



Whipple Consulting Engineers, Inc.

January 9, 2023
W.O. No. 2021-3109

City of Spokane
Department of Engineering Services
801 W. Spokane Falls Boulevard
Spokane, WA 99201

Parcel No. 25263.0052, 25263.0051, 25263.0048, 25263.2907, 25263.3003, 25263.2809
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Attn: Inga Note, P.E.,

Re: **Beard Addition to West Bluff
Cumberland Ln & 21st Ave
Expanded Trip Generation & Distribution Letter**

Dear Ms. Note,

The purpose of this document is to provide an expanded Trip Generation and Distribution Letter (TGDL) for the proposed Beard Addition to West Bluff located south of the intersection of Cumberland Lane and 21st Avenue as shown on Figure 2, Preliminary Site Plan. This letter will follow the standards for doing Trip Generation and Distribution Letters as required by the City of Spokane and the Institute of Transportation Engineers (ITE).

PROJECT DESCRIPTION

The project proposes to develop 33.87 ac +/- of 6 parcels into a 192-lot Single-Family Residential subdivision. The project site is currently undeveloped and covered in field grass, trees, and weeds. The project proposes to build multiple public roads within the site. The project site will be accessed via 21st Avenue intersections with Cumberland and Westridge. The expected build out year is 2028. There is no phasing plan currently. Please see Figure 2, Preliminary Site Plan.

VICINITY / SITE PLAN

The site is currently listed on the comprehensive plan and zoned as Residential Single Family (RSF). The subject property is located in a portion of SW ¼, Section 26, T25N., R42E., W.M. The parcel numbers for the project are 25263.0052, 25263.0051, 25263.0048, 25263.2907, 25263.3003, and 25263.2809. The surrounding area are residential and undeveloped land uses.

TRIP GENERATION AND DISTRIBUTION

Trip Types

The proposed use is a residential development; Institute of Transportation Engineers (ITE) has developed data regarding various trip types that all developments experience. These are found in several places; however, for this analysis the *Trip Generation Manual 11th Edition* as well as the *Trip Generation Handbook* were used to develop the criteria for this analysis.

Generally, all existing and proposed developments will be made up of one or more of the following four trip types: new (destination) trips, pass-by trips, diverted trips, and shared (internal trips). In order to better understand the trip types available for land access a description of each specific trip type follows.

New (Destination) Trips - These types of trips occur only to access a specific land use such as a new retail development or a new residential subdivision. These types of trips will travel to and from the new site and a single other destination such as home or work. This is the only trip type that will result in a net increase in the total amount of traffic within the study area. The reason primarily is that these trips represent planned trips to a specific destination that never took trips to that part of the city prior to the development being constructed and occupied. This project will develop new trips.

Pass-by Trips - These trips represent vehicles which currently use adjacent roadways providing primary access to new land uses or projects and are trips of convenience. These trips, however, have an ultimate destination other than the project in question. They should be viewed as customers who stop in on their way home from work. An example would be on payday, where an individual drives by their bank every day without stopping, except on payday. On that day, this driver would drive into the bank, perform the prerequisite banking, and then continue on home. In this example, the trip started from work with a destination of home, however on the way, the driver stopped at the grocery store/latte stand and/or bank directly adjacent to their path. Pass-by trips are most always associated with commercial/retail types of development along major roadways. Therefore, for this project pass-by trips will not be considered.

Diverted (Linked) Trips - These trips occur when a vehicle takes a different route than normal to access a specific facility. Diverted trips are similar to pass-by trips, but diverted trips occur from roadways which do not provide direct access to the site. Instead, one or more streets must be utilized to get to and from the site. For this project, no diverted trips are anticipated.

Shared Trips - These are trips which occur on the site where a vehicle/consumer will stop at more than one place on the site. For example, someone destined for a certain shop at a commercial site may stop at a bank just before or after they visit the shop that they went to the site to visit. This trip type reduces the number of new trips generated on the public road system and is most commonly used for commercial developments. Since the project has only one land use and no cross-access driveways with other land uses, no shared trips were considered.

Trip Generation Characteristics for the Proposed Project

As noted earlier, trip generation rates for the AM & PM peak hours are determined by the use of the *Trip Generation Manual, 11th Edition* published by the Institute of Transportation Engineers (ITE). The purpose of the *Trip Generation Manual* is to compile and quantify empirical data into trip generation rates for specific land uses within the US, UK, and Canada.

Proposed Land Uses

For the proposed 192 single family residential units, Land Use Code LUC#210, Single-Family Detached Housing was used to establish the number of potential trips generated by the proposed land use. Based upon Section 4.4 in Trip Generation Handbook, the fitted curve equation was used to calculate new project trips. The fitted curve equation and the anticipated number of AM & PM peak hour trips for the proposed land use are shown on Table 1.

Table 1-Trip Generation Rates for LUC # 210 – Single-Family Detached Housing (Fig. 3&4)

Dwelling Units	AM Peak Hour Trips			PM Peak Hour Trips		
	Vol. @ Fitted Curve Equation / Unit	Directional Distribution		Vol. @ Fitted Curve Equation / Unit	Directional Distribution	
		26% In	74% Out		63% In	37% Out
192	135	35	100	184	116	68
Average Daily Trip Ends (ADT)				Fitted Curve Equation		
Units	Fitted Curve Equation	ADT		AM – Ln(T) = 0.91 Ln(x) + 0.12 PM - Ln(T) = 0.94 Ln(x) + 0.27 ADT – Ln(T) = 0.92 Ln(x) + 2.68 T = Trips/units, x = Dwelling Units		
192		1,839				

As shown on Table 1, the proposed development is anticipated to generate a total of 135 trips in the AM peak hour with 35 trips entering the site and 100 trips exiting the site. In the PM peak hour, the proposed development is anticipated to generate a total of 184 trips, with 116 trips entering the site and 68 trips exiting the site. The proposed development is anticipated to generate a total of 1,839 average daily trip ends to/from the site.

TRIP DISTRIBUTION

As shown on the site plan, the site will be accessed via two public roads connection to 21st Avenue. (Please see Figure 2 Site Plan) It is anticipated that the residents of the site will generally use the following roadways:

21st Avenue is generally an east/west, two-way, 2-lane local access road that extends west from 22nd Avenue through D Street, Scenic Boulevard, and F Street before terminating. 21st Avenue is scheduled to be extended to Grandview Avenue at the H Street alignment as part of the completion of the westridge alignment PUD phase 1. 21st Avenue serves residential land uses. The speed limit on 21st Avenue is 25 MPH.

Grandview Avenue is generally an east/west, two-way, 2-lane urban collector that extends east from Garden Springs Road to “H” Street. Grandview Avenue serves residential land uses. The speed limit on Grandview Avenue is 25 MPH.

16th Avenue is generally an east/west, two-way, 2-lane urban collector that extends northeast and east from 17th Avenue through Milton Street before terminating at Canyon Woods Lane. 16th Avenue serves residential and rural land uses. The speed limit on 16th Avenue is 25 MPH.

17th Avenue is generally an east/west, two-way, 2-lane local access road that extends east from Grandview Avenue through 16th Avenue, F Street, D Street, and Grandview Avenue before terminating. 17th Avenue serves primarily residential land uses. The speed limit on 17th Avenue is 25 MPH.

Milton Street is generally a north/south, two-way, 2-lane urban collector that extends south from 14th Avenue through 16th Avenue before terminating just beyond. Milton Street serves residential land use. The speed limit on Grandview Avenue is 25 MPH.

14th Avenue is generally an east/west, two-way, 2-lane urban collector/local access road that starts next to I-90 southeast through South Loop Avenue, Milton Street, and Lindeke Street before terminating at Cochran Street. 14th Avenue serves residential land uses. The speed limit on 14th Avenue is 25 MPH.

Lindeke Street is generally a north/south, two-way, 2-&4-lane minor arterial that extends south from Sunset Boulevard through 9th Avenue, passing over I-90, through Lindeke Court, 14th Avenue, and 15th Avenue before terminating at 16th Avenue. Lindeke Street serves residential, institutional, and lodging land uses. The speed limit on Lindeke Street is 25 MPH.

Garden Springs Road is generally an east/west, two-way, 2-lane urban minor arterial and local access road. That extends south from the end of Rustle Road over I-90 and through Grandview Avenue and Assembly Road before turning north at Abbott Road, and then goes underneath I-90, as a local access road, before transitioning into Lawton Road. Garden Springs Road serves low-density residential and institutional land uses. The posted speed limit on Garden Springs Road in the project area is 25 MPH.

Rustle Street is generally a north/south, two-way, 2-lane urban minor arterial that extends south from Sunset Highway through I-90 west bound off ramp and then transitions into Garden Springs Road at the I-90 Bridge. Rustle Street serves commercial and lodging land uses. The posted speed limit on Rustle Street in the project area is 25 MPH.

Sunset Highway/Boulevard is generally an east/west, two-way, 2-,3-, &4-lane urban major arterial that extends east from Highway 2 interchange through Lewis Street, Geiger Boulevard, Rustle Street, Lindeke Street, Inland Empire Way, and 4th Avenue before transitioning into 2nd and 3rd Avenues. Sunset Highway/Boulevard serves residential, commercial, and industrial land uses. The posted speed limit on Sunset Highway/Boulevard in the project area is 40 MPH.

Geiger Boulevard is generally a northeast/southwest, two-way, 2-lane minor arterial. Geiger Boulevard extends southwest from Sunset Highway, passing under US Route 2, through Grove Road/Flightline Boulevard, Electric Road and Thomas Mallen Road, Geiger Boulevard then curves west before terminating at Hayford Road. Geiger Boulevard primarily serves industrial uses. The posted speed limit on Geiger Boulevard in the project area is 45 MPH.

Abbott Road/Lawton Road is generally a north/south, two-way, 2-lane local access road that extends north in the project area from Thorpe Road through Winsor Road and I-90 eastbound off ramp before going underneath Interstate 90 and curving west, becoming Lawton Road, through Garden Spring Road and Ball Road before terminating at Geiger Boulevard. Abbott Road generally serves light industrial and low-density residential land uses in the project area. The posted speed limit on Abbott Road in the project area is 25 MPH.

Thorpe Road is generally an east/west, two-way, 2-lane urban collector and urban minor arterial and urban minor arterial. Thorpe Road extends east from Westbow Boulevard as an urban collector arterial to Grove Road where it then continues east as an urban minor arterial through Abbott Road, Assembly Road, Trainor Road, and Highway 195 before becoming 23rd Avenue. Thorpe Road primarily serves light industrial and low-density residential land uses in the project area. The posted speed limit on Thorpe Road in the project area is 30 MPH.

Inland Empire Way is generally a north/south, two-way, 2-lane urban collector that extends south from Sunset Boulevard through 16th Avenue, 23rd Avenue, and Oak Street before terminating with a Cul-de-sac. Inland Empire Way primarily serves residential and commercial land uses in the project area. The posted speed limit on Inland Empire Way in the project area is 30 MPH.

Interstate 90 (I-90) is generally an east/west, two-way, 4-lane interstate freeway. I-90 is a transcontinental freeway, extending from Seattle, Washington to Boston, Massachusetts. The project trips are anticipated to use the Garden Springs eastbound/westbound off ramps and the SR 195 westbound off/eastbound on ramps. The posted speed limit on I-90 within the study area is 60 mph.

State Route 195 is generally a north/south, two-way, 4-lane highway. State Route 195 extends south from Interstate 90 at Exit 279 and goes through 16th Avenue, Thorpe Road and the Cities of Spangle, Freedom, Plaza, Rosalia, Thornton, Cashup, Steptoe, Colfax, Pullman, Johnson, Colton, and Uniontown before merging with State Route 95. The posted speed limit on State Route 195 within the study area is 55mph.

Trip distribution has been extended beyond the typical range for this project similar to the extent of previous projects within the area. So as to answer questions about distribution by WSDOT as it relates to SR 195 and I-90. These general distributions have been approved by the agencies in the past. Hence the anticipation that this similar distribution will be easily accepted.

