Time Blocked																
Percent Grade (%)									0							
Right Turn Channelized																
Median Type Storage	Left Only								1							

Critical and Follow-up Headways

Base Critical Headway (sec)						4.1				7.5		6.9				
Critical Headway (sec)						4.10				6.80		6.90				
Base Follow-Up Headway (sec)						2.2				3.5		3.3				
Follow-Up Headway (sec)						2.20				3.50		3.30				

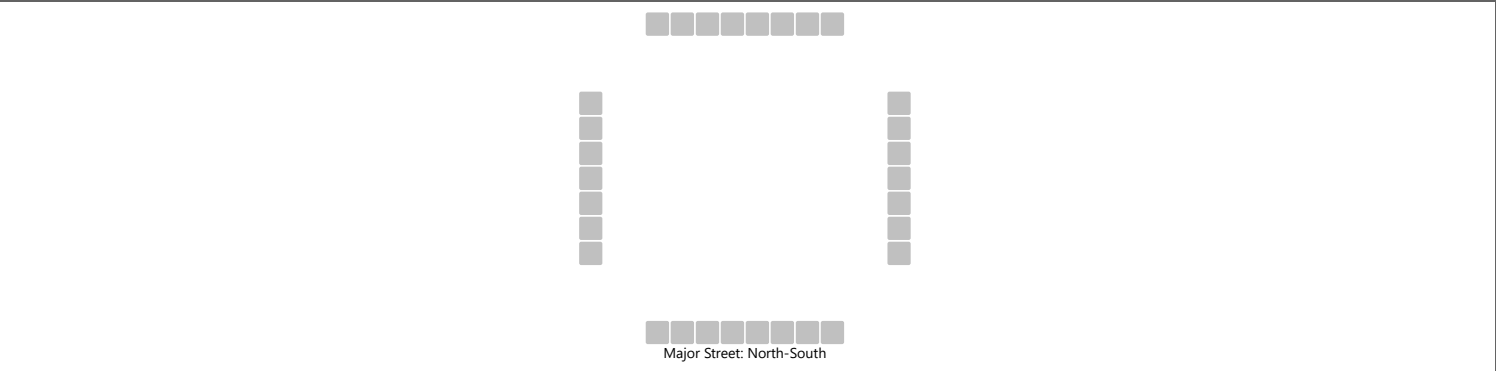
Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)						11					63					
Capacity, c (veh/h)						858					399					
v/c Ratio						0.01					0.16					
95% Queue Length, Q ₉₅ (veh)						0.0					0.6					
Control Delay (s/veh)						9.2					15.7					
Level of Service (LOS)						A					C					
Approach Delay (s/veh)					0.1				15.7							
Approach LOS					A				C							

HCS Two-Way Stop-Control Report

General Information		Site Information	
Analyst	ALW	Intersection	Tschirley / 3rd
Agency/Co.	Sunburst Engineering	Jurisdiction	Spokane Valley, WA
Date Performed	5/25/2023	East/West Street	3rd Ave
Analysis Year	2028	North/South Street	Tschirley Rd
Time Analyzed	AM Peak	Peak Hour Factor	0.83
Intersection Orientation	North-South	Analysis Time Period (hrs)	0.25
Project Description	Tschirley Apts		

Lanes



Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority		10	11	12		7	8	9	1U	1	2	3	4U	4	5	6
Number of Lanes		0	1	0		0	1	0	0	0	1	0	0	0	1	0
Configuration			LTR				LTR				LTR				LTR	
Volume (veh/h)		4	0	2		0	6	16		7	19	1		9	19	3
Percent Heavy Vehicles (%)		3	3	3		3	3	3		3				3		
Proportion Time Blocked																
Percent Grade (%)	0				0											
Right Turn Channelized																
Median Type Storage	Undivided															

Critical and Follow-up Headways

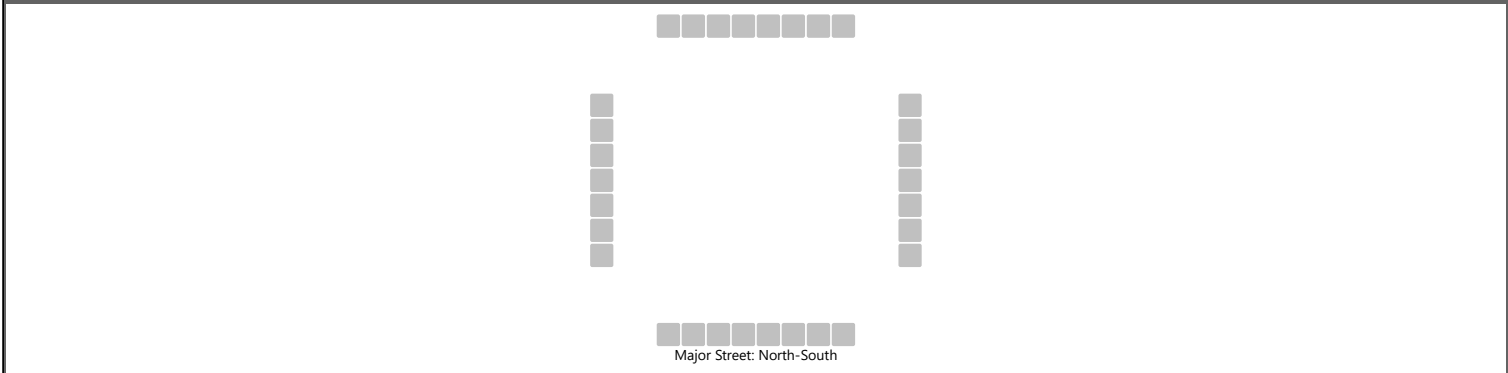
Base Critical Headway (sec)		7.1	6.5	6.2		7.1	6.5	6.2		4.1				4.1		
Critical Headway (sec)		7.13	6.53	6.23		7.13	6.53	6.23		4.13				4.13		
Base Follow-Up Headway (sec)		3.5	4.0	3.3		3.5	4.0	3.3		2.2				2.2		
Follow-Up Headway (sec)		3.53	4.03	3.33		3.53	4.03	3.33		2.23				2.23		

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)			7			27				8				11		
Capacity, c (veh/h)			903			964				1581				1584		
v/c Ratio			0.01			0.03				0.01				0.01		
95% Queue Length, Q ₉₅ (veh)			0.0			0.1				0.0				0.0		
Control Delay (s/veh)			9.0			8.8				7.3	0.0	0.0		7.3	0.1	0.1
Level of Service (LOS)			A			A				A	A	A		A	A	A
Approach Delay (s/veh)	9.0				8.8				1.9				2.2			
Approach LOS	A				A				A				A			

General Information		Site Information	
Analyst	ALW	Intersection	Tschirley / 4th
Agency/Co.	Sunburst Engineering	Jurisdiction	Spokane Valley, WA
Date Performed	5/25/2023	East/West Street	4th Ave
Analysis Year	2028	North/South Street	Tschirley Rd
Time Analyzed	AM Peak	Peak Hour Factor	0.76
Intersection Orientation	North-South	Analysis Time Period (hrs)	0.25
Project Description	Tschirley Apts		

Lanes



Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority		10	11	12		7	8	9	1U	1	2	3	4U	4	5	6
Number of Lanes		0	1	0		0	1	0	0	0	1	0	0	0	1	0
Configuration			LTR				LTR				LTR				LTR	
Volume (veh/h)		5	0	1		0	0	1		2	20	0		0	26	2
Percent Heavy Vehicles (%)		3	3	3		3	3	3		3				3		
Proportion Time Blocked																
Percent Grade (%)	0				0											
Right Turn Channelized																
Median Type Storage	Undivided															

Critical and Follow-up Headways

Base Critical Headway (sec)		7.1	6.5	6.2		7.1	6.5	6.2		4.1				4.1		
Critical Headway (sec)		7.13	6.53	6.23		7.13	6.53	6.23		4.13				4.13		
Base Follow-Up Headway (sec)		3.5	4.0	3.3		3.5	4.0	3.3		2.2				2.2		
Follow-Up Headway (sec)		3.53	4.03	3.33		3.53	4.03	3.33		2.23				2.23		

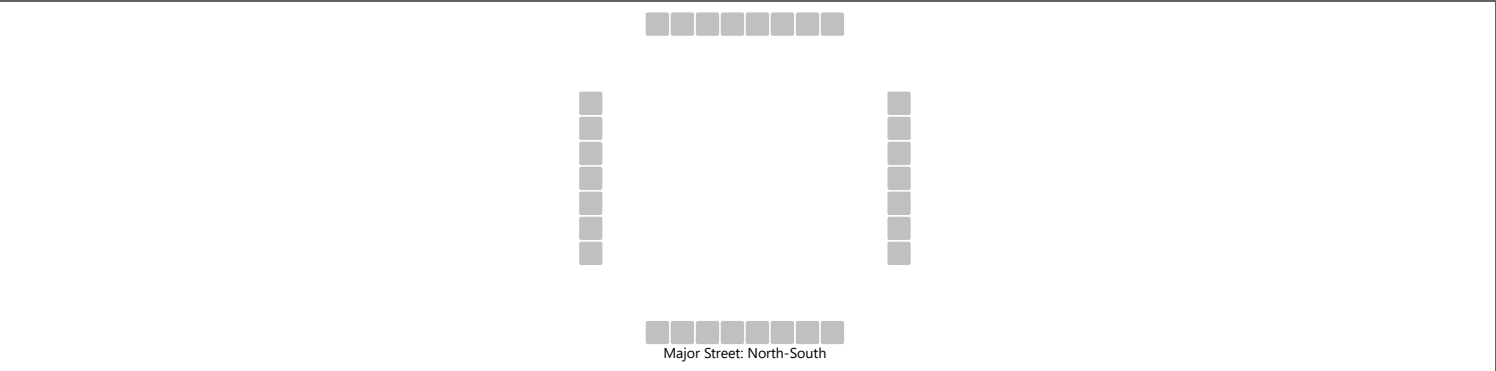
Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)			8				1				3				0			
Capacity, c (veh/h)			937				1047				1567				1581			
v/c Ratio			0.01				0.00				0.00				0.00			
95% Queue Length, Q ₉₅ (veh)			0.0				0.0				0.0				0.0			
Control Delay (s/veh)			8.9				8.4				7.3	0.0	0.0		7.3	0.0	0.0	
Level of Service (LOS)			A				A				A	A	A		A	A	A	
Approach Delay (s/veh)	8.9			8.4			0.7			0.0								
Approach LOS	A			A			A			A			A					

HCS Two-Way Stop-Control Report

General Information		Site Information	
Analyst	ALW	Intersection	Tschirley / 6th
Agency/Co.	Sunburst Engineering	Jurisdiction	Spokane Valley, WA
Date Performed	5/25/2023	East/West Street	6th Ave
Analysis Year	2028	North/South Street	Tschirley Rd
Time Analyzed	AM Peak	Peak Hour Factor	0.72
Intersection Orientation	North-South	Analysis Time Period (hrs)	0.25
Project Description	Tschirley Apts		

Lanes



Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority		10	11	12		7	8	9	1U	1	2	3	4U	4	5	6
Number of Lanes		0	1	0		0	1	0	0	0	1	0	0	0	1	0
Configuration			LTR				LTR				LTR				LTR	
Volume (veh/h)		1	1	1		0	0	14		0	9	2		9	18	2
Percent Heavy Vehicles (%)		3	3	3		3	3	3		3				3		
Proportion Time Blocked																
Percent Grade (%)	0				0											
Right Turn Channelized																
Median Type Storage	Undivided															

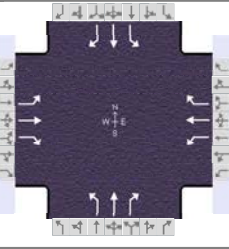
Critical and Follow-up Headways

Base Critical Headway (sec)		7.1	6.5	6.2		7.1	6.5	6.2		4.1				4.1		
Critical Headway (sec)		7.13	6.53	6.23		7.13	6.53	6.23		4.13				4.13		
Base Follow-Up Headway (sec)		3.5	4.0	3.3		3.5	4.0	3.3		2.2				2.2		
Follow-Up Headway (sec)		3.53	4.03	3.33		3.53	4.03	3.33		2.23				2.23		

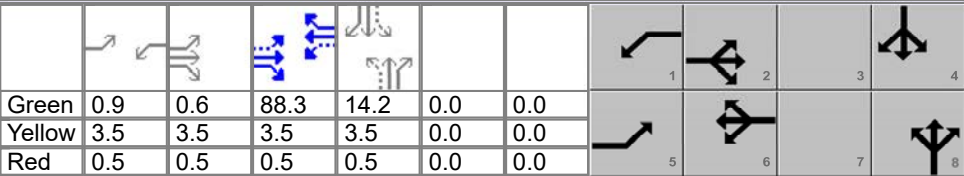
Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)			4			19				0				13		
Capacity, c (veh/h)			907			1063				1579				1596		
v/c Ratio			0.00			0.02				0.00				0.01		
95% Queue Length, Q ₉₅ (veh)			0.0			0.1				0.0				0.0		
Control Delay (s/veh)			9.0			8.4				7.3	0.0	0.0		7.3	0.1	0.1
Level of Service (LOS)			A			A				A	A	A		A	A	A
Approach Delay (s/veh)	9.0				8.4				0.0				2.3			
Approach LOS	A				A				A				A			

HCS Signalized Intersection Results Summary

General Information						Intersection Information		
Agency	Sunburst Engineering					Duration, h	0.250	
Analyst	ALW	Analysis Date	5/24/2023			Area Type	Other	
Jurisdiction	Spokane Valley, WA	Time Period	AM Peak			PHF	0.84	
Urban Street	Sprague Ave	Analysis Year	2028			Analysis Period	1 > 7:00	
Intersection	Sprague / Flora	File Name	FO AM Flora.xus					
Project Description	Tschirley Apts							

Demand Information	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Demand (v), veh/h	61	513	6	4	700	120	23	30	6	97	6	101

Signal Information												
Cycle, s	120.0	Reference Phase	2									
Offset, s	0	Reference Point	End	Green	0.9	0.6	88.3	14.2	0.0	0.0		
Uncoordinated	No	Simult. Gap E/W	On	Yellow	3.5	3.5	3.5	3.5	0.0	0.0		
Force Mode	Fixed	Simult. Gap N/S	On	Red	0.5	0.5	0.5	0.5	0.0	0.0		

Timer Results	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Assigned Phase	5	2	1	6		8		4
Case Number	1.1	3.0	1.1	3.0		5.0		5.0
Phase Duration, s	9.5	96.9	4.9	92.3		18.2		18.2
Change Period, ($Y+R_c$), s	4.0	4.0	4.0	4.0		4.0		4.0
Max Allow Headway (MAH), s	3.1	0.0	3.1	0.0		3.3		3.3
Queue Clearance Time (g_s), s	3.0		2.1			4.4		13.7
Green Extension Time (g_e), s	0.1	0.0	0.0	0.0		0.6		0.5
Phase Call Probability	0.91		0.15			1.00		1.00
Max Out Probability	0.00		0.00			0.00		0.00

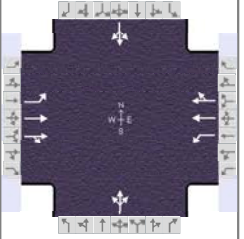
Movement Group Results	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Assigned Movement	5	2	12	1	6	16	3	8	18	7	4	14
Adjusted Flow Rate (v), veh/h	73	611	7	5	833	143	27	36	7	115	7	120
Adjusted Saturation Flow Rate (s), veh/h/ln	1810	1950	1597	1810	1950	1597	1517	1950	1610	1478	1950	1610
Queue Service Time (g_s), s	1.0	12.4	0.1	0.1	23.7	3.1	2.1	2.0	0.5	9.7	0.4	8.5
Cycle Queue Clearance Time (g_c), s	1.0	12.4	0.1	0.1	23.7	3.1	2.4	2.0	0.5	11.7	0.4	8.5
Green Ratio (g/C)	0.80	0.77	0.77	0.74	0.74	0.74	0.12	0.12	0.12	0.12	0.12	0.12
Capacity (c), veh/h	502	1509	1236	611	1434	1175	236	232	192	212	232	192
Volume-to-Capacity Ratio (X)	0.145	0.405	0.006	0.008	0.581	0.122	0.116	0.154	0.037	0.545	0.031	0.628
Back of Queue (Q), ft/ln (95 th percentile)	15.1	191.6	1.6	1.2	347.9	43.5	33.9	44	8.7	156.5	8.7	159.1
Back of Queue (Q), veh/ln (95 th percentile)	0.6	7.7	0.1	0.0	13.9	1.7	1.4	1.8	0.3	6.3	0.3	6.4
Queue Storage Ratio (RQ) (95 th percentile)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Uniform Delay (d_1), s/veh	5.7	4.5	3.1	4.4	7.3	4.6	47.8	47.4	46.8	52.7	46.7	50.3
Incremental Delay (d_2), s/veh	0.0	0.8	0.0	0.0	1.7	0.2	0.1	0.1	0.0	0.8	0.0	1.3
Initial Queue Delay (d_3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Control Delay (d), s/veh	5.7	5.3	3.1	4.4	9.1	4.8	47.9	47.6	46.8	53.5	46.8	51.6
Level of Service (LOS)	A	A	A	A	A	A	D	D	D	D	D	D
Approach Delay, s/veh / LOS	5.3	A		8.4	A		47.6	D		52.3	D	
Intersection Delay, s/veh / LOS	14.1						B					