Considering many factors such as the surrounding transportation facilities, typical commuting patterns, existing development in the area, and the ADT of surrounding roadways the traffic for the proposed development is anticipated as follows (Please see Figures 3,4,5, &6 AM&PM Trip Distribution Percentages for the graphical representation.):

Entering

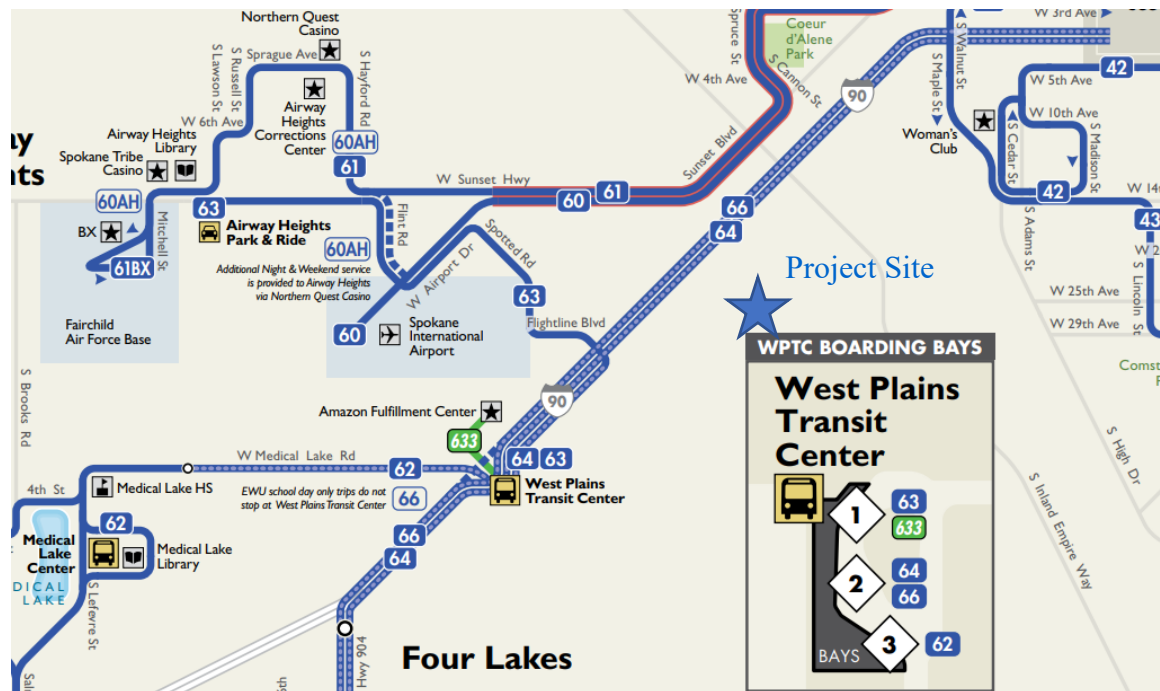
20% of trips are anticipated to come from the northwest via Sunset Boulevard, 10% of trips are anticipated to come from the west via I-90, 5% of trips are anticipated to come from the south via Assembly Road, 5% of trips are anticipated to come from the south via SR 195, 5% of trips are anticipated to come from the South Hill area by way of Inland Empire Way, 45% of trips are anticipated to come from the east via I-90, and 10% of the trips are anticipated to come from the east via Sunset Boulevard.

Exiting

20% of trips are anticipated to go to the northwest via Sunset Boulevard, 5% of trips are anticipated to go to the west via Geiger Boulevard, 5% of trips are anticipated to go to the west via Lawton Road, 5% of trips are anticipated to go to the south via Assembly Road, 5% of trips are anticipated to go to the south via SR 195, 5% of trips are anticipated to go to the South Hill area by way of Inland Empire Way, 5% of trips are anticipated to go to the east via SR 195 & I-90, and 50% of trips are anticipated to go to the east via Sunset Boulevard.

Existing Transit System

The existing bus routes nearest the project site are Routes 60&61. The nearest bus stops from the project site to the route is 0.5 miles at Sunset Boulevard & Rustle Street. The bus stops can be accessed via Sunset Boulevard and Rustle Street. Please see the attached route map.

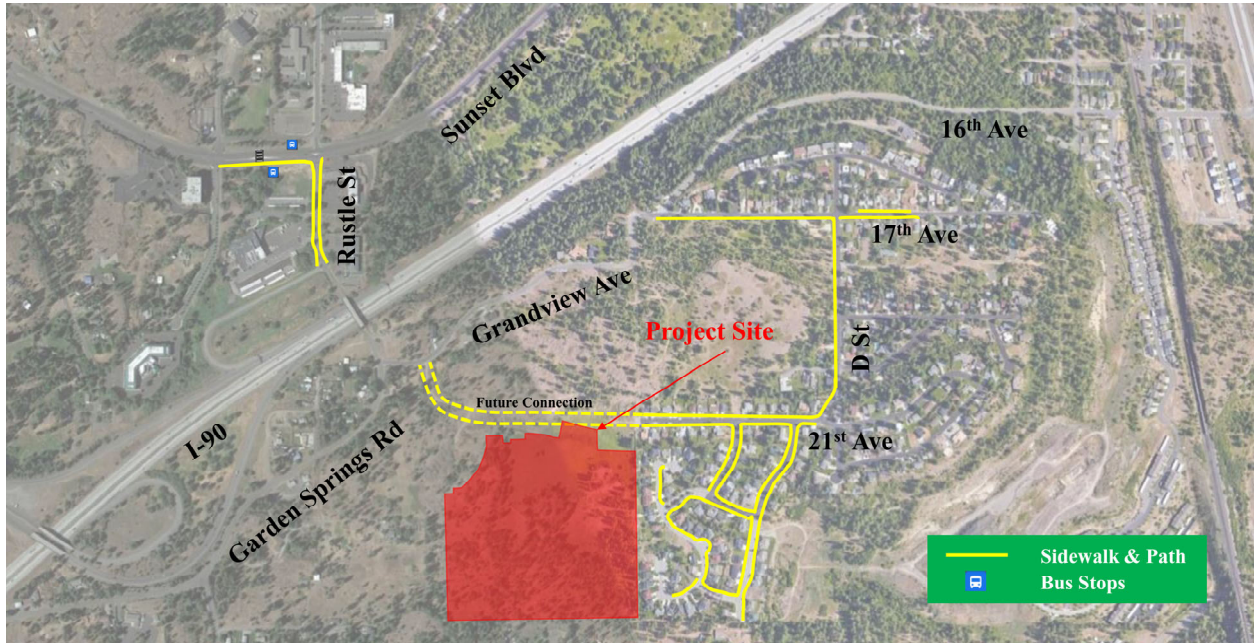


Source: Spokane Transit Authority

Existing Pedestrian System

There are sidewalks along 17th Avenue from 16th Avenue to C Street, D Street from 17th Avenue to 21st Avenue, 21st Avenue from D Street to the west end, Rustle Street from I-90 Ramp to Sunset Boulevard, and Sunset Boulevard from Rustle Street to Assembly Road. There are no sidewalks

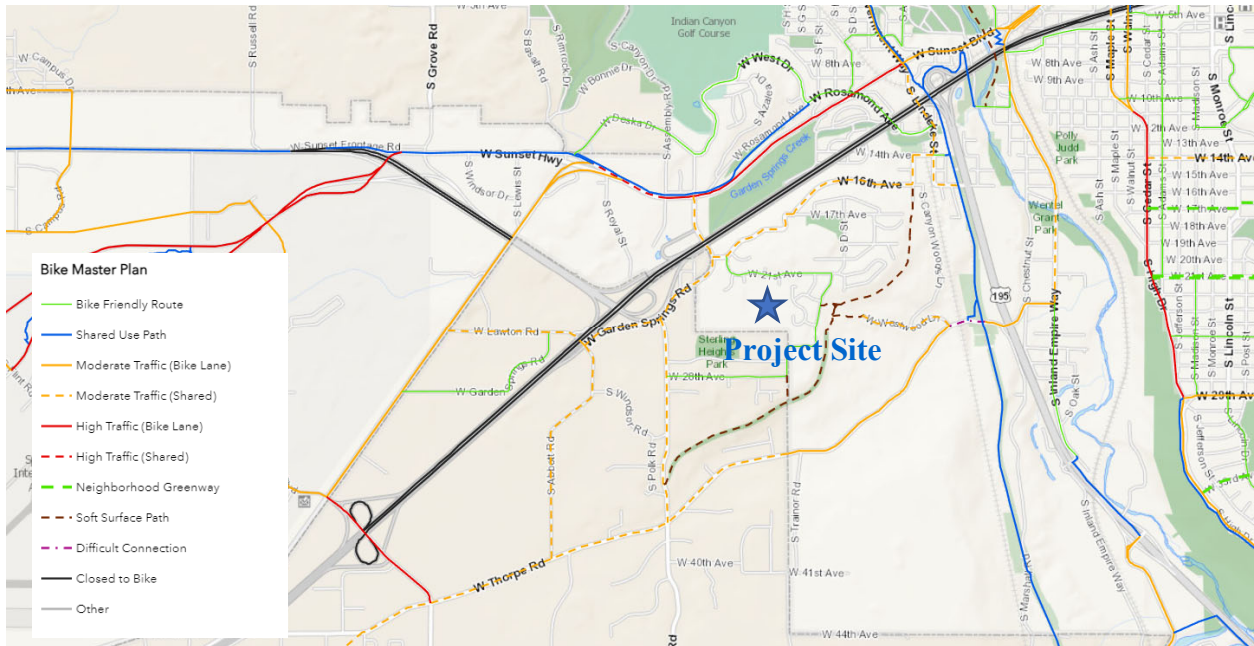
along Garden Springs Road, Grandview Avenue, and 16th Avenue within the study area. Please see the following pedestrian sidewalk map.



Source: Google Satellite Map

Existing Bike System

16th Avenue, Grandview Avenue, Garden Springs Road, and Rustle Street are assigned as shared roadways. There are bike lanes along Sunset Boulevard from Royal Street to Government Way within the study area. Please see the City of Spokane Bike Plans map.



Source: City of Spokane Bike Plans

Impacted Intersections \geq 20 PM Peak Hour Trips

The trip distribution as a result of the proposed project has identified the following affected intersections. This identification is in consensus with previous projects as an aid to the traffic engineer.

- 16th Avenue/17th Avenue
- 14th Avenue/Lindeke Street
- Sunset Boulevard/Lindeke Street
- Grandview Avenue/Garden Springs Road
- I-90 Interchange/Garden Springs Road
- Sunset Boulevard/Rustle Road

TRAFFIC IMPACT FEE

The City of Spokane municipal code has established transportation impact fees under Spokane Municipal Code Title 17 Chapter 17D.030. The proposed project is within the South Service Area and as such is subject to the current Impact Fee Schedule. Table 2 calculates the anticipated impact fee for the proposed project.

Table 2 –Proposed Land Use Impact Fee

Land Use	LUC	Quantity	Unit of Measure	Fee per unit	Fee
LUC # 210 Single Family	210	192	dwelling	\$1,206.58	\$231,663.36

As shown in Table 2, the proposed project under the current fee schedule is anticipated to generate an impact fee of \$231,663.36.

ADDITIONAL ANALYSIS

LEVEL OF SERVICE (LOS) ANALYSIS

This expanded analysis includes two (2) intersections within the study area as requested by the City of Spokane at neighboring projects. Three scenarios were examined for the LOS analysis.

- The first scenario (#1) is the existing traffic volumes as shown in Figure 7, and LOS is shown in Table 2.
- The second scenario (#2) assumes that the existing traffic volumes experience an increase above the existing volumes at the established background rate as shown on Figure 8, and LOS is shown in Table 4.
- The third scenario (#3) assumes that the development has moved forward and analyzes the scoped intersections with the background growth rate and the project trips as shown on Figure 9, and LOS is shown in Table 5.

These scenarios will allow a determination to be made as to what the future conditions may be both with/without the background growth and with/without the project trips.

Methodology

For the level of service analysis, the HCM 6th addition was used. Please see the appendix for a more detail description of level of service both signalized and unsignalized

Traffic Volumes and Peak Hours of Operation

Traffic counts were collected in June 2022 under the direction of Whipple Consulting Engineers (WCE), at the following intersections:

- Grandview Avenue/16th Avenue & 17th Avenue
- 13th Avenue & Lindeke Street

The AM & PM peak hour volumes from these counts are adjusted by one year of growth as shown in Figure 7. The raw data for these counts is located in the technical appendix.

Scenario #1 –2023 Existing

The existing Levels of Service at the scoped intersection were calculated using the methods from the 6th Edition Highway Capacity Manual as implemented in Synchro, version 11 - Build 122. The existing Levels of Service for the intersection within the study area are summarized in Table 2. The existing traffic volumes used for this report are shown in Figure 7.

Table 2 – 2022 Existing Intersection Levels of Service (Figure 7)

INTERSECTION		AM Peak Hour		PM Peak Hour	
		Delay (sec)	LOS	Delay (sec)	LOS
Grandview Avenue/16 th Ave. & 17 th Ave.	(S)ignalized (U)nsignalized U	7.0	A	7.4	A
13 th & Lindeke Street	U	8.0	A	8.4	A

Intersection Level of Service - Deficiency Evaluation

As shown in Table 2, the intersections are currently operating at an acceptable level of service.

Background Traffic Growth

The background growth rate was determined to be 1.00% per year. Based on a two-year build out, compounded annually, the total increase in traffic rate for the year 2028 is anticipated to be 1.051.

Background Projects

In addition to the natural increase in background growth, background projects that have already been approved or have made application and have been vested before this project have been included. The summary of background project traffic volumes used for this report are shown on Table 3 and the volumes included in a worksheet within the appendix.

Table 3 – Summary of the Background Project Trip Generation *

Background Projects	Land Use (ITE LUC)	Unit	AM Peak Hour Trips			PM Peak Hour Trips		
			Vol. / LUC	Directional Distribution		Vol. / LUC	Directional Distribution	
				In	Out		In	Out
Eagle Ridge 13 th Add	(210)	104	77	19	58	103	65	38
The Summit	(210)	99	74	19	55	99	62	37
Tangle Ridge	(210)	45	34	8	26	45	28	17
Wheatland Estates	(210)	200	148	37	111	198	125	73
Latah Glen	(240)	157	36	10	26	66	42	24
Marshall Creek	(210)	425	307	77	230	407	256	151
The Greens at Meadowlane	(210)	36	27	7	20	36	23	13
Crystal Ridge	(210)	56	45	11	34	56	35	21
Canyon Bluffs PUD	(210) & (220)	64 & 432	207	51	156	273	172	101
Grandview Addition	(210)	111	82	21	61	110	69	41
Total			1,037	260	777	1,393	877	516

Public/Private Improvement

As the Grandview Addition project is included as a background project, the improvement at the intersection of Grandview Avenue/16th Avenue & 17th Avenue, is anticipated to be complete, with a two-way stop control configuration.

Scenario #2 – Year 2028 Without Project with Background Traffic Growth and Projects

This scenario assumes that the existing traffic volumes experience an increase above the existing volumes at the established background rate. The traffic volumes for this condition include the existing traffic, as shown in Figure 7, multiplied by the background growth rate for year 2028(1.051). Please see Figure 8 for the traffic volumes used for this scenario. A summary of the Level of Service results is shown in Table 4. This scenario creates a future year baseline that allows for a direct comparison of the with project scenario.

Table 4 – Year 2028 Level of Service, Without Project w/ Background Traffic Growth and Projects (Figure 8)

INTERSECTION		AM Peak Hour		PM Peak Hour	
		Delay (sec)	LOS	Delay (sec)	LOS
	(S)ignalized (U)nsignalized				
Grandview Avenue/16 th Ave. & 17 th Ave.	U	9.2	A	7.5	A
13 th & Lindeke Street	U	9.1	A	9.8	A

*Two-way stop-controlled intersection

Intersection Level of Service - Deficiency Evaluation

As shown in Table 4, the intersections are anticipated to operate at an acceptable level of service.

Scenario #3 – Year 2028 with Project, with Background Traffic Growth & Projects

This scenario assumes that the project has moved forward and is added to the previously established future baseline of Scenario #2. The traffic volumes for this condition include the traffic volumes shown on Figure 8 and adds the project trips as shown on Figures 5 & 6. Please see Figure 9 for the traffic volumes used for this scenario. A summary of the Level of Service results is shown in Table 5.

Table 5 – Year 2028 LOS, with Project, w/ Background Traffic Growth & Projects (Figure 9) *

INTERSECTION		AM Peak Hour		PM Peak Hour	
		Delay (sec)	LOS	Delay (sec)	LOS
	(S)ignalized (U)nsignalized				
Grandview Avenue/16 th Ave. & 17 th Ave.*	U	9.4	A	9.5	A
13 th & Lindeke Street	U	9.2	A	9.9	A

*Two-way stop-controlled intersection

Intersection Level of Service - Deficiency Evaluation

As shown in Table 5, the intersections are anticipated to operate at acceptable levels of service

A reminder that this operational analysis is only a part of a larger analysis needed to change the stop control of an intersection and should not be solely relied upon in any decision, additional evaluation measures such as speed, sight distance, pedestrian, and bicycle interaction, etc... will need to be further evaluated should this change be the preferred method to reduce travel times.

The only reason that AWSC would be revised to TWSC is to better handle the flow of traffic from the project vicinity and the existing surrounding area and to decrease travel times from this area to the downtown core. While not analyzed, travel time would be the predominate reason to make this change. The reasoning is that with the future restrictions at 16th and SR-195 to restrict EB to NB left, that previous movement would need to turn left (WB to SB) and turn away from I-90 to then go to the previously constructed SB to NB J-Turn south of Thorpe Road and then make the U-Turn back to the north again and then pass the exit options at Thorpe and continue heading north to the SR-195 and I-90 interchanges Ramp Meters and the potential for stopped delay.

It is our opinion that the change to TWSC is a traffic revision that should be made to better promote downtown travel via Sunset Blvd, similarly to some of the redirections that have occurred by additional signing at Thorpe Road.

CONCLUSIONS AND RECOMMENDATIONS

It is anticipated that the proposed project will generate 135 AM peak hour trips and 184 PM peak hour trips. Based upon our professional judgement, the number of anticipated trips, and the additional analysis provided within this letter, we believe that there are no existing or expected deficiencies resulting from the project that would not be included within the City traffic improvement plan and a TIA will not be required. Therefore, we recommend that the project complete frontage improvements on 21st Avenue, pay the city impact fee at the time of building permit and be allowed to move forward without further traffic analysis.

Should you have any questions related to this document please do not hesitate to contact us at (509) 893-2617.

Sincerely,
WHIPPLE CONSULTING ENGINEERS, INC.



Todd R Whipple, P.E.

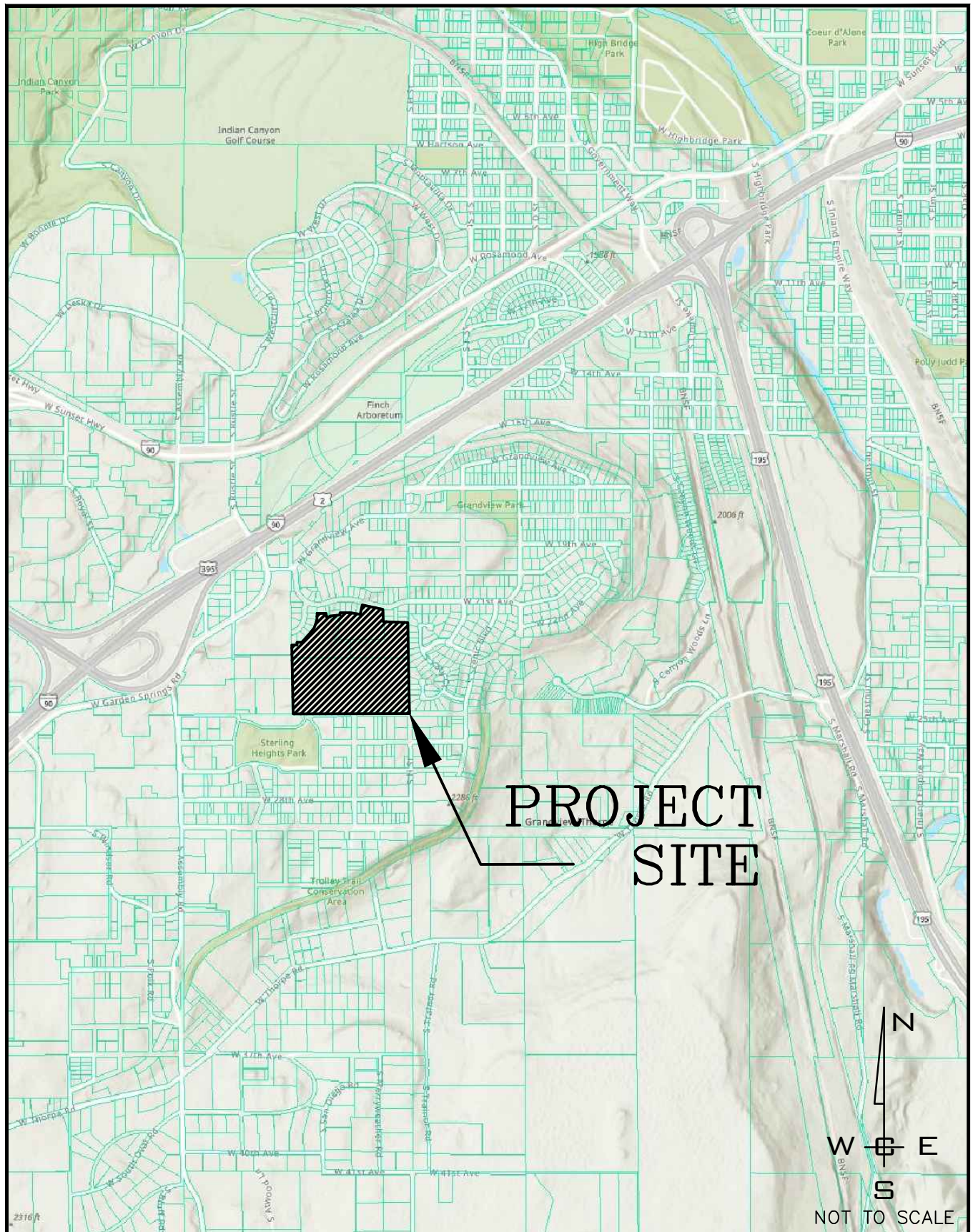
TRW/mtr

encl. Appendix

cc: Sponsor
File

APPENDIX

1. Vicinity Map
2. Site Plan
3. AM Trip Distribution by Percentage
4. PM Trip Distribution by Percentage
5. AM Trip Distribution by Percentage
6. PM Trip Distribution by Percentage
7. Year 2023 AM/PM Existing Vols & LOS
8. Year 2028 AM/PM W-O Proj Vols & LOS
9. Year 2028 AM/PM W- Proj Vols & LOS
10. Raw Traffic Counts
11. Background Projects
12. LOS Calculations