Multimodal Results	EB		WB		NB		SB	
Pedestrian LOS Score / LOS	2.03	B	2.05	B	2.14	B	2.14	B
Bicycle LOS Score / LOS	1.63	B	2.11	B	0.60	A	0.89	A

HCS Signalized Intersection Results Summary

General Information

Agency	Sunburst Engineering		
Analyst	ALW	Analysis Date	5/24/2023
Jurisdiction	Spokane Valley, WA	Time Period	PM Peak
Urban Street	Appleway	Analysis Year	2028
Intersection	Appleway / Corbin	File Name	FO PM Appleway.x
Project Description	Tschirley Apts		



Demand Information

	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Demand (v), veh/h	13	640	389	6	676	14	218	7	5	8	8	11

Signal Information

Cycle, s	120.0	Reference Phase	2									
Offset, s	0	Reference Point	End									
Uncoordinated	No	Simult. Gap E/W	On	Green	1.2	1.1	82.0	22.3	0.0	0.0		
Force Mode	Fixed	Simult. Gap N/S	On	Yellow	3.5	0.0	3.5	3.5	0.0	0.0		
				Red	1.0	0.0	1.0	1.0	0.0	0.0		

Timer Results

	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Assigned Phase	5	2	1	6		8		4
Case Number	2.0	4.0	2.0	4.0		8.0		8.0
Phase Duration, s	6.7	87.5	5.7	86.5		26.8		26.8
Change Period, ($Y+R_c$), s	4.5	4.5	4.5	4.5		4.5		4.5
Max Allow Headway (MAH), s	3.1	0.0	3.1	0.0		3.1		3.1
Queue Clearance Time (g_s), s	2.9		2.4			22.2		3.6
Green Extension Time (g_e), s	0.0	0.0	0.0	0.0		0.2		0.5
Phase Call Probability	0.37		0.19			1.00		1.00
Max Out Probability	0.00		0.00			0.80		0.00

Movement Group Results

	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Assigned Movement	5	2	12	1	6	16	3	8	18	7	4	14
Adjusted Flow Rate (v), veh/h	14	586	508	6	370	364		245			29	
Adjusted Saturation Flow Rate (s), veh/h/ln	1810	1950	1687	1810	1950	1920		1517			1865	
Queue Service Time (g_s), s	0.9	15.9	15.9	0.4	8.9	8.9		18.6			0.0	
Cycle Queue Clearance Time (g_c), s	0.9	15.9	15.9	0.4	8.9	8.9		20.2			1.6	
Green Ratio (g/C)	0.02	0.69	0.69	0.01	0.68	0.68		0.19			0.19	
Capacity (c), veh/h	33	1349	1167	17	1332	1312		341			386	
Volume-to-Capacity Ratio (X)	0.414	0.435	0.435	0.368	0.278	0.278		0.718			0.074	
Back of Queue (Q), ft/ln (95 th percentile)	19.8	262.9	236.8	9.7	161.6	159.4		300.4			31.7	
Back of Queue (Q), veh/ln (95 th percentile)	0.8	10.5	9.5	0.4	6.5	6.4		12.0			1.3	
Queue Storage Ratio (RQ) (95 th percentile)	0.00	0.00	0.00	0.00	0.00	0.00		0.00			0.00	
Uniform Delay (d_1), s/veh	58.2	8.1	8.2	59.1	7.4	7.4		48.0			40.4	
Incremental Delay (d_2), s/veh	3.0	1.0	1.2	4.8	0.5	0.5		4.6			0.0	
Initial Queue Delay (d_3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0		0.0			0.0	
Control Delay (d), s/veh	61.3	9.2	9.3	63.8	8.0	8.0		52.5			40.4	
Level of Service (LOS)	E	A	A	E	A	A		D			D	
Approach Delay, s/veh / LOS	9.9		A	8.4		A		52.5		D	40.4	
Intersection Delay, s/veh / LOS	14.7						B					

Multimodal Results

	EB		WB		NB		SB	
Pedestrian LOS Score / LOS	1.64	B	1.64	B	2.30	B	2.30	B
Bicycle LOS Score / LOS	1.40	A	1.10	A	0.89	A	0.53	A

HCS Two-Way Stop-Control Report

General Information

Analyst

ALW

Agency/Co.

Sunburst Engineering

Date Performed

5/24/2023

Analysis Year

2028

Time Analyzed

PM Peak

Intersection Orientation

North-South

Project Description

Tschirley Apts

Site Information

Intersection

Sprague / Tschirley Wye

Jurisdiction

Spokane Valley, WA

East/West Street

Tschirley Wye

North/South Street

Sprague Ave

Peak Hour Factor

0.93

Analysis Time Period (hrs)

0.25

Lanes


Major Street: North-South

Vehicle Volumes and Adjustments																
Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority		10	11	12		7	8	9	1U	1	2	3	4U	4	5	6
Number of Lanes		0	1	0		0	0	0	0	0	1	0	0	0	1	0
Configuration			LR							LT						TR
Volume (veh/h)		4		5						2	230				370	2
Percent Heavy Vehicles (%)		0		0						0						
Proportion Time Blocked																
Percent Grade (%)	0															
Right Turn Channelized																
Median Type Storage	Undivided															

Critical and Follow-up Headways																
Base Critical Headway (sec)		7.1		6.2						4.1						
Critical Headway (sec)		6.40		6.20						4.10						
Base Follow-Up Headway (sec)		3.5		3.3						2.2						
Follow-Up Headway (sec)		3.50		3.30						2.20						

Delay, Queue Length, and Level of Service																
Flow Rate, v (veh/h)			10							2						
Capacity, c (veh/h)			535							1170						
v/c Ratio			0.02							0.00						
95% Queue Length, Q ₉₅ (veh)			0.1							0.0						
Control Delay (s/veh)			11.8							8.1	0.0					
Level of Service (LOS)			B							A	A					
Approach Delay (s/veh)	11.8								0.1							
Approach LOS	B								A							

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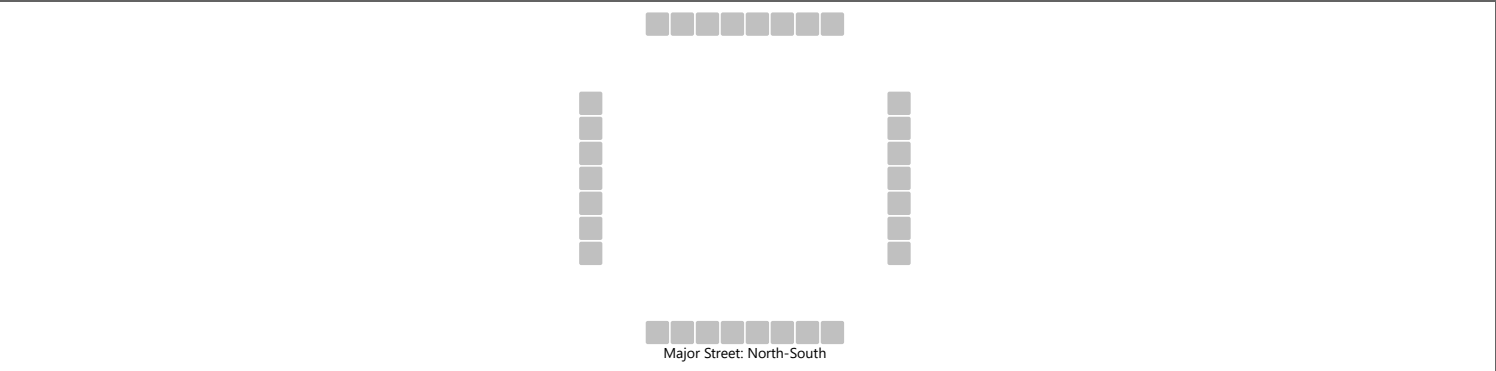
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HCS Two-Way Stop-Control Report

General Information		Site Information	
Analyst	ALW	Intersection	Tschirley / Tschirley Wye
Agency/Co.	Sunburst Engineering	Jurisdiction	Spokane Valley, WA
Date Performed	5/24/2023	East/West Street	Tschirley Wye
Analysis Year	2028	North/South Street	Tschirley Rd
Time Analyzed	PM Peak	Peak Hour Factor	0.78
Intersection Orientation	North-South	Analysis Time Period (hrs)	0.25
Project Description	Tschirley Apts		

Lanes



Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority		10	11	12		7	8	9	1U	1	2	3	4U	4	5	6
Number of Lanes		0	1	0		0	1	0	0	0	1	0	0	0	1	0
Configuration			LTR				LTR				LTR				LTR	
Volume (veh/h)		0	0	0		4	0	4		0	40	9		6	61	0
Percent Heavy Vehicles (%)		0	0	0		0	0	0		0				0		
Proportion Time Blocked																
Percent Grade (%)	0				0											
Right Turn Channelized																
Median Type Storage	Undivided															

Critical and Follow-up Headways

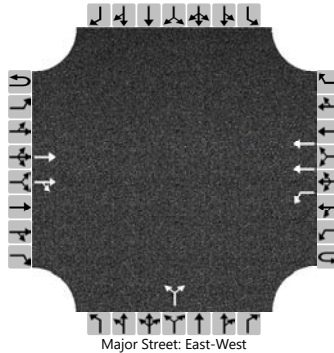
Base Critical Headway (sec)		7.1	6.5	6.2		7.1	6.5	6.2		4.1				4.1		
Critical Headway (sec)		7.10	6.50	6.20		7.10	6.50	6.20		4.10				4.10		
Base Follow-Up Headway (sec)		3.5	4.0	3.3		3.5	4.0	3.3		2.2				2.2		
Follow-Up Headway (sec)		3.50	4.00	3.30		3.50	4.00	3.30		2.20				2.20		

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)			0			10				0				8		
Capacity, c (veh/h)			0			905				1533				1553		
v/c Ratio						0.01				0.00				0.00		
95% Queue Length, Q ₉₅ (veh)						0.0				0.0				0.0		
Control Delay (s/veh)						9.0				7.3	0.0	0.0		7.3	0.0	0.0
Level of Service (LOS)						A				A	A	A		A	A	A
Approach Delay (s/veh)					9.0				0.0				0.7			
Approach LOS					A				A				A			

General Information		Site Information	
Analyst	ALW	Intersection	Sprague / Tschirley
Agency/Co.	Sunburst Engineering	Jurisdiction	Spokane Valley, WA
Date Performed	5/24/2023	East/West Street	Sprague Ave
Analysis Year	2028	North/South Street	Tschirley Rd
Time Analyzed	PM Peak	Peak Hour Factor	0.93
Intersection Orientation	East-West	Analysis Time Period (hrs)	0.25
Project Description	Tschirley Apts		

Lanes



Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority	1U	1	2	3	4U	4	5	6		7	8	9		10	11	12
Number of Lanes	0	0	2	0	0	1	2	0		0	1	0		0	0	0
Configuration			T	TR		L	T				LR					
Volume (veh/h)			963	57	0	23	877			32		19				
Percent Heavy Vehicles (%)					0	0				0		0				
Proportion Time Blocked																
Percent Grade (%)									0							
Right Turn Channelized																
Median Type Storage	Left Only								1							

Critical and Follow-up Headways

Base Critical Headway (sec)					4.1			7.5		6.9				
Critical Headway (sec)					4.10			6.80		6.90				
Base Follow-Up Headway (sec)					2.2			3.5		3.3				
Follow-Up Headway (sec)					2.20			3.50		3.30				

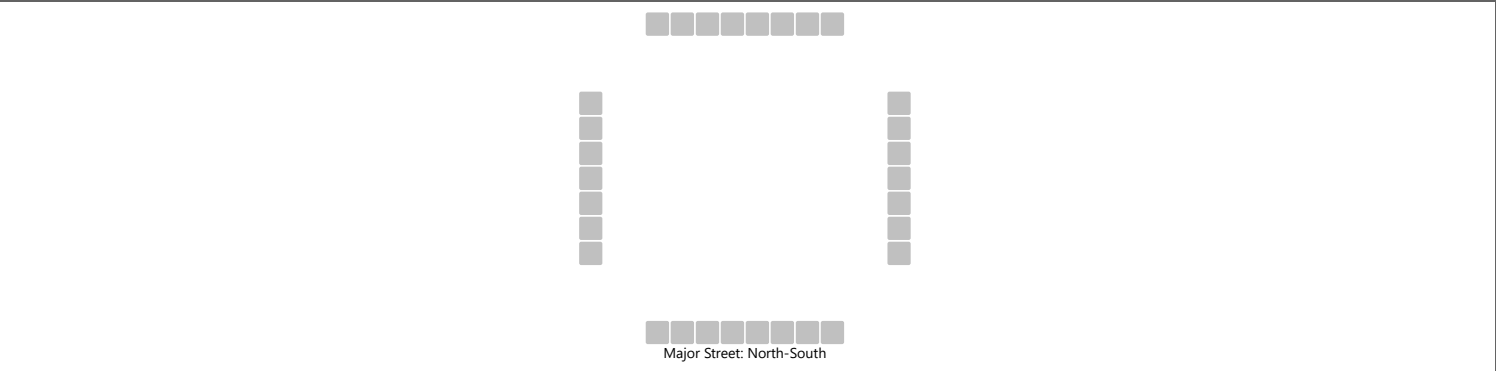
Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)					25					55					
Capacity, c (veh/h)					644					271					
v/c Ratio					0.04					0.20					
95% Queue Length, Q_{95} (veh)					0.1					0.7					
Control Delay (s/veh)					10.8					21.6					
Level of Service (LOS)					B					C					
Approach Delay (s/veh)					0.3				21.6						
Approach LOS					A				C						

HCS Two-Way Stop-Control Report

General Information		Site Information	
Analyst	ALW	Intersection	Tschirley / 3rd
Agency/Co.	Sunburst Engineering	Jurisdiction	Spokane Valley, WA
Date Performed	5/25/2023	East/West Street	3rd Ave
Analysis Year	2028	North/South Street	Tschirley Rd
Time Analyzed	PM Peak	Peak Hour Factor	0.89
Intersection Orientation	North-South	Analysis Time Period (hrs)	0.25
Project Description	Tschirley Apts		

Lanes



Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority		10	11	12		7	8	9	1U	1	2	3	4U	4	5	6
Number of Lanes		0	1	0		0	1	0	0	0	1	0	0	0	1	0
Configuration			LTR				LTR				LTR				LTR	
Volume (veh/h)		7	6	1		0	4	18		9	21	0		24	28	7
Percent Heavy Vehicles (%)		3	3	3		3	3	3		3				3		
Proportion Time Blocked																
Percent Grade (%)	0				0											
Right Turn Channelized																
Median Type Storage	Undivided															

Critical and Follow-up Headways

Base Critical Headway (sec)		7.1	6.5	6.2		7.1	6.5	6.2		4.1				4.1		
Critical Headway (sec)		7.13	6.53	6.23		7.13	6.53	6.23		4.13				4.13		
Base Follow-Up Headway (sec)		3.5	4.0	3.3		3.5	4.0	3.3		2.2				2.2		
Follow-Up Headway (sec)		3.53	4.03	3.33		3.53	4.03	3.33		2.23				2.23		

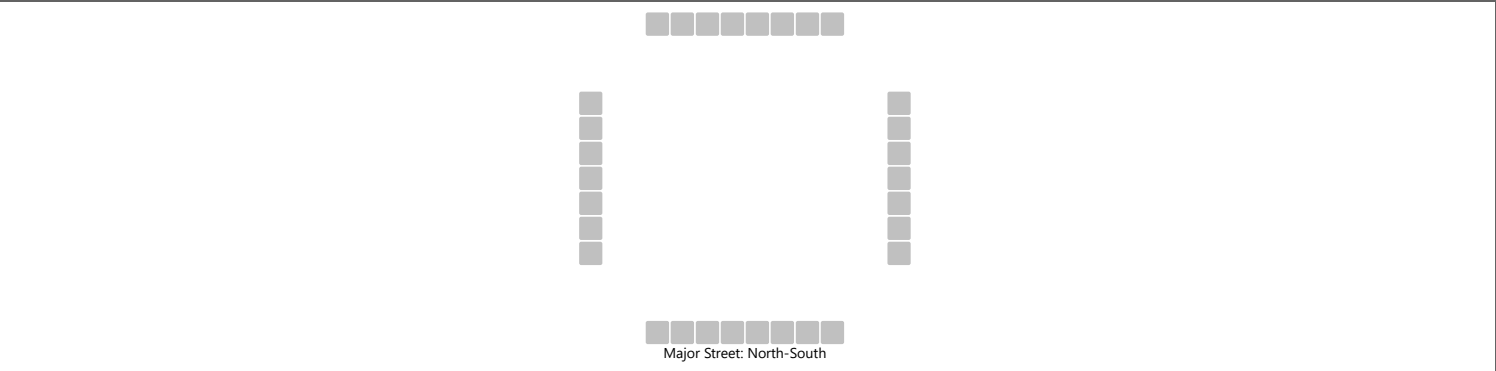
Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)			16				25			10				27		
Capacity, c (veh/h)			775				974			1564				1585		
v/c Ratio			0.02				0.03			0.01				0.02		
95% Queue Length, Q ₉₅ (veh)			0.1				0.1			0.0				0.1		
Control Delay (s/veh)			9.7				8.8			7.3	0.0	0.0		7.3	0.1	0.1
Level of Service (LOS)			A				A			A	A	A		A	A	A
Approach Delay (s/veh)	9.7				8.8				2.2				3.0			
Approach LOS	A				A				A				A			

HCS Two-Way Stop-Control Report

General Information		Site Information	
Analyst	ALW	Intersection	Tschirley / 4th
Agency/Co.	Sunburst Engineering	Jurisdiction	Spokane Valley, WA
Date Performed	5/25/2023	East/West Street	4th Ave
Analysis Year	2028	North/South Street	Tschirley Rd
Time Analyzed	PM Peak	Peak Hour Factor	0.86
Intersection Orientation	North-South	Analysis Time Period (hrs)	0.25
Project Description	Tschirley Apts		

Lanes



Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority		10	11	12		7	8	9	1U	1	2	3	4U	4	5	6
Number of Lanes		0	1	0		0	1	0	0	0	1	0	0	0	1	0
Configuration			LTR				LTR				LTR				LTR	
Volume (veh/h)		4	1	6		1	0	2		4	30	0		0	28	2
Percent Heavy Vehicles (%)		3	3	3		3	3	3		3				3		
Proportion Time Blocked																
Percent Grade (%)	0				0											
Right Turn Channelized																
Median Type Storage	Undivided															

Critical and Follow-up Headways

Base Critical Headway (sec)		7.1	6.5	6.2		7.1	6.5	6.2		4.1				4.1		
Critical Headway (sec)		7.13	6.53	6.23		7.13	6.53	6.23		4.13				4.13		
Base Follow-Up Headway (sec)		3.5	4.0	3.3		3.5	4.0	3.3		2.2				2.2		
Follow-Up Headway (sec)		3.53	4.03	3.33		3.53	4.03	3.33		2.23				2.23		

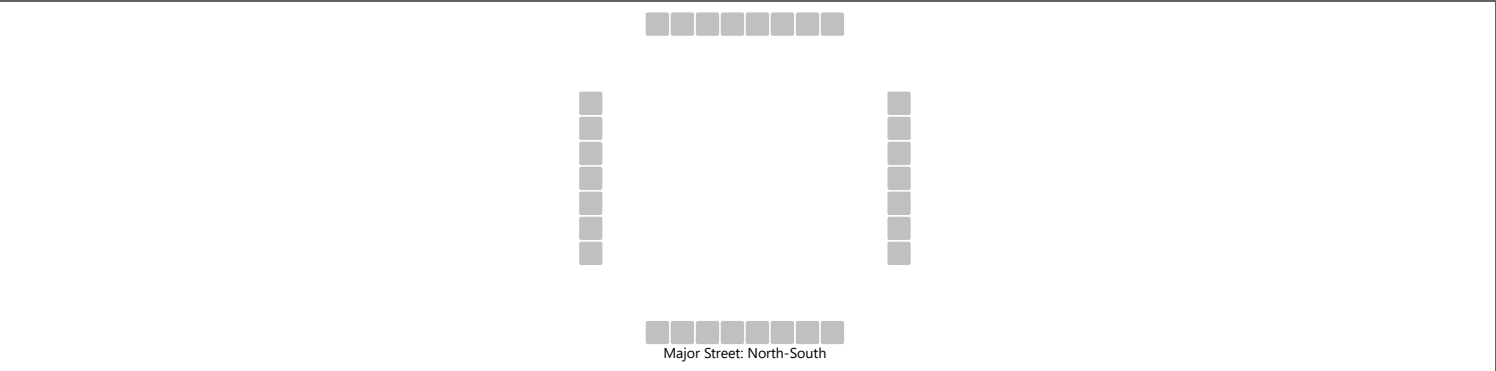
Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)			13			3				5				0		
Capacity, c (veh/h)			960			983				1570				1570		
v/c Ratio			0.01			0.00				0.00				0.00		
95% Queue Length, Q ₉₅ (veh)			0.0			0.0				0.0				0.0		
Control Delay (s/veh)			8.8			8.7				7.3	0.0	0.0		7.3	0.0	0.0
Level of Service (LOS)			A			A				A	A	A		A	A	A
Approach Delay (s/veh)	8.8				8.7				0.9				0.0			
Approach LOS	A				A				A				A			

HCS Two-Way Stop-Control Report

General Information		Site Information	
Analyst	ALW	Intersection	Tschirley / 6th
Agency/Co.	Sunburst Engineering	Jurisdiction	Spokane Valley, WA
Date Performed	5/25/2023	East/West Street	6th Ave
Analysis Year	2028	North/South Street	Tschirley Rd
Time Analyzed	PM Peak	Peak Hour Factor	0.89
Intersection Orientation	North-South	Analysis Time Period (hrs)	0.25
Project Description	Tschirley Apts		

Lanes



Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority		10	11	12		7	8	9	1U	1	2	3	4U	4	5	6
Number of Lanes		0	1	0		0	1	0	0	0	1	0	0	0	1	0
Configuration			LTR				LTR				LTR				LTR	
Volume (veh/h)		0	2	0		1	0	8		0	20	0		13	15	1
Percent Heavy Vehicles (%)		3	3	3		3	3	3		3				3		
Proportion Time Blocked																
Percent Grade (%)	0				0											
Right Turn Channelized																
Median Type Storage	Undivided															

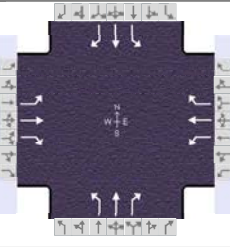
Critical and Follow-up Headways

Base Critical Headway (sec)		7.1	6.5	6.2		7.1	6.5	6.2		4.1				4.1		
Critical Headway (sec)		7.13	6.53	6.23		7.13	6.53	6.23		4.13				4.13		
Base Follow-Up Headway (sec)		3.5	4.0	3.3		3.5	4.0	3.3		2.2				2.2		
Follow-Up Headway (sec)		3.53	4.03	3.33		3.53	4.03	3.33		2.23				2.23		

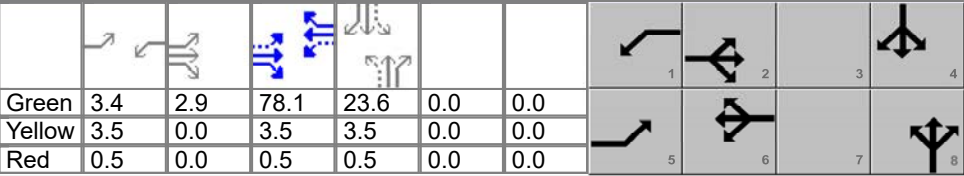
Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)			2				10			0				15		
Capacity, c (veh/h)			812				1033			1592				1586		
v/c Ratio			0.00				0.01			0.00				0.01		
95% Queue Length, Q ₉₅ (veh)			0.0				0.0			0.0				0.0		
Control Delay (s/veh)			9.4				8.5			7.3	0.0	0.0		7.3	0.1	0.1
Level of Service (LOS)			A				A			A	A	A		A	A	A
Approach Delay (s/veh)	9.4				8.5				0.0				3.3			
Approach LOS	A				A				A				A			

HCS Signalized Intersection Results Summary

General Information				Intersection Information		
Agency	Sunburst Engineering			Duration, h	0.250	
Analyst	ALW	Analysis Date	5/24/2023	Area Type	Other	
Jurisdiction	Spokane Valley, WA	Time Period	PM Peak	PHF	0.94	
Urban Street	Sprague Ave	Analysis Year	2028	Analysis Period	1 > 7:00	
Intersection	Sprague / Flora	File Name	FO PM Flora.xus			
Project Description	Tschirley Apts					

Demand Information	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Demand (v), veh/h	178	932	18	24	912	108	25	13	11	234	22	143

Signal Information											
Cycle, s	120.0	Reference Phase	2		Green	3.4	2.9	78.1	23.6	0.0	0.0
Offset, s	0	Reference Point	End								
Uncoordinated	No	Simult. Gap E/W	On								
Force Mode	Fixed	Simult. Gap N/S	On								
				Yellow	3.5	0.0	3.5	3.5	0.0	0.0	
				Red	0.5	0.0	0.5	0.5	0.0	0.0	

Timer Results	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Assigned Phase	5	2	1	6		8		4
Case Number	1.1	3.0	1.1	3.0		5.0		5.0
Phase Duration, s	10.3	84.9	7.4	82.1		27.6		27.6
Change Period, ($Y+R_c$), s	4.0	4.0	4.0	4.0		4.0		4.0
Max Allow Headway (MAH), s	3.1	0.0	3.1	0.0		3.3		3.3
Queue Clearance Time (g_s), s	6.1		2.6			5.0		23.3
Green Extension Time (g_e), s	0.3	0.0	0.0	0.0		1.0		0.4
Phase Call Probability	1.00		0.57			1.00		1.00
Max Out Probability	0.00		0.00			0.00		1.00

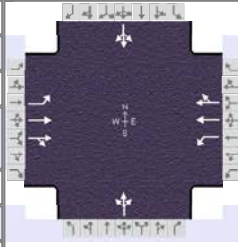
Movement Group Results	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Assigned Movement	5	2	12	1	6	16	3	8	18	7	4	14
Adjusted Flow Rate (v), veh/h	189	991	19	26	970	115	27	14	12	249	23	152
Adjusted Saturation Flow Rate (s), veh/h/ln	1810	1950	1597	1810	1950	1597	1494	1950	1610	1507	1950	1610
Queue Service Time (g_s), s	4.1	40.4	0.5	0.6	41.5	3.3	1.9	0.7	0.7	20.6	1.2	10.1
Cycle Queue Clearance Time (g_c), s	4.1	40.4	0.5	0.6	41.5	3.3	3.0	0.7	0.7	21.3	1.2	10.1
Green Ratio (g/C)	0.71	0.67	0.67	0.68	0.65	0.65	0.20	0.20	0.20	0.20	0.20	0.20
Capacity (c), veh/h	334	1315	1077	297	1268	1039	340	384	317	348	384	317
Volume-to-Capacity Ratio (X)	0.567	0.754	0.018	0.086	0.765	0.111	0.078	0.036	0.037	0.715	0.061	0.480
Back of Queue (Q), ft/ln (95 th percentile)	111.5	596.9	7.2	9.6	625.6	50.3	29.9	15.2	12.8	309	25.8	183.8
Back of Queue (Q), veh/ln (95 th percentile)	4.5	23.9	0.3	0.4	25.0	2.0	1.2	0.6	0.5	12.4	1.0	7.4
Queue Storage Ratio (RQ) (95 th percentile)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Uniform Delay (d_1), s/veh	16.7	12.9	6.4	13.1	14.6	7.9	40.4	39.0	39.0	47.6	39.2	42.7
Incremental Delay (d_2), s/veh	0.6	4.0	0.0	0.0	4.4	0.2	0.0	0.0	0.0	4.7	0.0	0.4
Initial Queue Delay (d_3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Control Delay (d), s/veh	17.3	17.0	6.5	13.1	19.0	8.1	40.4	39.0	39.0	52.3	39.2	43.1
Level of Service (LOS)	B	B	A	B	B	A	D	D	D	D	D	D
Approach Delay, s/veh / LOS	16.9	B		17.8	B		39.7	D		48.3	D	
Intersection Delay, s/veh / LOS	22.4						C					

Multimodal Results	EB		WB		NB		SB	
Pedestrian LOS Score / LOS	2.06	B	2.07	B	2.13	B	2.13	B
Bicycle LOS Score / LOS	2.47	B	2.32	B	0.57	A	1.19	A

TECHNICAL APPENDIX

YEAR 2028 LEVEL OF SERVICE CALCULATIONS WITH PROJECT

HCS Signalized Intersection Results Summary

General Information				Intersection Information		
Agency	Sunburst Engineering			Duration, h	0.250	
Analyst	ALW	Analysis Date	5/24/2023	Area Type	Other	
Jurisdiction	Spokane Valley, WA	Time Period	AM Peak w/ Project	PHF	0.76	
Urban Street	Appleway	Analysis Year	2028	Analysis Period	1 > 7:00	
Intersection	Appleway / Corbin	File Name	FW AM Appleway.xus			
Project Description	Tschirley Apts					

Demand Information	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Demand (v), veh/h	16	419	140	3	530	8	193	15	3	5	7	12

Signal Information												
Cycle, s	120.0	Reference Phase	2									
Offset, s	0	Reference Point	End									
Uncoordinated	No	Simult. Gap E/W	On	Green	0.7	2.3	78.0	25.5	0.0	0.0		
				Yellow	3.5	0.0	3.5	3.5	0.0	0.0		
Force Mode	Fixed	Simult. Gap N/S	On	Red	1.0	0.0	1.0	1.0	0.0	0.0		

Timer Results	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Assigned Phase	5	2	1	6		8		4
Case Number	2.0	4.0	2.0	4.0		8.0		8.0
Phase Duration, s	7.5	84.8	5.2	82.5		30.0		30.0
Change Period, ($Y+R_c$), s	4.5	4.5	4.5	4.5		4.5		4.5
Max Allow Headway (MAH), s	3.1	0.0	3.1	0.0		3.2		3.2
Queue Clearance Time (g_s), s	3.4		2.3			25.5		3.7
Green Extension Time (g_e), s	0.0	0.0	0.0	0.0		0.0		0.6
Phase Call Probability	0.50		0.12			1.00		1.00
Max Out Probability	0.00		0.00			1.00		0.00

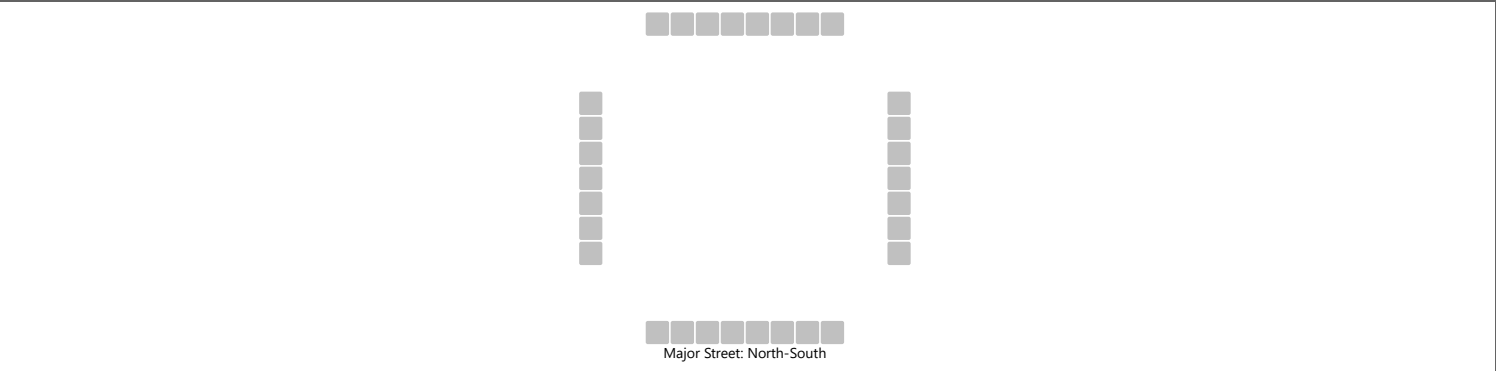
Movement Group Results	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Assigned Movement	5	2	12	1	6	16	3	8	18	7	4	14
Adjusted Flow Rate (v), veh/h	21	385	351	4	356	352		278			32	
Adjusted Saturation Flow Rate (s), veh/h/ln	1810	1950	1767	1810	1950	1924		1476			1885	
Queue Service Time (g_s), s	1.4	9.8	9.8	0.3	9.4	9.4		21.8			0.0	
Cycle Queue Clearance Time (g_c), s	1.4	9.8	9.8	0.3	9.4	9.4		23.5			1.7	
Green Ratio (g/C)	0.03	0.67	0.67	0.01	0.65	0.65		0.21			0.21	
Capacity (c), veh/h	46	1304	1182	11	1267	1250		371			437	
Volume-to-Capacity Ratio (X)	0.461	0.295	0.297	0.353	0.281	0.281		0.748			0.072	
Back of Queue (Q), ft/ln (95 th percentile)	29.7	180.7	165.5	6.3	177.1	174.9		340.7			33.6	
Back of Queue (Q), veh/ln (95 th percentile)	1.2	7.2	6.6	0.3	7.1	7.0		13.6			1.3	
Queue Storage Ratio (RQ) (95 th percentile)	0.00	0.00	0.00	0.00	0.00	0.00		0.00			0.00	
Uniform Delay (d_1), s/veh	57.7	8.2	8.2	59.4	9.0	9.0		46.5			37.9	
Incremental Delay (d_2), s/veh	2.7	0.6	0.6	6.9	0.6	0.6		7.3			0.0	
Initial Queue Delay (d_3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0		0.0			0.0	
Control Delay (d), s/veh	60.4	8.8	8.9	66.3	9.6	9.6		53.8			37.9	
Level of Service (LOS)	E	A	A	E	A	A		D			D	
Approach Delay, s/veh / LOS	10.2	B		9.9	A		53.8	D		37.9	D	
Intersection Delay, s/veh / LOS	17.4						B					