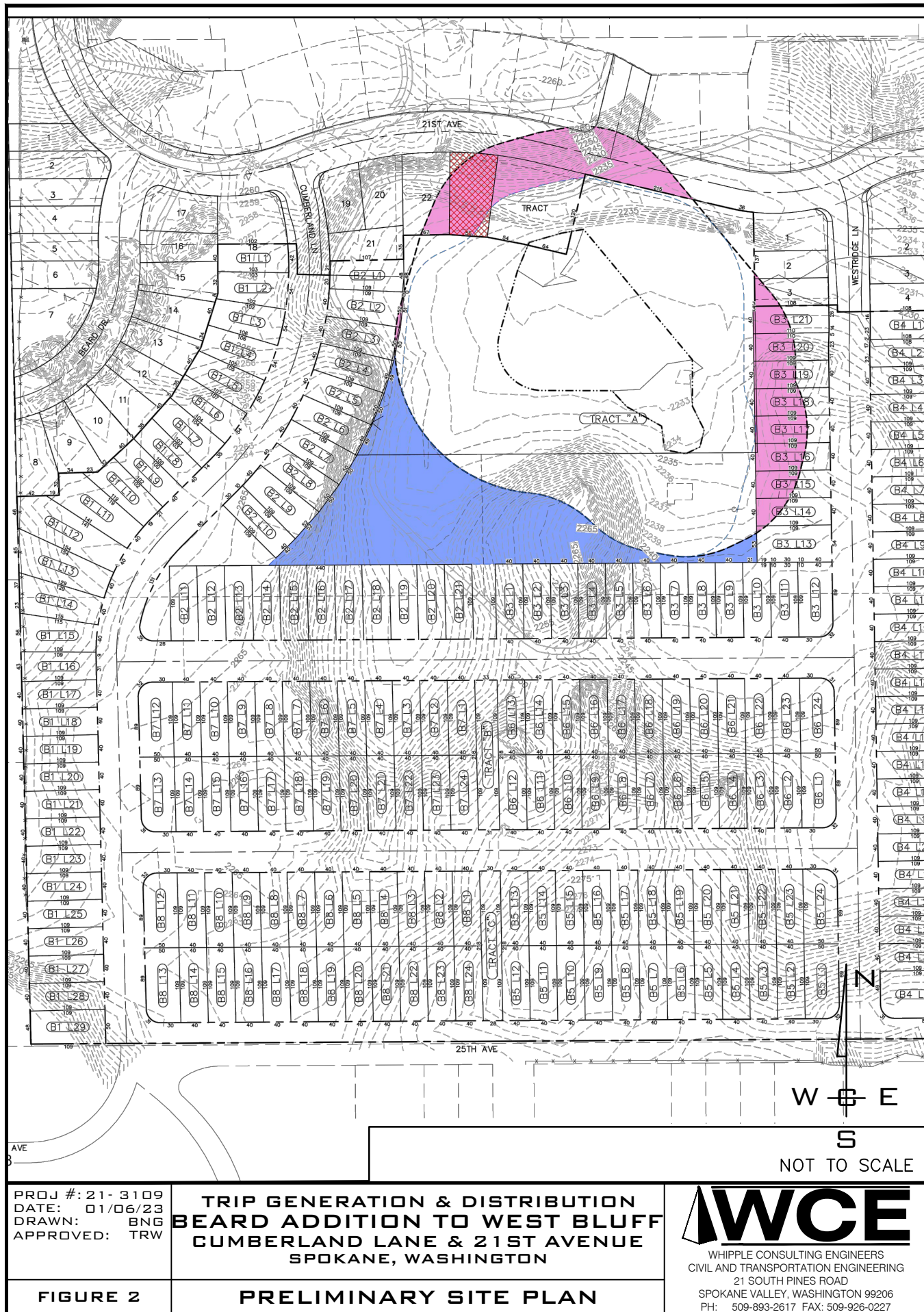
PROJ #: 21- 3109
 DATE: 04/11/22
 DRAWN: KMK
 APPROVED: TRW

FIGURE 1

TRIP GENERATION & DISTRIBUTION
BEARD ADDITION TO WEST BLUFF
CUMBERLAND LANE & 21ST AVENUE
SPOKANE, WASHINGTON

VICINITY MAP

WCE
 WHIPPLE CONSULTING ENGINEERS
 CIVIL AND TRANSPORTATION ENGINEERING
 21 SOUTH PINES ROAD
 SPOKANE VALLEY, WASHINGTON 99206
 PH: 509-893-2617 FAX: 509-926-0227



PROJ #: 21- 3109
 DATE: 01/06/23
 DRAWN: BNG
 APPROVED: TRW

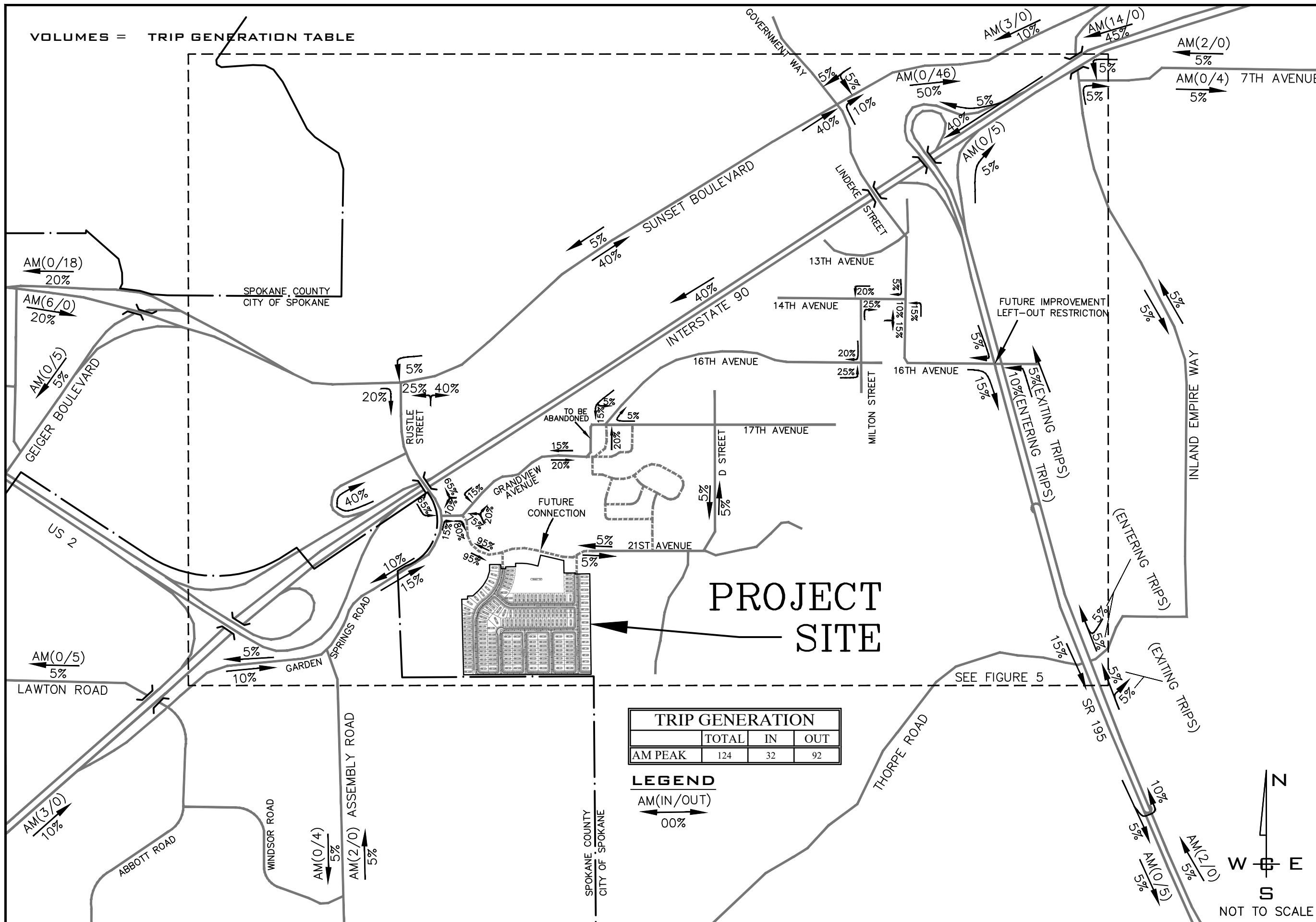
**TRIP GENERATION & DISTRIBUTION
 BEARD ADDITION TO WEST BLUFF
 CUMBERLAND LANE & 21ST AVENUE
 SPOKANE, WASHINGTON**

WCE
 WHIPPLE CONSULTING ENGINEERS
 CIVIL AND TRANSPORTATION ENGINEERING
 21 SOUTH PINES ROAD
 SPOKANE VALLEY, WASHINGTON 99206
 PH: 509-893-2617 FAX: 509-926-0227

FIGURE 2

PRELIMINARY SITE PLAN

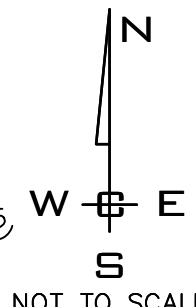
VOLUMES = TRIP GENERATION TABLE



TRIP GENERATION			
	TOTAL	IN	OUT
AM PEAK	124	32	92

LEGEND

AM(IN/OUT)
 00%



NOT TO SCALE



PROJ #: 21-3109
 DATE: 04/11/22
 DRAWN: KMK
 APPROVED: TRW

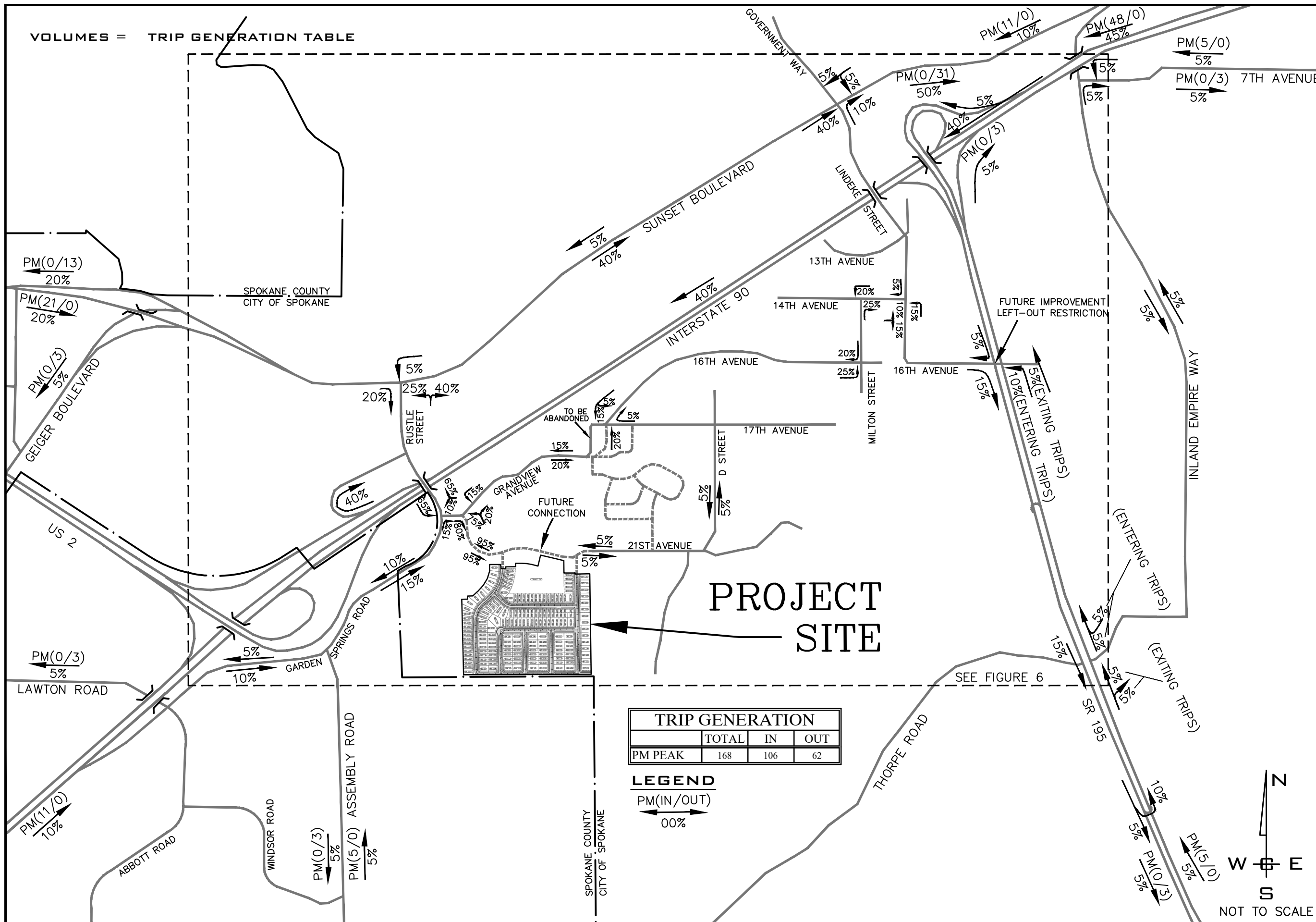
**TRIP GENERATION AND DISTRIBUTION
 BEARD ADDITION TO WEST BLUFF
 CUMBERLAND LANE & 21ST AVENUE
 SPOKANE, WASHINGTON**