Multimodal Results	EB		WB		NB		SB	
Pedestrian LOS Score / LOS	1.65	B	1.65	B	2.30	B	2.30	B
Bicycle LOS Score / LOS	1.11	A	1.07	A	0.95	A	0.54	A

HCS Two-Way Stop-Control Report

General Information		Site Information	
Analyst	ALW	Intersection	Sprague / Tschirley Wye
Agency/Co.	Sunburst Engineering	Jurisdiction	Spokane Valley, WA
Date Performed	5/24/2023	East/West Street	Tschirley Wye
Analysis Year	2028	North/South Street	Sprague Ave
Time Analyzed	AM Peak w/ Project	Peak Hour Factor	0.96
Intersection Orientation	North-South	Analysis Time Period (hrs)	0.25
Project Description	Tschirley Apts		

Lanes



Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority		10	11	12		7	8	9	1U	1	2	3	4U	4	5	6
Number of Lanes		0	1	0		0	0	0	0	0	1	0	0	0	1	0
Configuration			LR							LT						TR
Volume (veh/h)		3		1						1	183				91	3
Percent Heavy Vehicles (%)		0		0						0						
Proportion Time Blocked																
Percent Grade (%)	0															
Right Turn Channelized																
Median Type Storage	Undivided															

Critical and Follow-up Headways

Base Critical Headway (sec)		7.1		6.2						4.1						
Critical Headway (sec)		6.40		6.20						4.10						
Base Follow-Up Headway (sec)		3.5		3.3						2.2						
Follow-Up Headway (sec)		3.50		3.30						2.20						

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)			4							1						
Capacity, c (veh/h)			756							1508						
v/c Ratio			0.01							0.00						
95% Queue Length, Q ₉₅ (veh)			0.0							0.0						
Control Delay (s/veh)			9.8							7.4	0.0					
Level of Service (LOS)			A							A	A					
Approach Delay (s/veh)	9.8								0.0							
Approach LOS	A								A							

HCS Two-Way Stop-Control Report

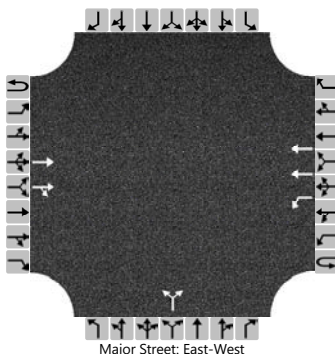
General Information

Analyst	ALW
Agency/Co.	Sunburst Engineering
Date Performed	5/24/2023
Analysis Year	2028
Time Analyzed	AM Peak w/ Project
Intersection Orientation	East-West
Project Description	Tschirley Apts

Site Information

Intersection	Sprague / Tschirley
Jurisdiction	Spokane Valley, WA
East/West Street	Sprague Ave
North/South Street	Tschirley Rd
Peak Hour Factor	0.83
Analysis Time Period (hrs)	0.25

Lanes



Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority	1U	1	2	3	4U	4	5	6		7	8	9		10	11	12
Number of Lanes	0	0	2	0	0	1	2	0		0	1	0		0	0	0
Configuration			T	TR		L	T				LR					
Volume (veh/h)			606	40	0	15	888			64		47				
Percent Heavy Vehicles (%)					0	0				0		0				
Proportion Time Blocked																
Percent Grade (%)									0							
Right Turn Channelized																
Median Type Storage	Left Only								1							

Critical and Follow-up Headways

Base Critical Headway (sec)						4.1				7.5		6.9				
Critical Headway (sec)						4.10				6.80		6.90				
Base Follow-Up Headway (sec)						2.2				3.5		3.3				
Follow-Up Headway (sec)						2.20				3.50		3.30				

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)						18					134					
Capacity, c (veh/h)						847					365					
v/c Ratio						0.02					0.37					
95% Queue Length, Q ₉₅ (veh)						0.1					1.6					
Control Delay (s/veh)						9.3					20.4					
Level of Service (LOS)						A					C					
Approach Delay (s/veh)					0.2				20.4							
Approach LOS					A				C							

HCS Two-Way Stop-Control Report

General Information

Analyst

ALW

Agency/Co.

Sunburst Engineering

Date Performed

5/24/2023

Analysis Year

2028

Time Analyzed

AM Peak w/ Project

Intersection Orientation

North-South

Project Description

Tschirley Apts

Site Information

Intersection

Tschirley / Tschirley Wye

Jurisdiction

Spokane Valley, WA

East/West Street

Tschirley Wye

North/South Street

Tschirley Rd

Peak Hour Factor

0.85

Analysis Time Period (hrs)

0.25

Lanes


Major Street: North-South

Vehicle Volumes and Adjustments																
Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority		10	11	12		7	8	9	1U	1	2	3	4U	4	5	6
Number of Lanes		0	1	0		0	1	0	0	0	1	0	0	0	1	0
Configuration			LTR				LTR				LTR				LTR	
Volume (veh/h)		0	0	1		5	0	3		0	97	1		0	52	0
Percent Heavy Vehicles (%)		0	0	0		0	0	0		0				0		
Proportion Time Blocked																
Percent Grade (%)	0				0											
Right Turn Channelized																
Median Type Storage	Undivided															

Critical and Follow-up Headways																
Base Critical Headway (sec)		7.1	6.5	6.2		7.1	6.5	6.2		4.1				4.1		
Critical Headway (sec)		7.10	6.50	6.20		7.10	6.50	6.20		4.10				4.10		
Base Follow-Up Headway (sec)		3.5	4.0	3.3		3.5	4.0	3.3		2.2				2.2		
Follow-Up Headway (sec)		3.50	4.00	3.30		3.50	4.00	3.30		2.20				2.20		

Delay, Queue Length, and Level of Service																
Flow Rate, v (veh/h)			1				9			0				0		
Capacity, c (veh/h)			1010				841			1555				1486		
v/c Ratio			0.00				0.01			0.00				0.00		
95% Queue Length, Q ₉₅ (veh)			0.0				0.0			0.0				0.0		
Control Delay (s/veh)			8.6				9.3			7.3	0.0	0.0		7.4	0.0	0.0
Level of Service (LOS)			A				A			A	A	A		A	A	A
Approach Delay (s/veh)	8.6				9.3				0.0				0.0			
Approach LOS	A				A				A				A			

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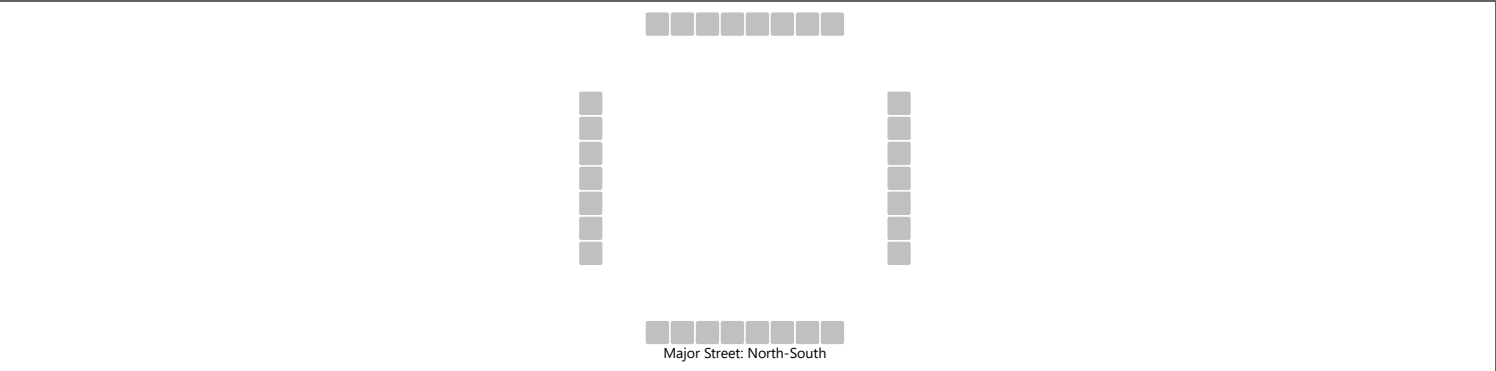
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HCS Two-Way Stop-Control Report

General Information		Site Information	
Analyst	ALW	Intersection	Tschirley / 3rd
Agency/Co.	Sunburst Engineering	Jurisdiction	Spokane Valley, WA
Date Performed	5/25/2023	East/West Street	3rd Ave
Analysis Year	2028	North/South Street	Tschirley Rd
Time Analyzed	AM Peak w/ Project	Peak Hour Factor	0.83
Intersection Orientation	North-South	Analysis Time Period (hrs)	0.25
Project Description	Tschirley Apts		

Lanes



Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority		10	11	12		7	8	9	1U	1	2	3	4U	4	5	6
Number of Lanes		0	1	0		0	1	0	0	0	1	0	0	0	1	0
Configuration			LTR				LTR				LTR				LTR	
Volume (veh/h)		4	0	9		0	6	16		30	78	1		9	37	3
Percent Heavy Vehicles (%)		3	3	3		3	3	3		3				3		
Proportion Time Blocked																
Percent Grade (%)	0				0											
Right Turn Channelized																
Median Type Storage	Undivided															

Critical and Follow-up Headways

Base Critical Headway (sec)		7.1	6.5	6.2		7.1	6.5	6.2		4.1				4.1		
Critical Headway (sec)		7.13	6.53	6.23		7.13	6.53	6.23		4.13				4.13		
Base Follow-Up Headway (sec)		3.5	4.0	3.3		3.5	4.0	3.3		2.2				2.2		
Follow-Up Headway (sec)		3.53	4.03	3.33		3.53	4.03	3.33		2.23				2.23		

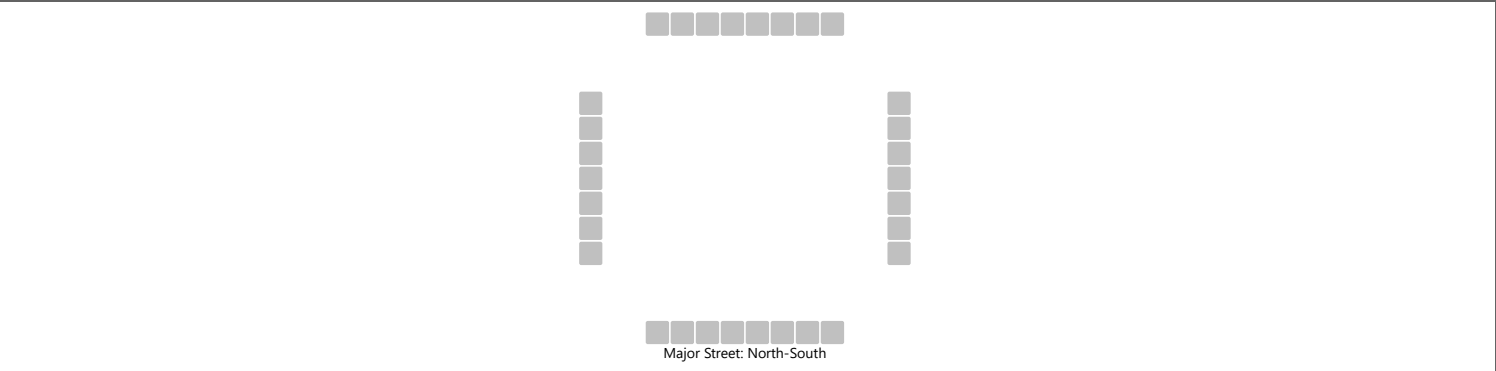
Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)			16			27				36				11		
Capacity, c (veh/h)			873			845				1552				1492		
v/c Ratio			0.02			0.03				0.02				0.01		
95% Queue Length, Q ₉₅ (veh)			0.1			0.1				0.1				0.0		
Control Delay (s/veh)			9.2			9.4				7.4	0.2	0.2		7.4	0.1	0.1
Level of Service (LOS)			A			A				A	A	A		A	A	A
Approach Delay (s/veh)	9.2				9.4				2.2				1.4			
Approach LOS	A				A				A				A			

HCS Two-Way Stop-Control Report

General Information		Site Information	
Analyst	ALW	Intersection	Tschirley / 4th
Agency/Co.	Sunburst Engineering	Jurisdiction	Spokane Valley, WA
Date Performed	5/25/2023	East/West Street	4th Ave
Analysis Year	2028	North/South Street	Tschirley Rd
Time Analyzed	AM Peak w/ Project	Peak Hour Factor	0.76
Intersection Orientation	North-South	Analysis Time Period (hrs)	0.25
Project Description	Tschirley Apts		

Lanes



Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority		10	11	12		7	8	9	1U	1	2	3	4U	4	5	6
Number of Lanes		0	1	0		0	1	0	0	0	1	0	0	0	1	0
Configuration			LTR				LTR				LTR				LTR	
Volume (veh/h)		5	0	4		0	0	1		12	102	0		0	51	2
Percent Heavy Vehicles (%)		3	3	3		3	3	3		3				3		
Proportion Time Blocked																
Percent Grade (%)	0				0											
Right Turn Channelized																
Median Type Storage	Undivided															

Critical and Follow-up Headways

Base Critical Headway (sec)		7.1	6.5	6.2		7.1	6.5	6.2		4.1				4.1		
Critical Headway (sec)		7.13	6.53	6.23		7.13	6.53	6.23		4.13				4.13		
Base Follow-Up Headway (sec)		3.5	4.0	3.3		3.5	4.0	3.3		2.2				2.2		
Follow-Up Headway (sec)		3.53	4.03	3.33		3.53	4.03	3.33		2.23				2.23		

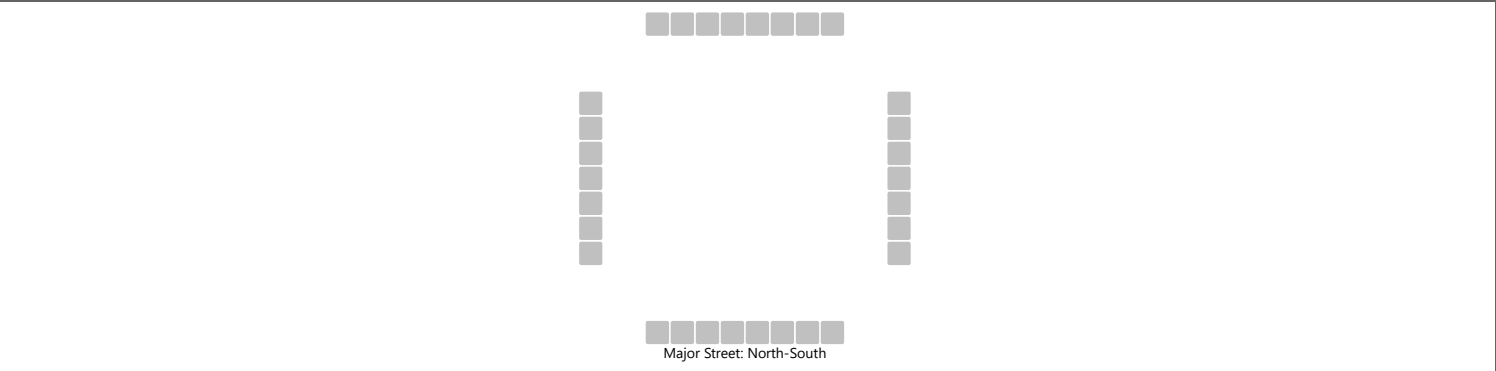
Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)			12				1			16				0		
Capacity, c (veh/h)			812				912			1525				1444		
v/c Ratio			0.01				0.00			0.01				0.00		
95% Queue Length, Q ₉₅ (veh)			0.0				0.0			0.0				0.0		
Control Delay (s/veh)			9.5				9.0			7.4	0.1	0.1		7.5	0.0	0.0
Level of Service (LOS)			A				A			A	A	A		A	A	A
Approach Delay (s/veh)	9.5				9.0				0.9				0.0			
Approach LOS	A				A				A				A			

HCS Two-Way Stop-Control Report

General Information		Site Information	
Analyst	ALW	Intersection	Tschirley / 6th
Agency/Co.	Sunburst Engineering	Jurisdiction	Spokane Valley, WA
Date Performed	5/25/2023	East/West Street	6th Ave
Analysis Year	2028	North/South Street	Tschirley Rd
Time Analyzed	AM Peak w/ Project	Peak Hour Factor	0.72
Intersection Orientation	North-South	Analysis Time Period (hrs)	0.25
Project Description	Tschirley Apts		

Lanes



Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority		10	11	12		7	8	9	1U	1	2	3	4U	4	5	6
Number of Lanes		0	1	0		0	1	0	0	0	1	0	0	0	1	0
Configuration			LTR				LTR				LTR				LTR	
Volume (veh/h)		1	1	1		0	0	14		0	107	2		9	47	2
Percent Heavy Vehicles (%)		3	3	3		3	3	3		3				3		
Proportion Time Blocked																
Percent Grade (%)	0				0											
Right Turn Channelized																
Median Type Storage	Undivided															

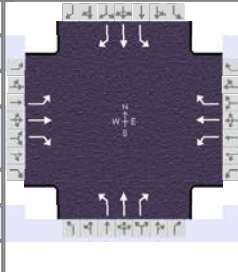
Critical and Follow-up Headways

Base Critical Headway (sec)		7.1	6.5	6.2		7.1	6.5	6.2		4.1				4.1		
Critical Headway (sec)		7.13	6.53	6.23		7.13	6.53	6.23		4.13				4.13		
Base Follow-Up Headway (sec)		3.5	4.0	3.3		3.5	4.0	3.3		2.2				2.2		
Follow-Up Headway (sec)		3.53	4.03	3.33		3.53	4.03	3.33		2.23				2.23		

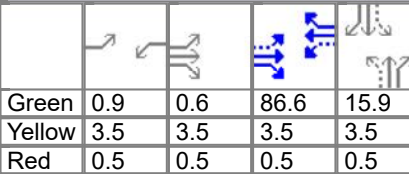
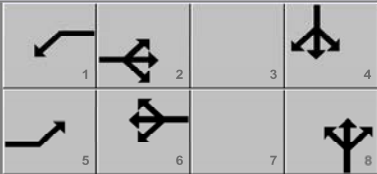
Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)			4			19				0				13		
Capacity, c (veh/h)			747			894				1527				1423		
v/c Ratio			0.01			0.02				0.00				0.01		
95% Queue Length, Q ₉₅ (veh)			0.0			0.1				0.0				0.0		
Control Delay (s/veh)			9.8			9.1				7.4	0.0	0.0		7.6	0.1	0.1
Level of Service (LOS)			A			A				A	A	A		A	A	A
Approach Delay (s/veh)	9.8				9.1				0.0				1.2			
Approach LOS	A				A				A				A			

HCS Signalized Intersection Results Summary

General Information				Intersection Information		
Agency	Sunburst Engineering			Duration, h	0.250	
Analyst	ALW	Analysis Date	5/24/2023	Area Type	Other	
Jurisdiction	Spokane Valley, WA	Time Period	AM Peak w/ Project	PHF	0.84	
Urban Street	Sprague Ave	Analysis Year	2028	Analysis Period	1 > 7:00	
Intersection	Sprague / Flora	File Name	FW AM Flora.xus			
Project Description	Tschirley Apts					

Demand Information	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Demand (v), veh/h	61	523	12	4	731	128	43	49	6	99	11	101

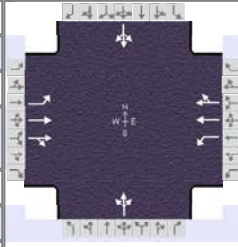
Signal Information												
Cycle, s	120.0	Reference Phase	2									
Offset, s	0	Reference Point	End									
Uncoordinated	No	Simult. Gap E/W	On									
Force Mode	Fixed	Simult. Gap N/S	On									
				Green	0.9	0.6	86.6	15.9	0.0	0.0		
				Yellow	3.5	3.5	3.5	3.5	0.0	0.0		
				Red	0.5	0.5	0.5	0.5	0.0	0.0		

Timer Results	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Assigned Phase	5	2	1	6		8		4
Case Number	1.1	3.0	1.1	3.0		5.0		5.0
Phase Duration, s	9.5	95.2	4.9	90.6		19.9		19.9
Change Period, ($Y+R_c$), s	4.0	4.0	4.0	4.0		4.0		4.0
Max Allow Headway (MAH), s	3.1	0.0	3.1	0.0		3.3		3.3
Queue Clearance Time (g_s), s	3.1		2.1			6.6		15.3
Green Extension Time (g_e), s	0.1	0.0	0.0	0.0		0.7		0.6
Phase Call Probability	0.91		0.15			1.00		1.00
Max Out Probability	0.00		0.00			0.00		0.01

Movement Group Results	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Assigned Movement	5	2	12	1	6	16	3	8	18	7	4	14
Adjusted Flow Rate (v), veh/h	73	623	14	5	870	152	51	58	7	118	13	120
Adjusted Saturation Flow Rate (s), veh/h/ln	1810	1950	1597	1810	1950	1597	1508	1950	1610	1448	1950	1610
Queue Service Time (g_s), s	1.1	13.5	0.3	0.1	26.9	3.5	3.9	3.2	0.5	10.1	0.7	8.4
Cycle Queue Clearance Time (g_c), s	1.1	13.5	0.3	0.1	26.9	3.5	4.6	3.2	0.5	13.3	0.7	8.4
Green Ratio (g/C)	0.78	0.76	0.76	0.73	0.72	0.72	0.13	0.13	0.13	0.13	0.13	0.13
Capacity (c), veh/h	463	1481	1213	586	1407	1152	252	259	214	214	259	214
Volume-to-Capacity Ratio (X)	0.157	0.420	0.012	0.008	0.619	0.132	0.203	0.225	0.033	0.550	0.051	0.562
Back of Queue (Q), ft/ln (95 th percentile)	18.6	211.8	3.4	1.3	395.9	50.3	63.6	71.5	8.5	159.5	15.7	155.7
Back of Queue (Q), veh/ln (95 th percentile)	0.7	8.5	0.1	0.1	15.8	2.0	2.5	2.9	0.3	6.4	0.6	6.2
Queue Storage Ratio (RQ) (95 th percentile)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Uniform Delay (d_1), s/veh	6.9	5.1	3.5	4.9	8.4	5.1	47.4	46.5	45.3	52.4	45.4	48.7
Incremental Delay (d_2), s/veh	0.1	0.9	0.0	0.0	2.1	0.2	0.1	0.2	0.0	0.8	0.0	0.9
Initial Queue Delay (d_3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Control Delay (d), s/veh	7.0	6.0	3.5	4.9	10.5	5.4	47.5	46.7	45.3	53.2	45.4	49.6
Level of Service (LOS)	A	A	A	A	B	A	D	D	D	D	D	D
Approach Delay, s/veh / LOS	6.0	A		9.7	A		47.0	D		51.1	D	
Intersection Delay, s/veh / LOS	15.5						B					
















Multimodal Results	EB		WB		NB		SB	
Pedestrian LOS Score / LOS	2.04	B	2.05	B	2.14	B	2.14	B
Bicycle LOS Score / LOS	1.66	B	2.18	B	0.68	A	0.90	A

HCS Signalized Intersection Results Summary

General Information				Intersection Information		
Agency	Sunburst Engineering			Duration, h	0.250	
Analyst	ALW	Analysis Date	5/24/2023	Area Type	Other	
Jurisdiction	Spokane Valley, WA	Time Period	PM Peak w/ Project	PHF	0.94	
Urban Street	Appleway	Analysis Year	2028	Analysis Period	1 > 7:00	
Intersection	Appleway / Corbin	File Name	FW PM Appleway.xus			
Project Description	Tschirley Apts					

Demand Information	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Demand (v), veh/h	13	650	389	6	691	14	218	7	5	8	8	11

Signal Information												
Cycle, s	120.0	Reference Phase	2									
Offset, s	0	Reference Point	End									
Uncoordinated	No	Simult. Gap E/W	On	Green	1.2	1.1	82.0	22.3	0.0	0.0		
				Yellow	3.5	0.0	3.5	3.5	0.0	0.0		
Force Mode	Fixed	Simult. Gap N/S	On	Red	1.0	0.0	1.0	1.0	0.0	0.0		

														
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15

Timer Results	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Assigned Phase	5	2	1	6		8		4
Case Number	2.0	4.0	2.0	4.0		8.0		8.0
Phase Duration, s	6.7	87.5	5.7	86.5		26.8		26.8
Change Period, ($Y+R_c$), s	4.5	4.5	4.5	4.5		4.5		4.5
Max Allow Headway (MAH), s	3.1	0.0	3.1	0.0		3.1		3.1
Queue Clearance Time (g_s), s	2.9		2.4			22.2		3.6
Green Extension Time (g_e), s	0.0	0.0	0.0	0.0		0.2		0.5
Phase Call Probability	0.37		0.19			1.00		1.00
Max Out Probability	0.00		0.00			0.80		0.00

Movement Group Results	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Assigned Movement	5	2	12	1	6	16	3	8	18	7	4	14
Adjusted Flow Rate (v), veh/h	14	592	514	6	378	372		245			29	
Adjusted Saturation Flow Rate (s), veh/h/ln	1810	1950	1689	1810	1950	1921		1517			1865	
Queue Service Time (g_s), s	0.9	16.1	16.2	0.4	9.1	9.1		18.6			0.0	
Cycle Queue Clearance Time (g_c), s	0.9	16.1	16.2	0.4	9.1	9.1		20.2			1.6	
Green Ratio (g/C)	0.02	0.69	0.69	0.01	0.68	0.68		0.19			0.19	
Capacity (c), veh/h	33	1349	1169	17	1332	1312		341			386	
Volume-to-Capacity Ratio (X)	0.414	0.438	0.440	0.368	0.284	0.284		0.718			0.074	
Back of Queue (Q), ft/ln (95 th percentile)	19.8	266	239.4	9.7	166.1	163.8		300.4			31.7	
Back of Queue (Q), veh/ln (95 th percentile)	0.8	10.6	9.6	0.4	6.6	6.6		12.0			1.3	
Queue Storage Ratio (RQ) (95 th percentile)	0.00	0.00	0.00	0.00	0.00	0.00		0.00			0.00	
Uniform Delay (d_1), s/veh	58.2	8.2	8.2	59.1	7.5	7.5		48.0			40.4	
Incremental Delay (d_2), s/veh	3.0	1.0	1.2	4.8	0.5	0.5		4.6			0.0	
Initial Queue Delay (d_3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0		0.0			0.0	
Control Delay (d), s/veh	61.3	9.2	9.4	63.8	8.0	8.0		52.5			40.4	
Level of Service (LOS)	E	A	A	E	A	A		D			D	
Approach Delay, s/veh / LOS	9.9	A		8.5	A		52.5	D		40.4	D	
Intersection Delay, s/veh / LOS	14.7						B					

Multimodal Results	EB		WB		NB		SB	
Pedestrian LOS Score / LOS	1.64	B	1.64	B	2.30	B	2.30	B
Bicycle LOS Score / LOS	1.41	A	1.11	A	0.89	A	0.53	A

HCS Two-Way Stop-Control Report

General Information

Analyst

ALW

Agency/Co.

Sunburst Engineering

Date Performed

5/24/2023

Analysis Year

2028

Time Analyzed

PM Peak w/ Project

Intersection Orientation

North-South

Project Description

Tschirley Apts

Site Information

Intersection

Sprague / Tschirley Wye

Jurisdiction

Spokane Valley, WA

East/West Street

Tschirley Wye

North/South Street

Sprague Ave

Peak Hour Factor

0.93

Analysis Time Period (hrs)

0.25

Lanes

Major Street: North-South

Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority		10	11	12		7	8	9	1U	1	2	3	4U	4	5	6
Number of Lanes		0	1	0		0	0	0	0	0	1	0	0	0	1	0
Configuration			LR							LT						TR
Volume (veh/h)		4		5						2	230				370	2
Percent Heavy Vehicles (%)		0		0						0						
Proportion Time Blocked																
Percent Grade (%)	0															
Right Turn Channelized																
Median Type Storage	Undivided															


Critical and Follow-up Headways

Base Critical Headway (sec)		7.1		6.2						4.1						
Critical Headway (sec)		6.40		6.20						4.10						
Base Follow-Up Headway (sec)		3.5		3.3						2.2						
Follow-Up Headway (sec)		3.50		3.30						2.20						

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)			10							2						
Capacity, c (veh/h)			535							1170						
v/c Ratio			0.02							0.00						
95% Queue Length, Q ₉₅ (veh)			0.1							0.0						
Control Delay (s/veh)			11.8							8.1	0.0					
Level of Service (LOS)			B							A	A					
Approach Delay (s/veh)	11.8								0.1							
Approach LOS	B								A							

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HCS Two-Way Stop-Control Report

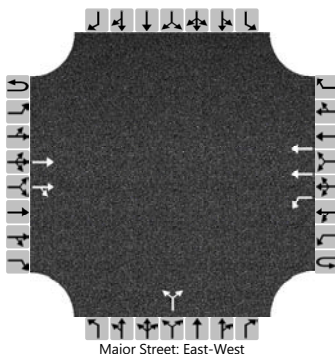
General Information

Analyst	ALW
Agency/Co.	Sunburst Engineering
Date Performed	5/24/2023
Analysis Year	2028
Time Analyzed	PM Peak w/ Project
Intersection Orientation	East-West
Project Description	Tschirley Apts

Site Information

Intersection	Sprague / Tschirley
Jurisdiction	Spokane Valley, WA
East/West Street	Sprague Ave
North/South Street	Tschirley Rd
Peak Hour Factor	0.93
Analysis Time Period (hrs)	0.25

Lanes



Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority	1U	1	2	3	4U	4	5	6		7	8	9		10	11	12
Number of Lanes	0	0	2	0	0	1	2	0		0	1	0		0	0	0
Configuration			T	TR		L	T				LR					
Volume (veh/h)			963	87	0	38	877			50		29				
Percent Heavy Vehicles (%)					0	0				0		0				
Proportion Time Blocked																
Percent Grade (%)									0							
Right Turn Channelized																
Median Type Storage	Left Only								1							

Critical and Follow-up Headways

Base Critical Headway (sec)						4.1				7.5		6.9				
Critical Headway (sec)						4.10				6.80		6.90				
Base Follow-Up Headway (sec)						2.2				3.5		3.3				
Follow-Up Headway (sec)						2.20				3.50		3.30				

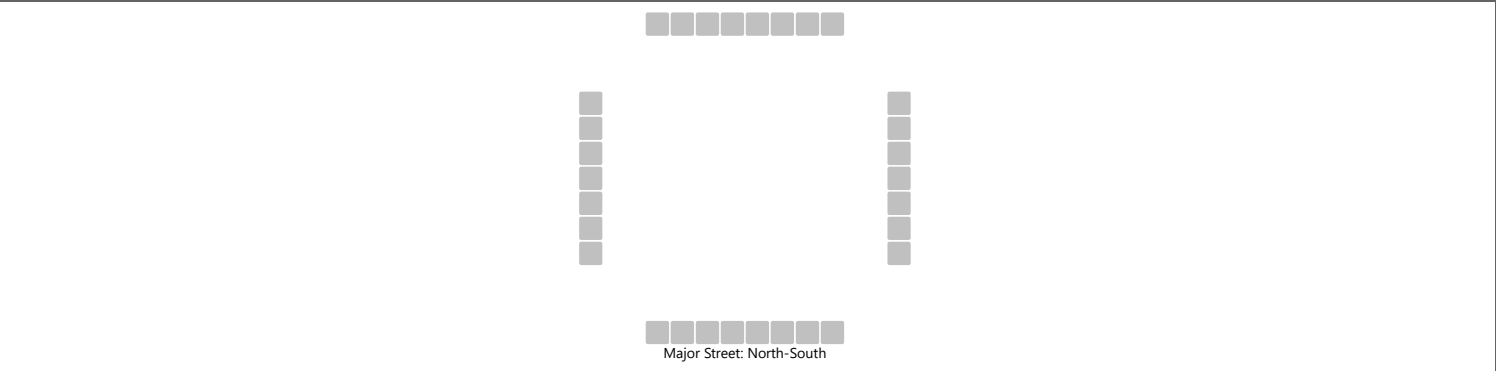
Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)						41					85					
Capacity, c (veh/h)						626					259					
v/c Ratio						0.07					0.33					
95% Queue Length, Q ₉₅ (veh)						0.2					1.4					
Control Delay (s/veh)						11.2					25.5					
Level of Service (LOS)						B					D					
Approach Delay (s/veh)					0.5				25.5							
Approach LOS					A				D							