AM TRIP DISTRIBUTION PERCENTAGE

FIGURE

3

VOLUMES = TRIP GENERATION TABLE



TRIP GENERATION			
	TOTAL	IN	OUT
PM PEAK	168	106	62

LEGEND

PM(IN/OUT)
 00%



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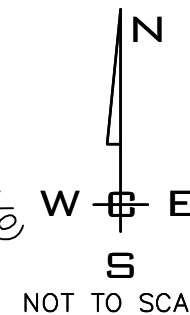
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**TRIP GENERATION AND DISTRIBUTION
 BEARD ADDITION TO WEST BLUFF
 CUMBERLAND LANE & 21ST AVENUE
 SPOKANE, WASHINGTON**

PM TRIP DISTRIBUTION PERCENTAGE

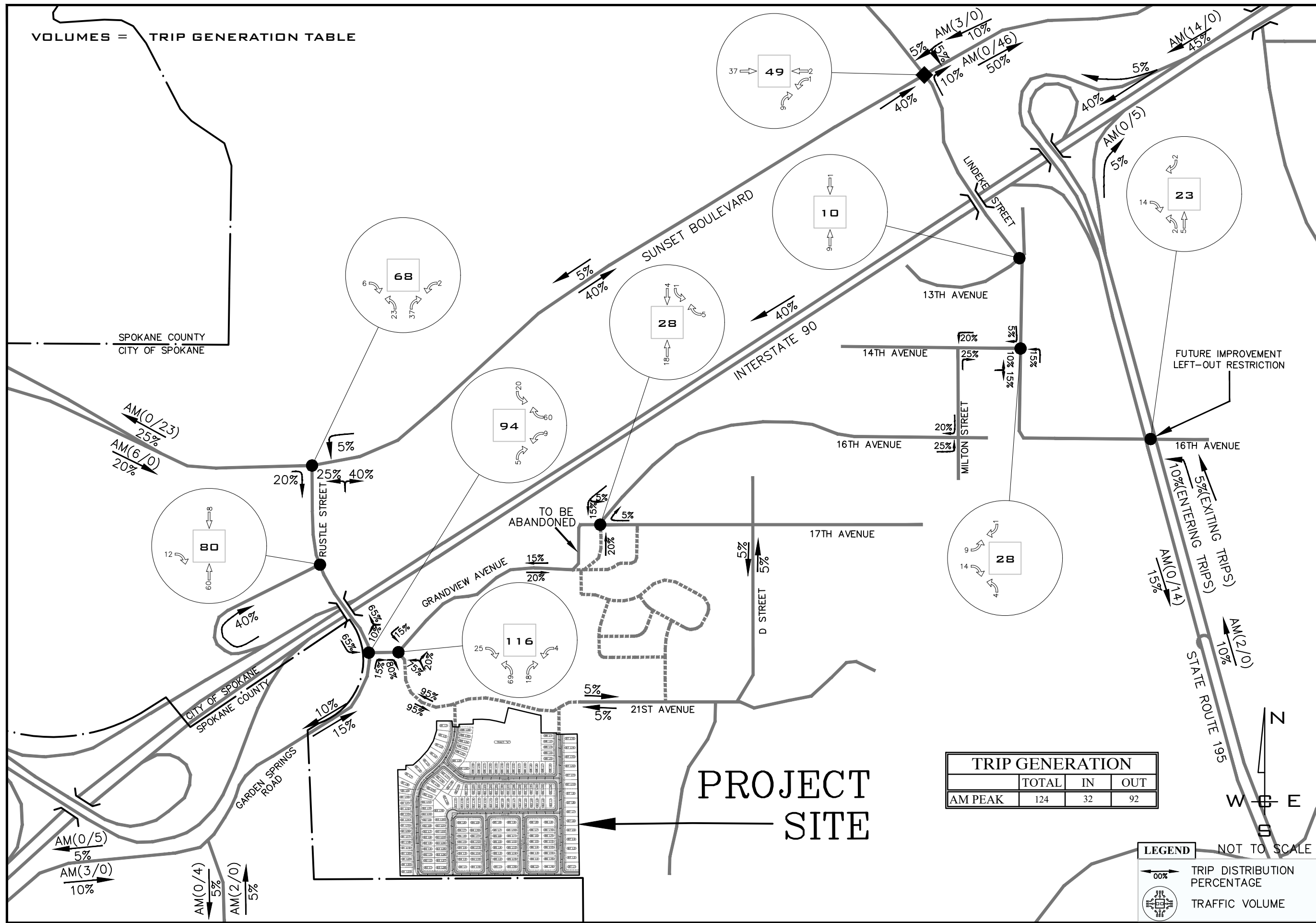
FIGURE

4

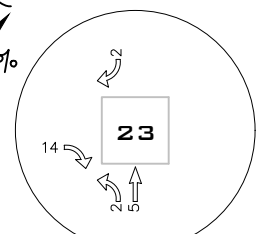
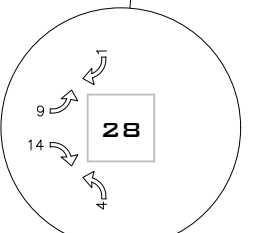
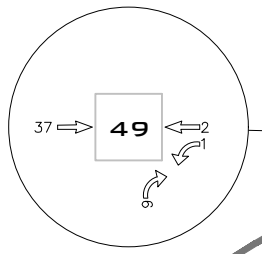
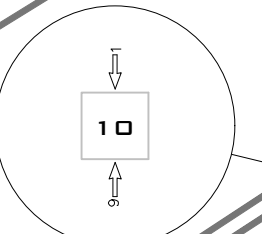
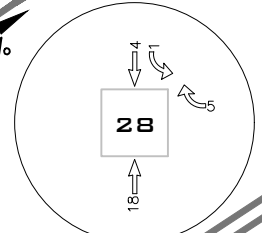
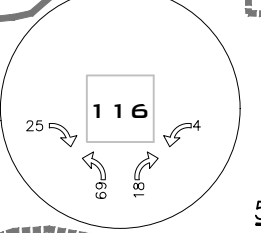
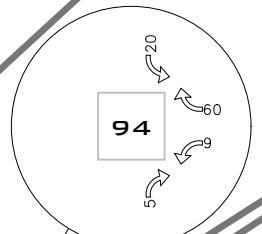
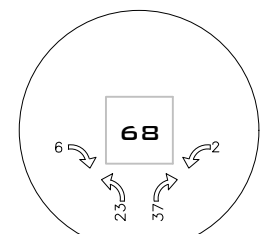
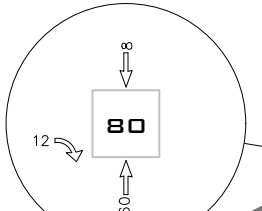


NOT TO SCALE

VOLUMES = TRIP GENERATION TABLE



SPOKANE COUNTY
CITY OF SPOKANE



TRIP GENERATION			
	TOTAL	IN	OUT
AM PEAK	124	32	92

LEGEND NOT TO SCALE

00% TRIP DISTRIBUTION PERCENTAGE

116 TRAFFIC VOLUME

IWCE
WHIPPLE CONSULTING ENGINEERS
21 S. PINES ROAD
SPOKANE VALLEY, WA 99206
PH: 509-893-2617 FAX: 509-926-0227

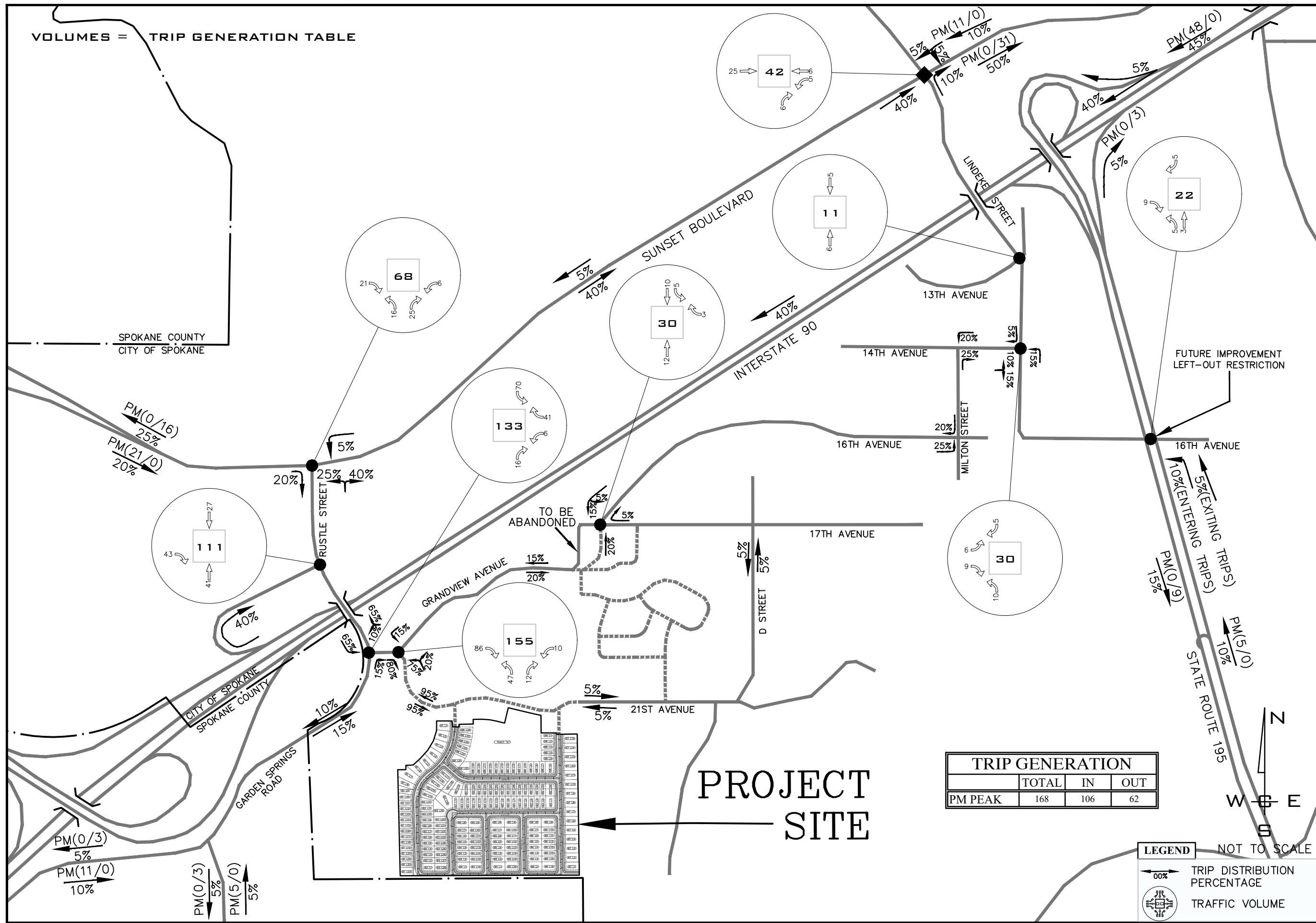
PROJ #: 21-3109
DATE: 04/11/22
DRAWN: KMK
APPROVED: TRW