HCS Two-Way Stop-Control Report

General Information		Site Information	
Analyst	ALW	Intersection	Tschirley / Tschirley Wye
Agency/Co.	Sunburst Engineering	Jurisdiction	Spokane Valley, WA
Date Performed	5/24/2023	East/West Street	Tschirley Wye
Analysis Year	2028	North/South Street	Tschirley Rd
Time Analyzed	PM Peak w/ Project	Peak Hour Factor	0.78
Intersection Orientation	North-South	Analysis Time Period (hrs)	0.25
Project Description	Tschirley Apts		

Lanes



Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority		10	11	12		7	8	9	1U	1	2	3	4U	4	5	6
Number of Lanes		0	1	0		0	1	0	0	0	1	0	0	0	1	0
Configuration			LTR				LTR				LTR				LTR	
Volume (veh/h)		0	0	0		4	0	4		0	68	9		6	106	0
Percent Heavy Vehicles (%)		0	0	0		0	0	0		0				0		
Proportion Time Blocked																
Percent Grade (%)	0				0											
Right Turn Channelized																
Median Type Storage	Undivided															

Critical and Follow-up Headways

Base Critical Headway (sec)		7.1	6.5	6.2		7.1	6.5	6.2		4.1				4.1		
Critical Headway (sec)		7.10	6.50	6.20		7.10	6.50	6.20		4.10				4.10		
Base Follow-Up Headway (sec)		3.5	4.0	3.3		3.5	4.0	3.3		2.2				2.2		
Follow-Up Headway (sec)		3.50	4.00	3.30		3.50	4.00	3.30		2.20				2.20		

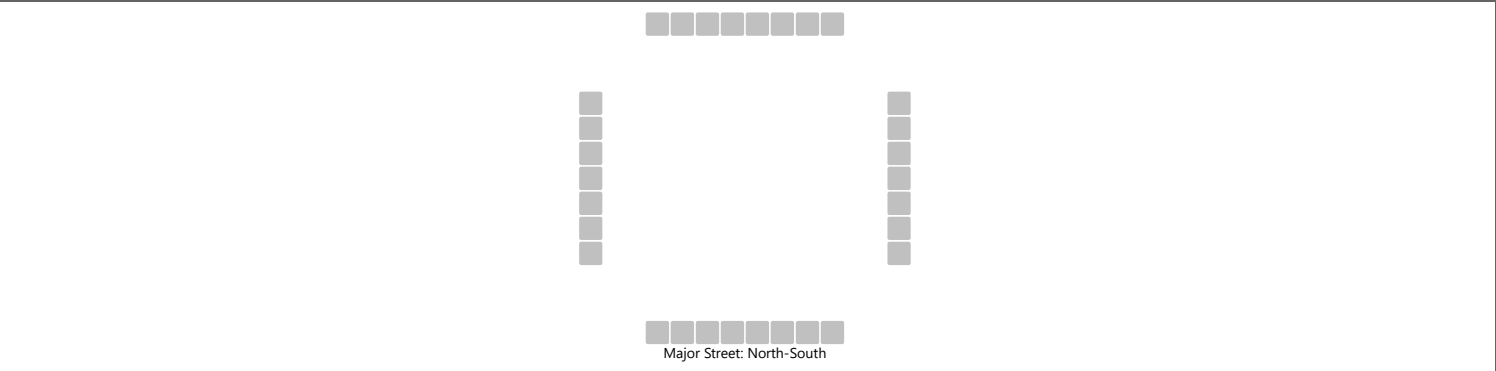
Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)			0			10				0				8		
Capacity, c (veh/h)			0			820				1461				1507		
v/c Ratio						0.01				0.00				0.01		
95% Queue Length, Q ₉₅ (veh)						0.0				0.0				0.0		
Control Delay (s/veh)						9.4				7.5	0.0	0.0		7.4	0.0	0.0
Level of Service (LOS)						A				A	A	A		A	A	A
Approach Delay (s/veh)					9.4				0.0				0.4			
Approach LOS					A				A				A			

HCS Two-Way Stop-Control Report

General Information		Site Information	
Analyst	ALW	Intersection	Tschirley / 3rd
Agency/Co.	Sunburst Engineering	Jurisdiction	Spokane Valley, WA
Date Performed	5/25/2023	East/West Street	3rd Ave
Analysis Year	2028	North/South Street	Tschirley Rd
Time Analyzed	PM Peak w/ Project	Peak Hour Factor	0.89
Intersection Orientation	North-South	Analysis Time Period (hrs)	0.25
Project Description	Tschirley Apts		

Lanes



Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority		10	11	12		7	8	9	1U	1	2	3	4U	4	5	6
Number of Lanes		0	1	0		0	1	0	0	0	1	0	0	0	1	0
Configuration			LTR				LTR				LTR				LTR	
Volume (veh/h)		7	6	19		0	4	18		21	49	0		24	73	7
Percent Heavy Vehicles (%)		3	3	3		3	3	3		3				3		
Proportion Time Blocked																
Percent Grade (%)	0				0											
Right Turn Channelized																
Median Type Storage	Undivided															

Critical and Follow-up Headways

Base Critical Headway (sec)		7.1	6.5	6.2		7.1	6.5	6.2		4.1				4.1		
Critical Headway (sec)		7.13	6.53	6.23		7.13	6.53	6.23		4.13				4.13		
Base Follow-Up Headway (sec)		3.5	4.0	3.3		3.5	4.0	3.3		2.2				2.2		
Follow-Up Headway (sec)		3.53	4.03	3.33		3.53	4.03	3.33		2.23				2.23		

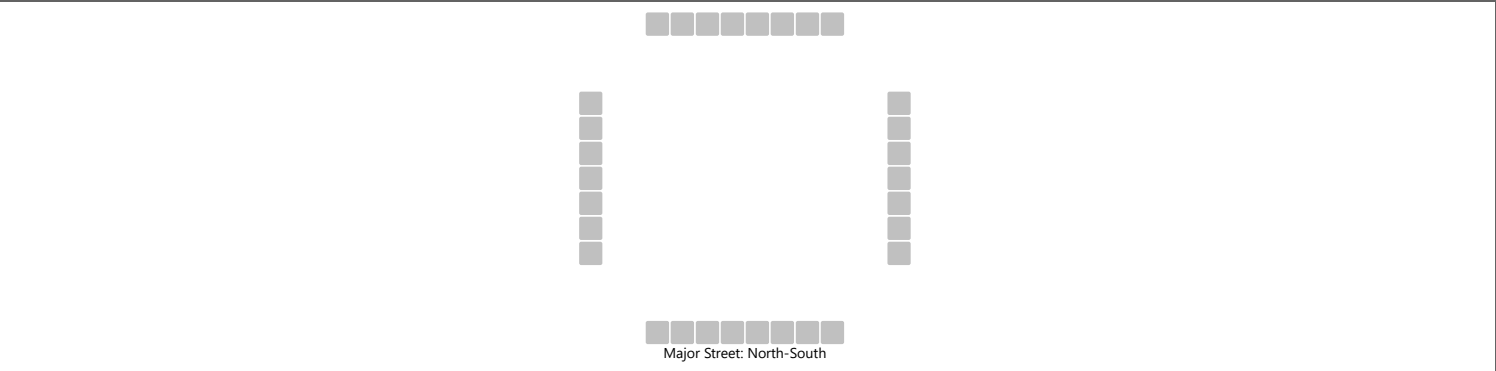
Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)			36			25				24				27		
Capacity, c (veh/h)			806			910				1499				1544		
v/c Ratio			0.04			0.03				0.02				0.02		
95% Queue Length, Q ₉₅ (veh)			0.1			0.1				0.0				0.1		
Control Delay (s/veh)			9.7			9.1				7.4	0.1	0.1		7.4	0.1	0.1
Level of Service (LOS)			A			A				A	A	A		A	A	A
Approach Delay (s/veh)	9.7				9.1				2.3				1.8			
Approach LOS	A				A				A				A			

HCS Two-Way Stop-Control Report

General Information		Site Information	
Analyst	ALW	Intersection	Tschirley / 4th
Agency/Co.	Sunburst Engineering	Jurisdiction	Spokane Valley, WA
Date Performed	5/25/2023	East/West Street	4th Ave
Analysis Year	2028	North/South Street	Tschirley Rd
Time Analyzed	PM Peak w/ Project	Peak Hour Factor	0.86
Intersection Orientation	North-South	Analysis Time Period (hrs)	0.25
Project Description	Tschirley Apts		

Lanes



Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority		10	11	12		7	8	9	1U	1	2	3	4U	4	5	6
Number of Lanes		0	1	0		0	1	0	0	0	1	0	0	0	1	0
Configuration			LTR				LTR				LTR				LTR	
Volume (veh/h)		4	1	14		1	0	2		9	70	0		0	91	2
Percent Heavy Vehicles (%)		3	3	3		3	3	3		3				3		
Proportion Time Blocked																
Percent Grade (%)	0				0											
Right Turn Channelized																
Median Type Storage	Undivided															

Critical and Follow-up Headways

Base Critical Headway (sec)		7.1	6.5	6.2		7.1	6.5	6.2		4.1				4.1		
Critical Headway (sec)		7.13	6.53	6.23		7.13	6.53	6.23		4.13				4.13		
Base Follow-Up Headway (sec)		3.5	4.0	3.3		3.5	4.0	3.3		2.2				2.2		
Follow-Up Headway (sec)		3.53	4.03	3.33		3.53	4.03	3.33		2.23				2.23		

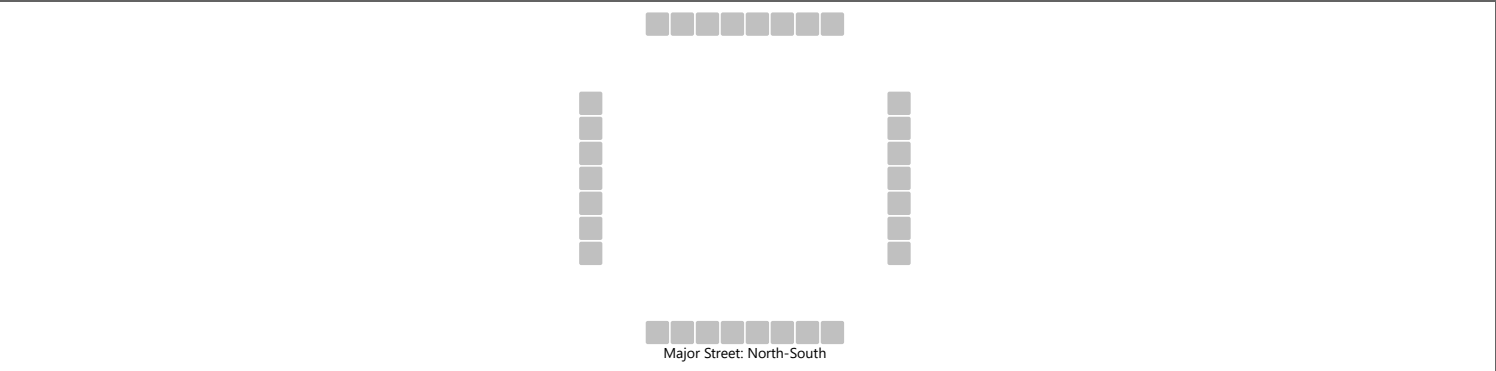
Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)			22			3				10				0		
Capacity, c (veh/h)			875			871				1476				1510		
v/c Ratio			0.03			0.00				0.01				0.00		
95% Queue Length, Q ₉₅ (veh)			0.1			0.0				0.0				0.0		
Control Delay (s/veh)			9.2			9.2				7.5	0.1	0.1		7.4	0.0	0.0
Level of Service (LOS)			A			A				A	A	A		A	A	A
Approach Delay (s/veh)	9.2				9.2				0.9				0.0			
Approach LOS	A				A				A				A			

HCS Two-Way Stop-Control Report

General Information		Site Information	
Analyst	ALW	Intersection	Tschirley / 6th
Agency/Co.	Sunburst Engineering	Jurisdiction	Spokane Valley, WA
Date Performed	5/25/2023	East/West Street	6th Ave
Analysis Year	2028	North/South Street	Tschirley Rd
Time Analyzed	PM Peak w/ Project	Peak Hour Factor	0.89
Intersection Orientation	North-South	Analysis Time Period (hrs)	0.25
Project Description	Tschirley Apts		

Lanes



Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority		10	11	12		7	8	9	1U	1	2	3	4U	4	5	6
Number of Lanes		0	1	0		0	1	0	0	0	1	0	0	0	1	0
Configuration			LTR				LTR				LTR				LTR	
Volume (veh/h)		0	2	0		1	0	8		0	68	0		13	90	1
Percent Heavy Vehicles (%)		3	3	3		3	3	3		3				3		
Proportion Time Blocked																
Percent Grade (%)	0				0											
Right Turn Channelized																
Median Type Storage	Undivided															

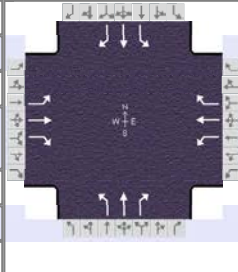
Critical and Follow-up Headways

Base Critical Headway (sec)		7.1	6.5	6.2		7.1	6.5	6.2		4.1				4.1		
Critical Headway (sec)		7.13	6.53	6.23		7.13	6.53	6.23		4.13				4.13		
Base Follow-Up Headway (sec)		3.5	4.0	3.3		3.5	4.0	3.3		2.2				2.2		
Follow-Up Headway (sec)		3.53	4.03	3.33		3.53	4.03	3.33		2.23				2.23		

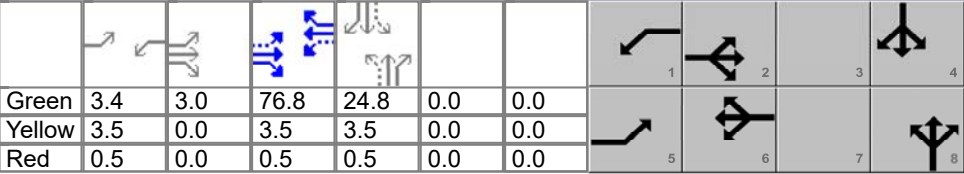
Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)			2				10			0				15		
Capacity, c (veh/h)			681				947			1484				1516		
v/c Ratio			0.00				0.01			0.00				0.01		
95% Queue Length, Q ₉₅ (veh)			0.0				0.0			0.0				0.0		
Control Delay (s/veh)			10.3				8.8			7.4	0.0	0.0		7.4	0.1	0.1
Level of Service (LOS)			B				A			A	A	A		A	A	A
Approach Delay (s/veh)	10.3				8.8				0.0				1.0			
Approach LOS	B				A				A				A			

HCS Signalized Intersection Results Summary

General Information				Intersection Information		
Agency	Sunburst Engineering			Duration, h	0.250	
Analyst	ALW	Analysis Date	5/24/2023	Area Type	Other	
Jurisdiction	Spokane Valley, WA	Time Period	PM Peak w/ Project	PHF	0.94	
Urban Street	Sprague Ave	Analysis Year	2028	Analysis Period	1 > 7:00	
Intersection	Sprague / Flora	File Name	FW PM Flora.xus			
Project Description	Tschirley Apts					

Demand Information	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Demand (v), veh/h	178	956	33	24	926	112	35	23	11	240	37	143

Signal Information											
Cycle, s	120.0	Reference Phase	2								
Offset, s	0	Reference Point	End								
Uncoordinated	No	Simult. Gap E/W	On								
Force Mode	Fixed	Simult. Gap N/S	On	Green	3.4	3.0	76.8	24.8	0.0	0.0	
				Yellow	3.5	0.0	3.5	3.5	0.0	0.0	
				Red	0.5	0.0	0.5	0.5	0.0	0.0	