**TRIP GENERATION AND DISTRIBUTION
BEARD ADDITION TO WEST BLUFF
CUMBERLAND LANE & 21ST AVENUE
SPOKANE, WASHINGTON**

AM TRIP DISTRIBUTION PERCENTAGE

FIGURE
5

VOLUMES = TRIP GENERATION TABLE



SPOKANE COUNTY
CITY OF SPOKANE

CITY OF SPOKANE
SPOKANE COUNTY

TRIP GENERATION			
	TOTAL	IN	OUT
PM PEAK	168	106	62

LEGEND NOT TO SCALE

TRIP DISTRIBUTION PERCENTAGE
 TRAFFIC VOLUME



PROJ #: 21-3109
 DATE: 04/11/22
 DRAWN: KMK
 APPROVED: TRW

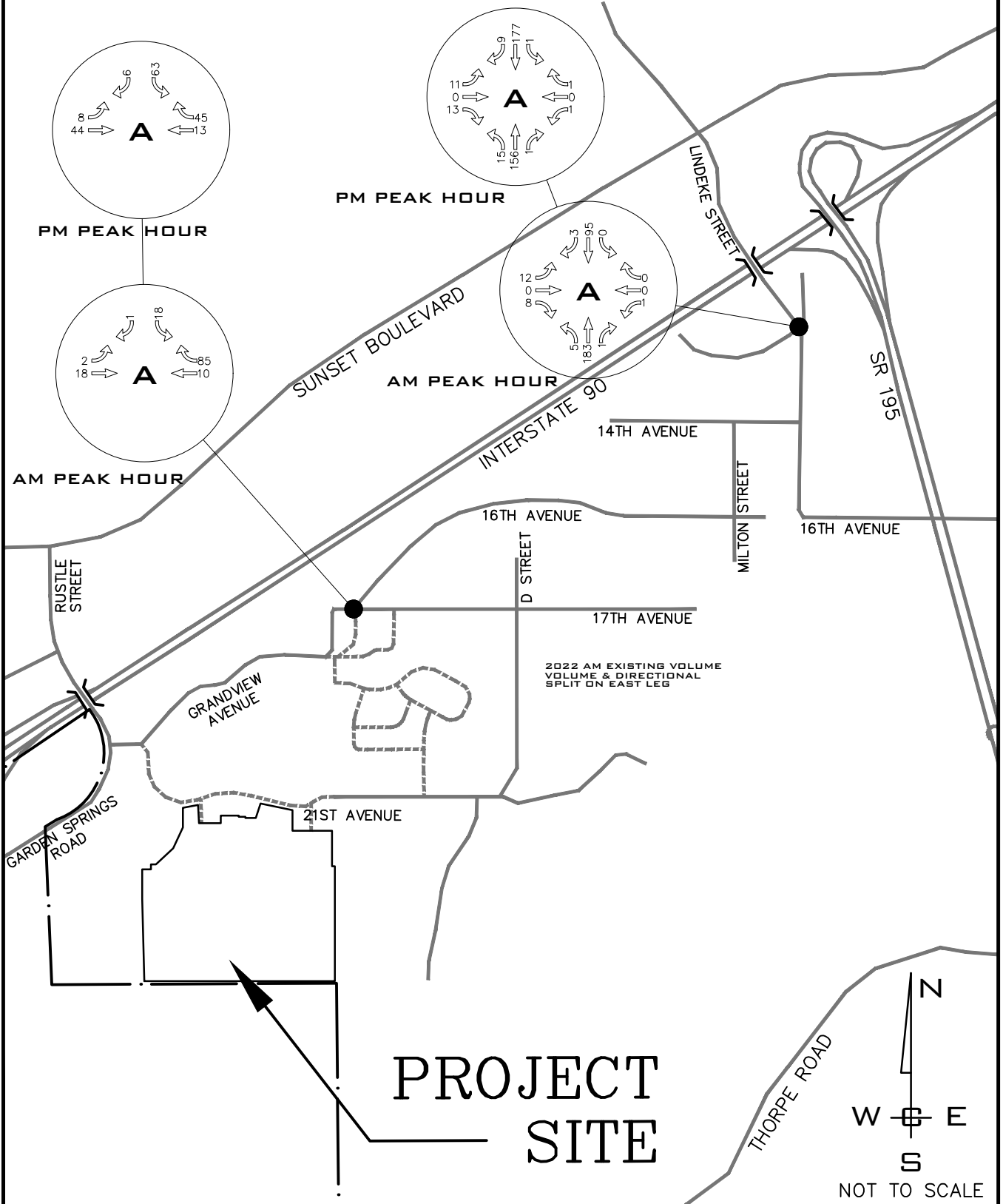
TRIP GENERATION AND DISTRIBUTION
BEARD ADDITION TO WEST BLUFF
 CUMBERLAND LANE & 21ST AVENUE
 SPOKANE, WASHINGTON

PM TRIP DISTRIBUTION PERCENTAGE

FIGURE

6

VOLUMES = 2022 AM/PM COUNTS GROWN BY BACKGROUND RATE



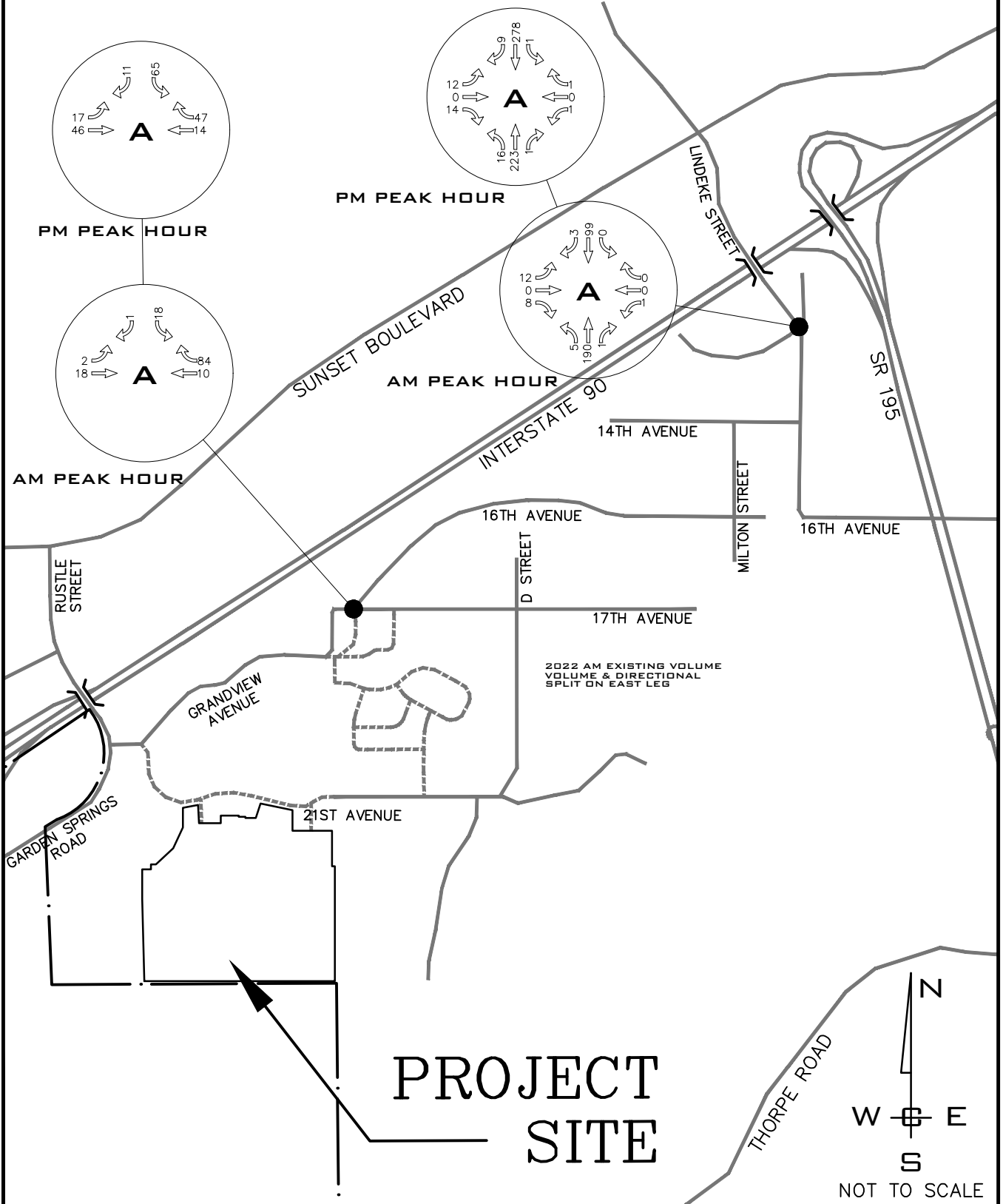
PROJ #: 21- 3109
 DATE: 01/06/23
 DRAWN: BNG
 APPROVED: TRW

**TRIP GENERATION & DISTRIBUTION
 BEARD ADDITION TO WEST BLUFF
 GUMBERLAND LANE & 21ST AVENUE
 SPOKANE, WASHINGTON**

FIGURE 7 2023 AM/PM EXISTING TRAFFIC VOLUME & LOS

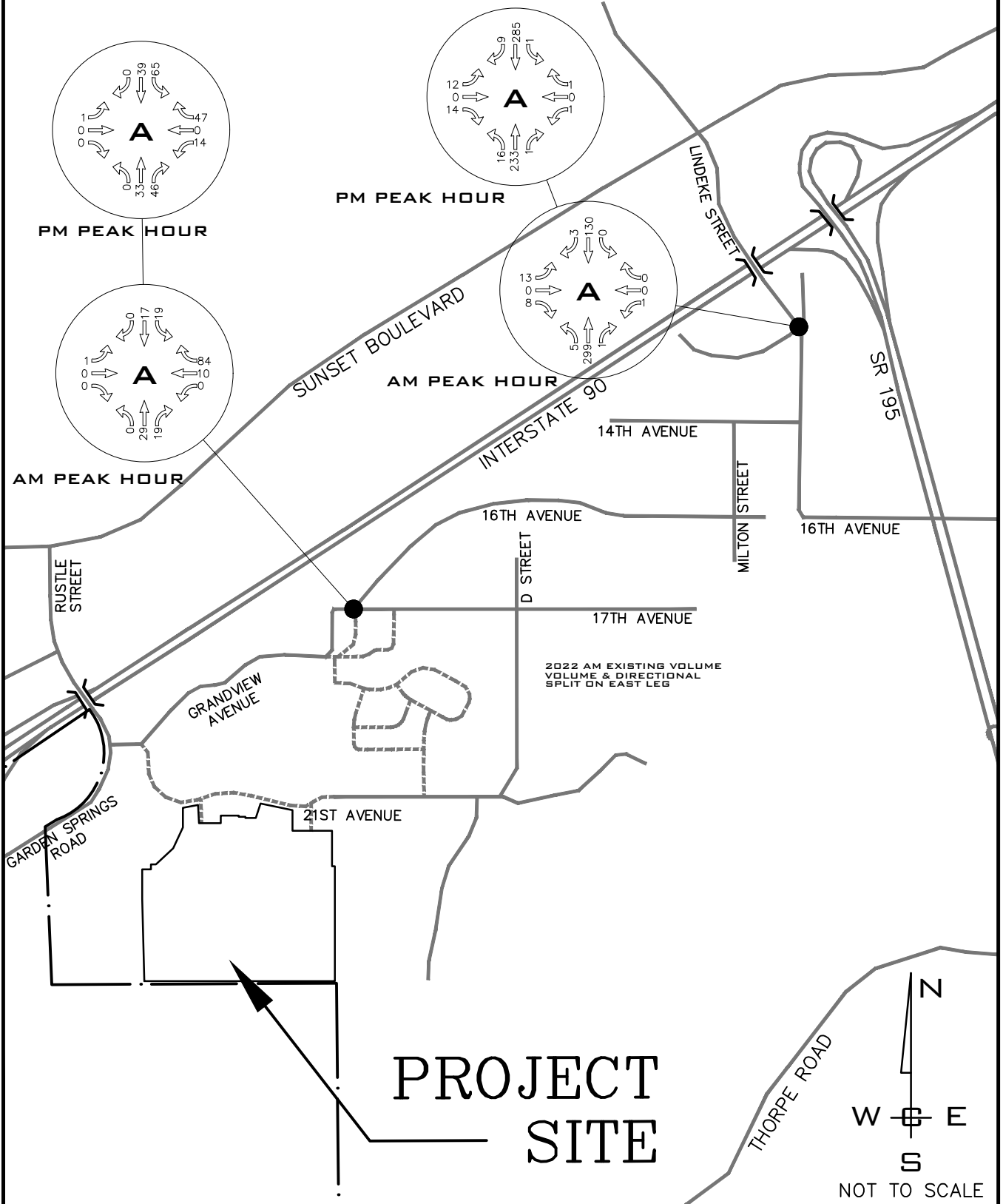
WCE
 WHIPPLE CONSULTING ENGINEERS
 CIVIL AND TRANSPORTATION ENGINEERING
 21 SOUTH PINES ROAD
 SPOKANE VALLEY, WASHINGTON 99206
 PH: 509-893-2617 FAX: 509-926-0227