Timer Results	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Assigned Phase	5	2	1	6		8		4
Case Number	1.1	3.0	1.1	3.0		5.0		5.0
Phase Duration, s	10.4	83.8	7.4	80.8		28.8		28.8
Change Period, ($Y+R_c$), s	4.0	4.0	4.0	4.0		4.0		4.0
Max Allow Headway (MAH), s	3.1	0.0	3.1	0.0		3.3		3.3
Queue Clearance Time (g_s), s	6.2		2.6			6.6		24.6
Green Extension Time (g_e), s	0.2	0.0	0.0	0.0		1.1		0.2
Phase Call Probability	1.00		0.57			1.00		1.00
Max Out Probability	0.00		0.00			0.00		1.00

Movement Group Results	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Assigned Movement	5	2	12	1	6	16	3	8	18	7	4	14
Adjusted Flow Rate (v), veh/h	189	1017	35	26	985	119	37	24	12	255	39	152
Adjusted Saturation Flow Rate (s), veh/h/ln	1810	1950	1597	1810	1950	1597	1473	1950	1610	1493	1950	1610
Queue Service Time (g_s), s	4.2	43.9	0.9	0.6	44.1	3.5	2.7	1.2	0.7	21.3	2.0	9.9
Cycle Queue Clearance Time (g_c), s	4.2	43.9	0.9	0.6	44.1	3.5	4.6	1.2	0.7	22.6	2.0	9.9
Green Ratio (g/C)	0.70	0.66	0.66	0.67	0.64	0.64	0.21	0.21	0.21	0.21	0.21	0.21
Capacity (c), veh/h	315	1296	1062	271	1248	1022	340	403	333	353	403	333
Volume-to-Capacity Ratio (X)	0.602	0.785	0.033	0.094	0.789	0.117	0.109	0.061	0.035	0.722	0.098	0.457
Back of Queue (Q), ft/ln (95 th percentile)	122	651.1	13.8	10.8	668.9	54.5	42.1	26.6	12.7	318.2	43.2	181.2
Back of Queue (Q), veh/ln (95 th percentile)	4.9	26.0	0.6	0.4	26.8	2.2	1.7	1.1	0.5	12.7	1.7	7.2
Queue Storage Ratio (RQ) (95 th percentile)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Uniform Delay (d_1), s/veh	18.6	14.1	6.9	14.7	15.7	8.4	40.4	38.2	38.0	47.3	38.5	41.7
Incremental Delay (d_2), s/veh	0.7	4.8	0.1	0.1	5.1	0.2	0.1	0.0	0.0	5.6	0.0	0.4
Initial Queue Delay (d_3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Control Delay (d), s/veh	19.2	18.9	7.0	14.8	20.9	8.6	40.5	38.3	38.1	52.9	38.6	42.1
Level of Service (LOS)	B	B	A	B	C	A	D	D	D	D	D	D
Approach Delay, s/veh / LOS	18.6	B		19.4	B		39.4	D		47.9	D	
Intersection Delay, s/veh / LOS	24.0						C					

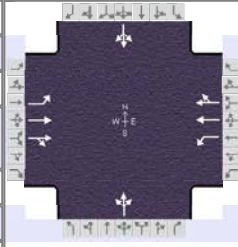
Multimodal Results	EB		WB		NB		SB	
Pedestrian LOS Score / LOS	2.06	B	2.07	B	2.13	B	2.13	B
Bicycle LOS Score / LOS	2.54	C	2.35	B	0.61	A	1.22	A

TECHNICAL APPENDIX

SCHOOL DISMISSAL HOUR LEVEL OF SERVICE CALCULATIONS

**(EXISTING, FUTURE AND
FUTURE WITH PROJECT SCENARIOS)**

HCS Signalized Intersection Results Summary

General Information				Intersection Information		
Agency	Sunburst Engineering			Duration, h	0.250	
Analyst	ALW	Analysis Date	5/24/2023	Area Type	Other	
Jurisdiction	Spokane Valley, WA	Time Period	School Dismissal Peak	PHF	0.94	
Urban Street	Appleway	Analysis Year	2023	Analysis Period	1 > 7:00	
Intersection	Appleway / Corbin	File Name	EX SD Appleway.xus			
Project Description	Tschirley Apts					

Demand Information	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Demand (v), veh/h	8	633	327	11	737	15	202	4	9	13	13	11

Signal Information														
Cycle, s	120.0	Reference Phase	2											
Offset, s	0	Reference Point	End											
Uncoordinated	No	Simult. Gap E/W	On	Green	1.5	0.5	83.4	21.1	0.0	0.0				
				Yellow	3.5	0.0	3.5	3.5	0.0	0.0				
Force Mode	Fixed	Simult. Gap N/S	On	Red	1.0	0.0	1.0	1.0	0.0	0.0				

Timer Results	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Assigned Phase	5	2	1	6		8		4
Case Number	2.0	4.0	2.0	4.0		8.0		8.0
Phase Duration, s	6.0	87.9	6.4	88.4		25.6		25.6
Change Period, ($Y+R_c$), s	4.5	4.5	4.5	4.5		4.5		4.5
Max Allow Headway (MAH), s	3.1	0.0	3.1	0.0		3.1		3.1
Queue Clearance Time (g_s), s	2.6		2.8			20.9		4.1
Green Extension Time (g_e), s	0.0	0.0	0.0	0.0		0.2		0.5
Phase Call Probability	0.25		0.32			1.00		1.00
Max Out Probability	0.00		0.00			0.27		0.00

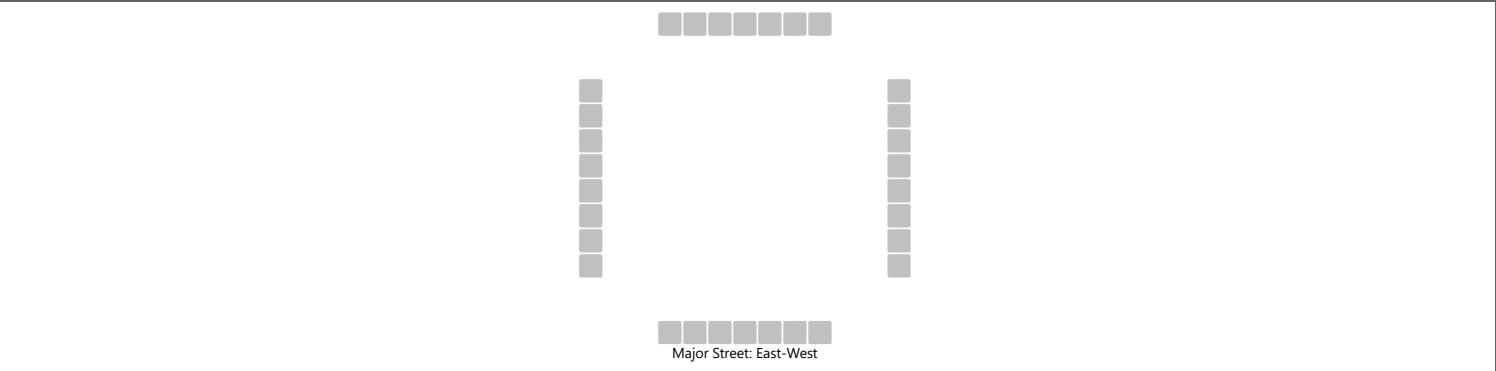
Movement Group Results	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Assigned Movement	5	2	12	1	6	16	3	8	18	7	4	14
Adjusted Flow Rate (v), veh/h	9	544	477	12	403	397		229			39	
Adjusted Saturation Flow Rate (s), veh/h/ln	1810	1950	1710	1810	1950	1921		1510			1843	
Queue Service Time (g_s), s	0.6	14.2	14.2	0.8	9.4	9.4		16.8			0.0	
Cycle Queue Clearance Time (g_c), s	0.6	14.2	14.2	0.8	9.4	9.4		18.9			2.1	
Green Ratio (g/C)	0.01	0.70	0.70	0.02	0.70	0.70		0.18			0.18	
Capacity (c), veh/h	22	1356	1189	29	1363	1343		324			365	
Volume-to-Capacity Ratio (X)	0.381	0.401	0.401	0.400	0.296	0.296		0.706			0.108	
Back of Queue (Q), ft/ln (95 th percentile)	12.6	238.8	216.7	16.9	168.1	165.7		282.2			44.3	
Back of Queue (Q), veh/ln (95 th percentile)	0.5	9.6	8.7	0.7	6.7	6.6		11.3			1.8	
Queue Storage Ratio (RQ) (95 th percentile)	0.00	0.00	0.00	0.00	0.00	0.00		0.00			0.00	
Uniform Delay (d_1), s/veh	58.8	7.7	7.7	58.5	6.9	6.9		48.5			41.6	
Incremental Delay (d_2), s/veh	3.9	0.9	1.0	3.3	0.6	0.6		3.6			0.0	
Initial Queue Delay (d_3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0		0.0			0.0	
Control Delay (d), s/veh	62.7	8.6	8.7	61.7	7.4	7.4		52.1			41.7	
Level of Service (LOS)	E	A	A	E	A	A		D			D	
Approach Delay, s/veh / LOS	9.1	A		8.2	A		52.1	D		41.7	D	
Intersection Delay, s/veh / LOS	14.0						B					

Multimodal Results	EB		WB		NB		SB	
Pedestrian LOS Score / LOS	1.64	B	1.64	B	2.31	B	2.31	B
Bicycle LOS Score / LOS	1.34	A	1.16	A	0.86	A	0.55	A

HCS Two-Way Stop-Control Report

General Information		Site Information	
Analyst	ALW	Intersection	Sprague / Flora
Agency/Co.	Sunburst Engineering	Jurisdiction	Spokane Valley, WA
Date Performed	6/7/2023	East/West Street	Sprague Ave
Analysis Year	2023	North/South Street	Flora Rd
Time Analyzed	School Dismissal	Peak Hour Factor	0.92
Intersection Orientation	East-West	Analysis Time Period (hrs)	0.25
Project Description	Tschirley Apts		

Lanes



Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority	1U	1	2	3	4U	4	5	6		7	8	9		10	11	12
Number of Lanes	0	0	2	0	0	1	2	0		0	1	0		0	0	0
Configuration			T	TR		L	T				LR					
Volume (veh/h)			996	58	0	55	950			30		22				
Percent Heavy Vehicles (%)					0	0				0		0				
Proportion Time Blocked																
Percent Grade (%)									0							
Right Turn Channelized																
Median Type Storage	Left Only								1							

Critical and Follow-up Headways

Base Critical Headway (sec)						4.1					7.5		6.9			
Critical Headway (sec)						4.10					6.80		6.90			
Base Follow-Up Headway (sec)						2.2					3.5		3.3			
Follow-Up Headway (sec)						2.20					3.50		3.30			

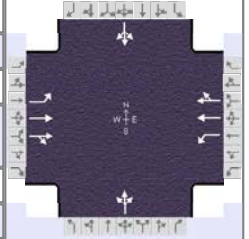
Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)						60						57				
Capacity, c (veh/h)						617						251				
v/c Ratio						0.10						0.23				
95% Queue Length, Q ₉₅ (veh)						0.3						0.8				
Control Delay (s/veh)						11.5						23.5				
Level of Service (LOS)						B						C				
Approach Delay (s/veh)					0.6				23.5							
Approach LOS					A				C							

HCS Signalized Intersection Results Summary

General Information

Agency	Sunburst Engineering		
Analyst	ALW	Analysis Date	5/24/2023
Jurisdiction	Spokane Valley, WA	Time Period	School Dismissal Peak
Urban Street	Appleway	Analysis Year	2028
Intersection	Appleway / Corbin	File Name	FO SD Appleway.x
Project Description	Tschirley Apts		



Demand Information

	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Demand (v), veh/h	8	665	344	12	775	16	212	4	9	14	14	12

Signal Information

Cycle, s	120.0	Reference Phase	2									
Offset, s	0	Reference Point	End									
Uncoordinated	No	Simult. Gap E/W	On	Green	1.5	0.6	82.4	22.0	0.0	0.0		
Force Mode	Fixed	Simult. Gap N/S	On	Yellow	3.5	0.0	3.5	3.5	0.0	0.0		
				Red	1.0	0.0	1.0	1.0	0.0	0.0		

Timer Results

	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Assigned Phase	5	2	1	6		8		4
Case Number	2.0	4.0	2.0	4.0		8.0		8.0
Phase Duration, s	6.0	86.9	6.6	87.5		26.5		26.5
Change Period, (Y+R c), s	4.5	4.5	4.5	4.5		4.5		4.5
Max Allow Headway (MAH), s	3.1	0.0	3.1	0.0		3.1		3.1
Queue Clearance Time (g s), s	2.6		2.8			21.8		4.3
Green Extension Time (g e), s	0.0	0.0	0.0	0.0		0.2		0.5
Phase Call Probability	0.25		0.35			1.00		1.00
Max Out Probability	0.00		0.00			0.62		0.00

Movement Group Results

	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Assigned Movement	5	2	12	1	6	16	3	8	18	7	4	14
Adjusted Flow Rate (v), veh/h	9	572	502	13	424	418		239			43	
Adjusted Saturation Flow Rate (s), veh/h/ln	1810	1950	1710	1810	1950	1920		1506			1843	
Queue Service Time (g s), s	0.6	15.6	15.6	0.8	10.3	10.3		17.5			0.0	
Cycle Queue Clearance Time (g c), s	0.6	15.6	15.6	0.8	10.3	10.3		19.8			2.3	
Green Ratio (g/C)	0.01	0.69	0.69	0.02	0.69	0.69		0.18			0.18	
Capacity (c), veh/h	22	1339	1174	31	1348	1328		335			379	
Volume-to-Capacity Ratio (X)	0.381	0.427	0.428	0.407	0.314	0.314		0.715			0.112	
Back of Queue (Q), ft/ln (95 th percentile)	12.6	260.7	237	18.4	185.2	182.5		294.5			47.5	
Back of Queue (Q), veh/ln (95 th percentile)	0.5	10.4	9.5	0.7	7.4	7.3		11.8			1.9	
Queue Storage Ratio (RQ) (95 th percentile)	0.00	0.00	0.00	0.00	0.00	0.00		0.00			0.00	
Uniform Delay (d 1), s/veh	58.8	8.3	8.3	58.3	7.3	7.3		48.1			40.9	
Incremental Delay (d 2), s/veh	3.9	1.0	1.1	3.1	0.6	0.6		4.3			0.0	
Initial Queue Delay (d 3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0		0.0			0.0	
Control Delay (d), s/veh	62.7	9.3	9.5	61.5	7.9	7.9		52.4			41.0	
Level of Service (LOS)	E	A	A	E	A	A		D			D	
Approach Delay, s/veh / LOS	9.8		A	8.7		A		52.4		D	41.0	
Intersection Delay, s/veh / LOS	14.6						B					

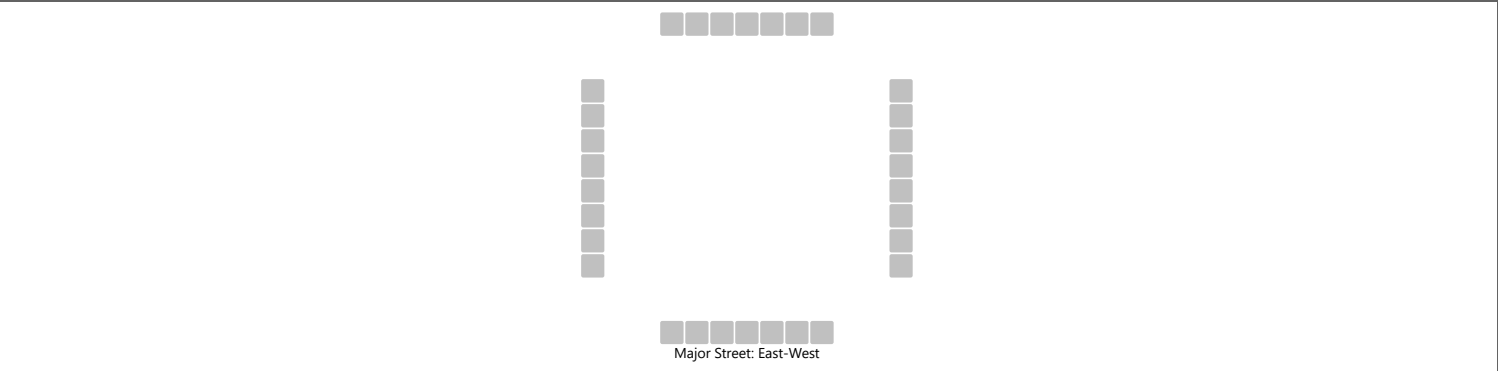
Multimodal Results

	EB		WB		NB		SB	
Pedestrian LOS Score / LOS	1.64	B	1.64	B	2.31	B	2.31	B
Bicycle LOS Score / LOS	1.38	A	1.19	A	0.88	A	0.56	A