VOLUMES = FIGURE 7* BACKGROUND RATE + BACKGROUND PROJECTS

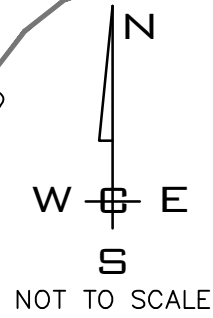


<p>PROJ #: 21- 3109 DATE: 01/06/23 DRAWN: BNG APPROVED: TRW</p>	<p>TRIP GENERATION & DISTRIBUTION BEARD ADDITION TO WEST BLUFF GUMBERLAND LANE & 21ST AVENUE SPOKANE, WASHINGTON</p>	<p>WCE WHIPPLE CONSULTING ENGINEERS CIVIL AND TRANSPORTATION ENGINEERING 21 SOUTH PINES ROAD SPOKANE VALLEY, WASHINGTON 99206 PH: 509-893-2617 FAX: 509-926-0227</p>
<p>FIGURE 8</p>	<p>2028 AM/PM W/O PROJ TRAFFIC VOLUME & LOS</p>	

VOLUMES = FIGURE 8 + FIGURE 5 & FIGURE 6



PROJECT SITE



PROJ #: 21- 3109
 DATE: 01/06/23
 DRAWN: BNG
 APPROVED: TRW

**TRIP GENERATION & DISTRIBUTION
 BEARD ADDITION TO WEST BLUFF
 GUMBERLAND LANE & 21ST AVENUE
 SPOKANE, WASHINGTON**

FIGURE 9 **2028 AM/PM W/ PROJ TRAFFIC VOLUME & LOS**

WCE
 WHIPPLE CONSULTING ENGINEERS
 CIVIL AND TRANSPORTATION ENGINEERING
 21 SOUTH PINES ROAD
 SPOKANE VALLEY, WASHINGTON 99206
 PH: 509-893-2617 FAX: 509-926-0227

INTERSECTION

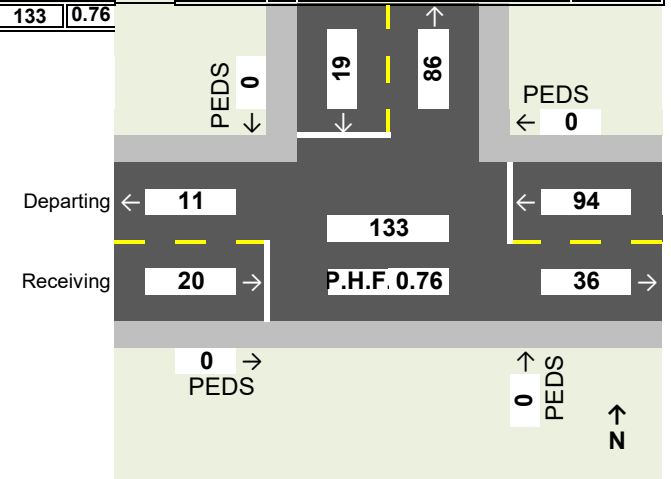
PROJECT: WCE Grandview Addition
 JOB NO. 22-64
 DATE OF COUNT: 5/11/2022
 17th Avenue & 16th Avenue

Counter Miovision
 Analyst BNG

APPROACH	MOVEMENT	AM PEAK HOURS												Approach					App.									
		7:15 AM				7:30 AM				7:45 AM				8:00 AM				Receiving			Departing							
		BK	PC	HV		BK	PC	HV		BK	PC	HV		BK	PC	HV	Mvmt	TOTAL HV		Veh	PHF	Percentage of: HV	Approach	Mvmt	Total	Percentage of: HV	Approach	
Eastbound	U-Turn	0	0	0		0	0	0		0	0	0		0	0	0		EBU	0	0		0.00%		EBU	0	0.00%	Eastbound	
	Left	0	0	0		0	0	0		0	2	0		0	0	0		EBL	0	2		0%	10.00%	SBR	1	0%		9.09%
	Through	0	3	0		0	3	1		0	6	0		0	5	0		EBT	1	18		6%	90.00%	WBT	10	0%		90.91%
	App. Total	0	3	0		0	3	1		0	8	0		0	5	0		Total	1	20	0.63	5%	100.00%	Total	11	0%		100.00%
	Pct HV	0%			25%			0%			0%																	
Westbound	U-Turn	0	0	0		0	0	0		0	0	0		0	0	0		WBU	0	0		0.00%		WBU	0	0.00%	Westbound	
	Through	0	5	0		0	2	0		0	1	0		0	2	0		WBT	0	10		0%	10.64%	EBT	18	6%		50.00%
	Right	0	14	0		0	28	0		0	16	1		0	25	0		WBR	1	84		1%	89.36%	SBL	18	0%		50.00%
	App. Total	0	19	0		0	30	0		0	17	1		0	27	0		Total	1	94	0.78	1%	100.00%	Total	36	3%		100.00%
	Pct HV	0%			0%			6%			0%																	
Southbound	U-Turn	0	0	0		0	0	0		0	0	0		0	0	0		SBU	0	0		0.00%		SBU	0	0.00%	Southbound	
	Left	0	2	0		0	2	0		0	3	0		0	11	0		SBL	0	18		0%	94.74%	EBL	2	0%		2.33%
	Right	0	0	0		0	0	0		0	0	0		0	1	0		SBR	0	1		0%	5.26%	WBR	84	1%		97.67%
	App. Total	0	2	0		0	2	0		0	3	0		0	12	0		Total	0	19	0.40	0%	100.00%	Total	86	1%		100.00%
	Pct HV	0%			0%			0%			0%																	
Total Class Volume		0	24	0		0	35	1		0	28	1		0	44	0		Total	2	133	0.76							
Total Interval Volume		24			36			29			44			133														
Intersection Pct Trucks		0%			3%			3%			0%			2%														

Pedestrian Volumes		7:15	7:30	7:45	8:00	Confl.
APPROACH	MOVEMENT					Ped TOTAL
Eastbound	Crosswalk	0	0	0	0	0
Westbound	Crosswalk	0	0	0	0	0
Northbound	Crosswalk	0	0	0	0	0
Southbound	Crosswalk	0	0	0	0	0
Total		0	0	0	0	0

Movement = Mvmt
 Pedestrian = Ped
 P.H.F. = Peak Hour Factor
 App. = Approach
 Pct = Percent



INTERSECTION

PROJECT: WCE Grandview Addition
JOB NO: 22-64
DATE OF COUNT: 5/11/2022

17th Avenue
&
16th Avenue

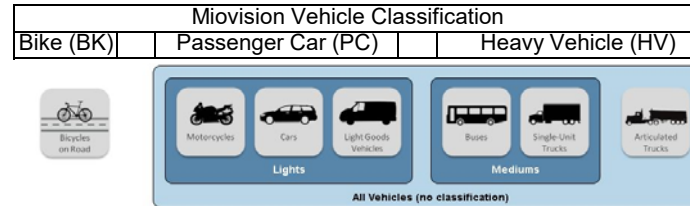


Counter Analyst
Miovision BNG

PM PEAK HOURS
15 Minute Period Beginning @

APPROACH	Movement	3:30 PM			3:45 PM			4:00 PM			4:15 PM			4:30 PM			4:45 PM			5:00 PM			5:15 PM			5:30 PM			5:45 PM			6:00 PM			6:15 PM				
		BK	PC	HV	BK	PC	HV	BK	PC	HV	BK	PC	HV	BK	PC	HV	BK	PC	HV	BK	PC	HV	BK	PC	HV	BK	PC	HV	BK	PC	HV	BK	PC	HV					
Eastbound	U-Turn	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					
	Left	0	5	1	0	1	0	0	2	0	0	0	0	0	2	0	0	4	0	0	1	0	0	1	0	0	2	0	0	0	0	2	0	0	2	0			
	Through	0	11	0	0	11	1	0	1	1	0	6	0	0	13	1	0	11	0	0	12	0	0	7	0	0	12	0	0	8	0	0	6	0	0	10	0		
	App. Total	0	16	1	0	12	1	0	3	1	0	6	0	0	15	1	0	15	0	0	13	0	0	8	0	0	14	0	0	8	0	0	8	0	0	12	0		
	Pct HV	6%			8%			25%			0%			6%			0%			0%			0%			0%			0%			0%			0%			0%	
Westbound	U-Turn	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			
	Through	0	1	0	0	3	0	0	1	0	0	3	0	0	2	0	0	5	0	0	3	1	0	2	0	0	5	0	0	0	0	2	0	0	1	0			
	Right	0	16	1	0	11	0	0	9	0	0	10	0	0	13	0	0	10	0	0	16	0	0	6	0	0	8	1	0	8	0	0	10	0	0	8	0		
	App. Total	0	17	1	0	14	0	0	10	0	0	13	0	0	15	0	0	15	0	0	19	1	0	8	0	0	13	1	0	8	0	0	12	0	0	9	0		
	Pct HV	6%			0%			0%			0%			0%			0%			5%			0%			7%			0%			0%			0%			0%	
Southbound	U-Turn	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			
	Left	0	10	2	0	15	0	0	12	0	0	8	0	0	17	0	0	15	0	0	12	0	0	18	0	0	17	0	0	4	0	0	7	0	0	6	0		
	Right	0	0	1	0	0	0	0	1	0	0	0	0	0	1	0	0	1	0	0	3	0	0	1	0	0	0	1	0	2	0	0	1	0	0	2	0		
	App. Total	0	10	3	0	15	0	0	13	0	0	8	0	0	18	0	0	16	0	0	15	0	0	19	0	0	17	1	0	6	0	0	8	0	0	8	0		
	Pct HV	23%			0%			0%			0%			0%			0%			0%			0%			0%			6%			0%			0%			0%	
Total Class Volume		0	43	5	0	41	1	0	26	1	0	27	0	0	48	1	0	46	0	0	47	1	0	35	0	0	44	2	0	22	0	0	28	0	0	29	0		
Total Interval Volume		48			42			27			27			49			46			48			35			46			22			28			29				
Intersection Pct HV		10%			2%			4%			0%			2%			0%			2%			0%			4%			0%			0%			0%				

Pedestrian Volumes		15 Minute Period Beginning @											
APPROACH	Movement	3:30	3:45	4:00	4:15	4:30	4:45	5:00	5:15	5:30	5:45	6:00	6:15
Eastbound	Crosswalk	0	0	0	0	0	0	0	0	0	0	0	0
Westbound	Crosswalk	0	0	0	0	0	0	0	0	0	0	0	0
Northbound	Crosswalk	0	0	0	0	0	0	0	0	0	0	0	0
Southbound	Crosswalk	0	0	0	0	0	0	0	0	0	0	0	0
Total		0	0	0	0	0	0	0	0	0	0	0	0



Intersection Total One Hour Volumes	Total	Pct HV
3:30 PM	144	4.9%
3:45 PM	145	2.1%
4:00 PM	149	1.3%
4:15 PM	170	1.2%
4:30 PM	178	1.1%
4:45 PM	175	1.7%
5:00 PM	151	2.0%
5:15 PM	131	1.5%
5:30 PM	125	1.6%

App.= Approach
Pct= Percent

INTERSECTION

PROJECT: WCE Grandview Addition 17th Avenue & 16th Avenue
 JOB NO. 22-64
 DATE OF COUNT: 5/11/2022