HCS Two-Way Stop-Control Report

General Information		Site Information	
Analyst	ALW	Intersection	Sprague / Flora
Agency/Co.	Sunburst Engineering	Jurisdiction	Spokane Valley, WA
Date Performed	6/7/2023	East/West Street	Sprague Ave
Analysis Year	2028	North/South Street	Flora Rd
Time Analyzed	School Dismissal Peak	Peak Hour Factor	0.92
Intersection Orientation	East-West	Analysis Time Period (hrs)	0.25
Project Description	Tschirley Apts		

Lanes



Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority	1U	1	2	3	4U	4	5	6		7	8	9		10	11	12
Number of Lanes	0	0	2	0	0	1	2	0		0	1	0		0	0	0
Configuration			T	TR		L	T				LR					
Volume (veh/h)			1047	61	0	68	998			32		23				
Percent Heavy Vehicles (%)					0	0				0		0				
Proportion Time Blocked																
Percent Grade (%)									0							
Right Turn Channelized																
Median Type Storage	Left Only								1							

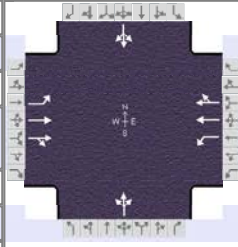
Critical and Follow-up Headways

Base Critical Headway (sec)						4.1					7.5		6.9			
Critical Headway (sec)						4.10					6.80		6.90			
Base Follow-Up Headway (sec)						2.2					3.5		3.3			
Follow-Up Headway (sec)						2.20					3.50		3.30			

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)						74					60					
Capacity, c (veh/h)						586					229					
v/c Ratio						0.13					0.26					
95% Queue Length, Q ₉₅ (veh)						0.4					1.0					
Control Delay (s/veh)						12.0					26.1					
Level of Service (LOS)						B					D					
Approach Delay (s/veh)					0.8				26.1							
Approach LOS					A				D							

HCS Signalized Intersection Results Summary

General Information				Intersection Information		
Agency	Sunburst Engineering			Duration, h	0.250	
Analyst	ALW	Analysis Date	5/24/2023	Area Type	Other	
Jurisdiction	Spokane Valley, WA	Time Period	School Dismissal Peak - w/ Project	PHF	0.94	
Urban Street	Appleway	Analysis Year	2028	Analysis Period	1 > 7:00	
Intersection	Appleway / Corbin	File Name	FW SD Appleway.xus			
Project Description	Tschirley Apts					

Demand Information	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Demand (v), veh/h	8	685	344	12	803	16	212	4	9	14	14	12

Signal Information											
Cycle, s	120.0	Reference Phase	2								
Offset, s	0	Reference Point	End								
Uncoordinated	No	Simult. Gap E/W	On	Green	1.5	0.6	82.4	22.0	0.0	0.0	
Force Mode	Fixed	Simult. Gap N/S	On	Yellow	3.5	0.0	3.5	3.5	0.0	0.0	
				Red	1.0	0.0	1.0	1.0	0.0	0.0	

Timer Results	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Assigned Phase	5	2	1	6		8		4
Case Number	2.0	4.0	2.0	4.0		8.0		8.0
Phase Duration, s	6.0	86.9	6.6	87.5		26.5		26.5
Change Period, ($Y+R_c$), s	4.5	4.5	4.5	4.5		4.5		4.5
Max Allow Headway (MAH), s	3.1	0.0	3.1	0.0		3.1		3.1
Queue Clearance Time (g_s), s	2.6		2.8			21.8		4.3
Green Extension Time (g_e), s	0.0	0.0	0.0	0.0		0.2		0.5
Phase Call Probability	0.25		0.35			1.00		1.00
Max Out Probability	0.00		0.00			0.62		0.00

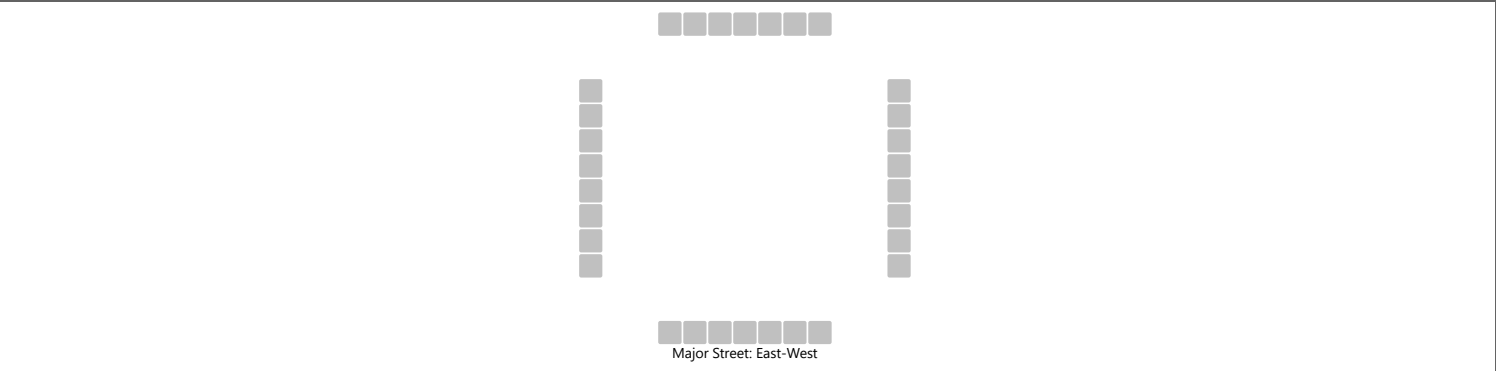
Movement Group Results	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Assigned Movement	5	2	12	1	6	16	3	8	18	7	4	14
Adjusted Flow Rate (v), veh/h	9	582	513	13	439	432		239			43	
Adjusted Saturation Flow Rate (s), veh/h/ln	1810	1950	1714	1810	1950	1921		1506			1843	
Queue Service Time (g_s), s	0.6	16.0	16.1	0.8	10.8	10.8		17.5			0.0	
Cycle Queue Clearance Time (g_c), s	0.6	16.0	16.1	0.8	10.8	10.8		19.8			2.3	
Green Ratio (g/C)	0.01	0.69	0.69	0.02	0.69	0.69		0.18			0.18	
Capacity (c), veh/h	22	1339	1177	31	1348	1328		335			379	
Volume-to-Capacity Ratio (X)	0.381	0.435	0.436	0.407	0.326	0.326		0.715			0.112	
Back of Queue (Q), ft/ln (95 th percentile)	12.6	266.3	242.6	18.4	193	190.9		294.5			47.5	
Back of Queue (Q), veh/ln (95 th percentile)	0.5	10.7	9.7	0.7	7.7	7.6		11.8			1.9	
Queue Storage Ratio (RQ) (95 th percentile)	0.00	0.00	0.00	0.00	0.00	0.00		0.00			0.00	
Uniform Delay (d_1), s/veh	58.8	8.4	8.4	58.3	7.4	7.4		48.1			40.9	
Incremental Delay (d_2), s/veh	3.9	1.0	1.2	3.1	0.6	0.7		4.3			0.0	
Initial Queue Delay (d_3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0		0.0			0.0	
Control Delay (d), s/veh	62.7	9.4	9.6	61.5	8.0	8.0		52.4			41.0	
Level of Service (LOS)	E	A	A	E	A	A		D			D	
Approach Delay, s/veh / LOS	9.9	A		8.8	A		52.4	D		41.0	D	
Intersection Delay, s/veh / LOS	14.5						B					

Multimodal Results	EB		WB		NB		SB	
Pedestrian LOS Score / LOS	1.64	B	1.64	B	2.31	B	2.31	B
Bicycle LOS Score / LOS	1.40	A	1.22	A	0.88	A	0.56	A

HCS Two-Way Stop-Control Report

General Information		Site Information	
Analyst	ALW	Intersection	Sprague / Flora
Agency/Co.	Sunburst Engineering	Jurisdiction	Spokane Valley, WA
Date Performed	6/7/2023	East/West Street	Sprague Ave
Analysis Year	2028	North/South Street	Flora Rd
Time Analyzed	School Dismissal w/ Proje	Peak Hour Factor	0.92
Intersection Orientation	East-West	Analysis Time Period (hrs)	0.25
Project Description	Tschirley Apts		

Lanes



Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority	1U	1	2	3	4U	4	5	6		7	8	9		10	11	12
Number of Lanes	0	0	2	0	0	1	2	0		0	1	0		0	0	0
Configuration			T	TR		L	T				LR					
Volume (veh/h)			1047	75	0	86	998			41		43				
Percent Heavy Vehicles (%)					0	0				0		0				
Proportion Time Blocked																
Percent Grade (%)									0							
Right Turn Channelized																
Median Type Storage	Left Only								1							

Critical and Follow-up Headways

Base Critical Headway (sec)						4.1					7.5		6.9			
Critical Headway (sec)						4.10					6.80		6.90			
Base Follow-Up Headway (sec)						2.2					3.5		3.3			
Follow-Up Headway (sec)						2.20					3.50		3.30			

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)						93					91					
Capacity, c (veh/h)						579					240					
v/c Ratio						0.16					0.38					
95% Queue Length, Q ₉₅ (veh)						0.6					1.7					
Control Delay (s/veh)						12.4					29.0					
Level of Service (LOS)						B					D					
Approach Delay (s/veh)					1.0				29.0							
Approach LOS					A				D							

TECHNICAL APPENDIX

HYPOTHETICAL MAXIMUM P. M. PEAK HOUR LEVEL OF SERVICE CALCULATIONS

HCS Two-Way Stop-Control Report

General Information

Analyst

ALW

Agency/Co.

Sunburst Engineering

Date Performed

5/16/24

Analysis Year

2028

Time Analyzed

PM Peak w/ Project

Intersection Orientation

East-West

Project Description

Tschirley Apts

Site Information

Intersection

Sprague / Tschirley

Jurisdiction

Spokane Valley, WA

East/West Street

Sprague Ave

North/South Street

Tschirley Rd

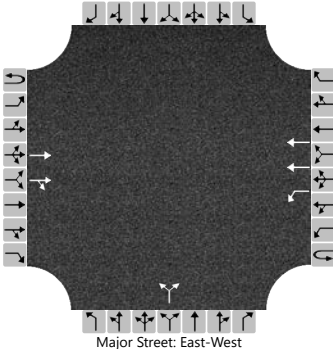
Peak Hour Factor

0.93

Analysis Time Period (hrs)

0.25

Lanes




Vehicle Volumes and Adjustments																
Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority	1U	1	2	3	4U	4	5	6		7	8	9		10	11	12
Number of Lanes	0	0	2	0	0	1	2	0		0	1	0		0	0	0
Configuration			T	TR		L	T				LR					
Volume (veh/h)			963	168	0	79	877			98		53				
Percent Heavy Vehicles (%)					0	0				0		0				
Proportion Time Blocked																
Percent Grade (%)									0							
Right Turn Channelized																
Median Type Storage	Left Only								1							

Critical and Follow-up Headways																
Base Critical Headway (sec)						4.1				7.5		6.9				
Critical Headway (sec)						4.10				6.80		6.90				
Base Follow-Up Headway (sec)						2.2				3.5		3.3				
Follow-Up Headway (sec)						2.20				3.50		3.30				

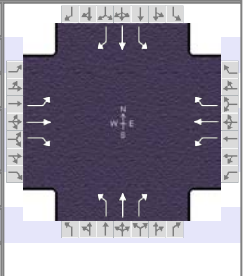
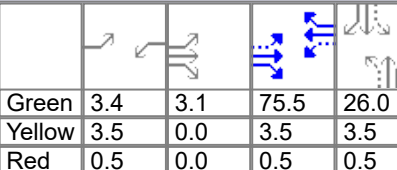
Delay, Queue Length, and Level of Service																
Flow Rate, v (veh/h)						85					162					
Capacity, c (veh/h)						580					228					
v/c Ratio						0.15					0.71					
95% Queue Length, Q ₉₅ (veh)						0.5					4.7					
95% Queue Length, Q ₉₅ (ft)						12.5					117.5					
Control Delay (s/veh)						12.3					52.4					
Level of Service (LOS)						B					F					
Approach Delay (s/veh)					1.0				52.4							
Approach LOS					A				F							

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GW PM Sprague T.xtw

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HCS Signalized Intersection Results Summary

General Information						Intersection Information													
Agency	Sunburst Engineering					Duration, h	0.250												
Analyst	ALW	Analysis Date	5/24/2023			Area Type	Other												
Jurisdiction	Spokane Valley, WA	Time Period	PM Peak w/ Everything			PHF	0.94												
Urban Street	Sprague Ave	Analysis Year	2028			Analysis Period	1> 7:00												
Intersection	Sprague / Flora	File Name	GW PM Flora.xus																
Project Description	Tschirley Apts																		
Demand Information				EB			WB			NB			SB						
Approach Movement				L	T	R	L	T	R	L	T	R	L	T	R				
Demand (v), veh/h				178	1037	74	24	974	112	59	47	11	240	77	143				
Signal Information																			
Cycle, s	120.0	Reference Phase	2																
Offset, s	0	Reference Point	End																
Uncoordinated	No	Simult. Gap E/W	On		Green	3.4	3.1	75.5	26.0	0.0	0.0								
Force Mode	Fixed	Simult. Gap N/S	On		Yellow	3.5	0.0	3.5	3.5	0.0	0.0								
				Red	0.5	0.0	0.5	0.5	0.0	0.0									
Timer Results				EBL		EBT		WBL		WBT		NBL		NBT		SBL		SBT	
Assigned Phase				5		2		1		6				8				4	
Case Number				1.1		3.0		1.1		3.0				5.0				5.0	
Phase Duration, s				10.5		82.6		7.4		79.5				30.0				30.0	
Change Period, (Y+R c), s				4.0		4.0		4.0		4.0				4.0				4.0	
Max Allow Headway (MAH), s				3.1		0.0		3.1		0.0				3.3				3.3	
Queue Clearance Time (g s), s				6.3				2.6						11.0				26.4	
Green Extension Time (g e), s				0.2		0.0		0.0		0.0				1.2				0.0	
Phase Call Probability				1.00				0.57						1.00				1.00	
Max Out Probability				0.00				0.00						0.00				1.00	
Movement Group Results				EB			WB			NB			SB						
Approach Movement				L	T	R	L	T	R	L	T	R	L	T	R				
Assigned Movement				5	2	12	1	6	16	3	8	18	7	4	14				
Adjusted Flow Rate (v), veh/h				189	1103	79	26	1036	119	63	50	12	255	82	152				
Adjusted Saturation Flow Rate (s), veh/h/ln				1810	1950	1597	1810	1950	1597	1417	1950	1610	1459	1950	1610				
Queue Service Time (g s), s				4.3	54.0	2.1	0.6	50.5	3.6	4.8	2.5	0.7	22.0	4.1	9.8				
Cycle Queue Clearance Time (g c), s				4.3	54.0	2.1	0.6	50.5	3.6	9.0	2.5	0.7	24.4	4.1	9.8				
Green Ratio (g/C)				0.69	0.65	0.65	0.66	0.63	0.63	0.22	0.22	0.22	0.22	0.22	0.22				
Capacity (c), veh/h				274	1277	1046	209	1226	1005	318	423	349	346	423	349				
Volume-to-Capacity Ratio (X)				0.692	0.864	0.075	0.122	0.845	0.119	0.197	0.118	0.034	0.738	0.194	0.436				
Back of Queue (Q), ft/ln (95 th percentile)				150	806	33	14	770	57	73	54	12	324	91	179				
Back of Queue (Q), veh/ln (95 th percentile)				6.0	32.2	1.3	0.6	30.8	2.3	2.9	2.2	0.5	13.0	3.6	7.1				
Queue Storage Ratio (RQ) (95 th percentile)				0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00				
Uniform Delay (d 1), s/veh				23.2	16.5	7.5	19.4	17.6	8.9	42.1	37.8	37.1	47.6	38.4	40.7				
Incremental Delay (d 2), s/veh				1.2	7.9	0.1	0.1	7.2	0.2	0.1	0.0	0.0	7.1	0.1	0.3				
Initial Queue Delay (d 3), s/veh				0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0				
Control Delay (d), s/veh				24.4	24.4	7.7	19.5	24.9	9.2	42.2	37.8	37.1	54.8	38.5	41.0				
Level of Service (LOS)				C	C	A	B	C	A	D	D	D	D	D	D				
Approach Delay, s/veh / LOS				23.4		C		23.2		C		40.0		D		47.8		D	
Intersection Delay, s/veh / LOS				27.8						C									
Multimodal Results				EB			WB			NB			SB						
Pedestrian LOS Score / LOS				2.07		B		2.07		B		2.13		B		2.13		B	
Bicycle LOS Score / LOS				2.75		C		2.44		B		0.69		A		1.30		A	