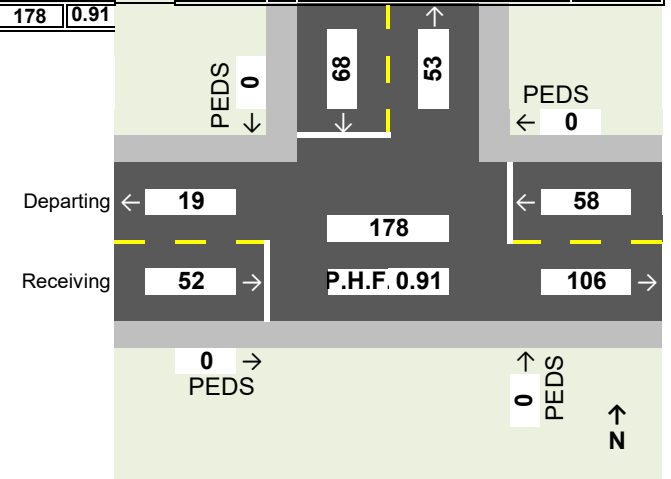
Counter Miovision
 Analyst BNG

APPROACH	MOVEMENT	PM PEAK HOURS												Receiving					Departing				App.	
		4:30 PM			4:45 PM			5:00 PM			5:15 PM			Mvmt	TOTAL		PHF	Percentage of:		Mvmt	Total	Percentage of:		
		BK	PC	HV	BK	PC	HV	BK	PC	HV	BK	PC	HV		HV	Veh		HV	Approach			HV		Approach
Eastbound	U-Turn	0	0	0	0	0	0	0	0	0	0	0	0	EBU	0	0			0.00%	EBU	0		0.00%	
	Left	0	2	0	0	4	0	0	1	0	0	1	0	EBL	0	8		0%	15.38%	SBR	6	0%	31.58%	
	Through	0	13	1	0	11	0	0	12	0	0	7	0	EBT	1	44		2%	84.62%	WBT	13	8%	68.42%	
	App. Total	0	15	1	0	15	0	0	13	0	0	8	0	Total	1	52	0.81	2%	100.00%	Total	19	5%	100.00%	
	Pct HV	6%			0%			0%			0%													
Westbound	U-Turn	0	0	0	0	0	0	0	0	0	0	0	0	WBU	0	0			0.00%	WBU	0		0.00%	
	Through	0	2	0	0	5	0	0	3	1	0	2	0	WBT	1	13		8%	22.41%	EBT	44	2%	41.51%	
	Right	0	13	0	0	10	0	0	16	0	0	6	0	WBR	0	45		0%	77.59%	SBL	62	0%	58.49%	
	App. Total	0	15	0	0	15	0	0	19	1	0	8	0	Total	1	58	0.73	2%	100.00%	Total	106	1%	100.00%	
	Pct HV	0%			0%			5%			0%													
Southbound	U-Turn	0	0	0	0	0	0	0	0	0	0	0	0	SBU	0	0			0.00%	SBU	0		0.00%	
	Left	0	17	0	0	15	0	0	12	0	0	18	0	SBL	0	62		0%	91.18%	EBL	8	0%	15.09%	
	Right	0	1	0	0	1	0	0	3	0	0	1	0	SBR	0	6		0%	8.82%	WBR	45	0%	84.91%	
	App. Total	0	18	0	0	16	0	0	15	0	0	19	0	Total	0	68	0.89	0%	100.00%	Total	53	0%	100.00%	
	Pct HV	0%			0%			0%			0%													
Total Class Volume		0	48	1	0	46	0	0	47	1	0	35	0	Total	2	178	0.91							
Total Interval Volume		49			46			48			35			178										
Intersection Pct Trucks		2%			0%			2%			0%			1%										

Pedestrian Volumes		4:30	4:45	5:00	5:15	Confl.
APPROACH	MOVEMENT					Ped TOTAL
Eastbound	Crosswalk	0	0	0	0	0
Westbound	Crosswalk	0	0	0	0	0
Northbound	Crosswalk	0	0	0	0	0
Southbound	Crosswalk	0	0	0	0	0
Total		0	0	0	0	0



Movement = Mvmt
 Pedestrian = Ped
 P.H.F. = Peak Hour Factor
 App. = Approach
 Pct = Percent



INTERSECTION

PROJECT: WCE Grandview Addition
JOB NO: 22-64
DATE OF COUNT: 5/11/2022
Counter Analyst
Miovision BNG

13th Avenue
&
Lindeke Street

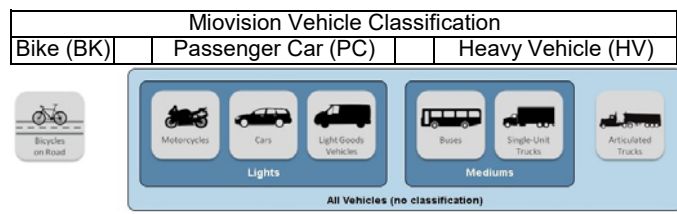
AM PEAK HOURS

15 Minute Period Beginning @



APPROACH	Movement	6:30 AM			6:45 AM			7:00 AM			7:15 AM			7:30 AM			7:45 AM			8:00 AM			8:15 AM			8:30 AM			8:45 AM			9:00 AM			9:15 AM					
Type		BK	PC	HV	BK	PC	HV	BK	PC	HV	BK	PC	HV	BK	PC	HV	BK	PC	HV	BK	PC	HV	BK	PC	HV	BK	PC	HV	BK	PC	HV	BK	PC	HV	BK	PC	HV	BK	PC	HV
Eastbound	U-Turn	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
	Left	0	1	0	0	2	0	0	2	0	0	4	0	0	1	0	0	3	0	0	6	0	0	1	1	0	2	0	0	1	0	0	2	0	0	1	0			
	Through	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			
	Right	0	3	0	0	1	0	0	3	0	0	4	0	0	2	0	0	2	0	0	2	0	0	2	0	0	2	0	0	3	0	0	6	0	0	1	0			
	App. Total	0	4	0	0	3	0	0	5	0	0	8	0	0	3	0	0	5	0	0	8	0	0	3	1	0	4	0	0	4	0	0	8	0	0	2	0			
Pct HV		0%			0%			0%			0%			0%			0%			25%			0%			0%			0%			0%								
Westbound	U-Turn	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
	Left	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			
	Through	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			
	Right	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			
	App. Total	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	1	0	0	0	0			
Pct HV																	0%									0%														
Northbound	U-Turn	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
	Left	0	0	0	0	0	0	0	0	0	0	1	0	0	1	0	0	1	0	0	1	0	0	2	0	0	2	0	0	0	0	0	0	0	0	0	0			
	Through	0	18	0	0	16	0	0	29	1	0	39	0	0	60	0	0	40	1	0	40	0	0	40	0	0	24	0	0	24	1	0	24	0	0	32	0			
	Right	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	1	0	0	0	0	0	2	0	0	0	0			
	App. Total	0	18	0	0	16	0	0	29	1	0	40	0	0	61	0	0	41	1	0	42	0	0	42	0	0	27	0	0	24	1	0	26	0	0	32	0			
Pct HV		0%			0%			3%			0%			0%			2%			0%			0%			0%			4%			0%								
Southbound	U-Turn	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			
	Left	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			
	Through	0	9	0	0	9	1	0	9	0	0	14	1	0	17	1	0	32	0	0	20	1	0	23	0	0	24	1	0	24	1	0	15	0	0	21	0			
	Right	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	2	0	0	1	0	0	2	0	0	0	0	0	2	0	0	1	0			
	App. Total	0	9	0	0	9	1	0	9	0	0	15	1	0	17	1	0	32	0	0	22	1	0	24	0	0	26	1	0	24	1	0	18	0	0	22	0			
Pct HV		0%			10%			0%			6%			6%			0%			4%			0%			4%			4%			0%								
Total Class Volume		0	31	0	0	28	1	0	43	1	0	63	1	0	81	1	0	78	1	0	73	1	0	69	1	0	57	1	0	52	2	0	53	0	0	56	0			
Total Interval Volume		31			29			44			64			82			79			74			70			58			54			53			56					
Intersection Pct HV		0%			3%			2%			2%			1%			1%			1%			1%			2%			4%			0%			0%					

Pedestrian Volumes		15 Minute Period Beginning @											
APPROACH	Movement	6:30	6:45	7:00	7:15	7:30	7:45	8:00	8:15	8:30	8:45	9:00	9:15
Eastbound	Crosswalk	0	0	0	0	0	0	0	0	0	0	0	0
Westbound	Crosswalk	0	0	0	0	1	0	0	0	0	0	0	0
Northbound	Crosswalk	0	0	0	0	0	0	0	0	0	0	0	0
Southbound	Crosswalk	0	0	0	0	0	0	0	0	0	0	0	0
Total		0	0	0	0	1	0	0	0	0	0	0	0



Intersection Total One Hour Volumes	Pct HV
6:30 AM	168 1.8%
6:45 AM	219 1.8%
7:00 AM	269 1.5%
7:15 AM	299 1.3%
7:30 AM	305 1.3%
7:45 AM	281 1.4%
8:00 AM	256 2.0%
8:15 AM	235 1.7%
8:30 AM	221 1.4%

App.= Approach
Pct= Percent

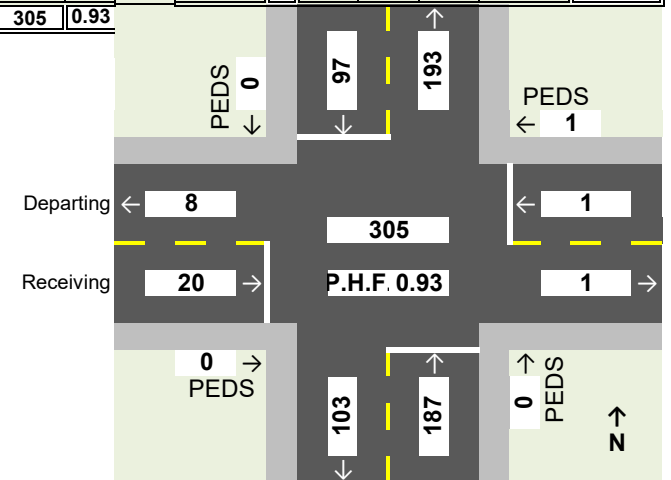
INTERSECTION

PROJECT: WCE Grandview Addition 13th Avenue & Lindeke Street
 JOB NO. 22-64
 DATE OF COUNT: 5/11/2022

Counter Analyst
 Miovision BNG

APPROACH	MOVEMENT	AM PEAK HOURS												Approach					App.					
		7:30 AM			7:45 AM			8:00 AM			8:15 AM			Receiving			Departing							
		BK	PC	HV	BK	PC	HV	BK	PC	HV	BK	PC	HV	Mvmt	TOTAL HV	Veh	PHF	Percentage of: HV		Approach	Mvmt	Total	Percentage of: HV	Approach
Eastbound	U-Turn	0	0	0	0	0	0	0	0	0	0	0	0	EBU	0	0			0.00%	Eastbound	EBU	0		0.00%
	Left	0	1	0	0	3	0	0	6	0	0	1	1	EBL	1	12		8%	60.00%		NBL	5	0%	62.50%
	Through	0	0	0	0	0	0	0	0	0	0	0	0	EBT	0	0			0.00%		WBT	0		0.00%
	Right	0	2	0	0	2	0	0	2	0	0	2	0	EBR	0	8		0%	40.00%		SBR	3	0%	37.50%
	App. Total	0	3	0	0	5	0	0	8	0	0	3	1	Total	1	20	0.63	5%	100.00%		Total	8	0%	100.00%
	Pct HV	0%			0%			0%			25%													
Westbound	U-Turn	0	0	0	0	0	0	0	0	0	0	0	0	WBU	0	0			0.00%	Westbound	WBU	0		0.00%
	Left	0	0	0	0	0	0	0	1	0	0	0	0	WBL	0	1		0%	100.00%		SBL	0		0.00%
	Through	0	0	0	0	0	0	0	0	0	0	0	0	WBT	0	0			0.00%		EBT	0		0.00%
	Right	0	0	0	0	0	0	0	0	0	0	0	0	WBR	0	0			0.00%		NBR	1	0%	100.00%
	App. Total	0	0	0	0	0	0	0	1	0	0	0	0	Total	0	1	0.25	0%	100.00%		Total	1	0%	100.00%
	Pct HV							0%																
Northbound	U-Turn	0	0	0	0	0	0	0	0	0	0	0	0	NBU	0	0			0.00%	Northbound	NBU	0		0.00%
	Left	0	1	0	0	1	0	0	1	0	0	2	0	NBL	0	5		0%	2.67%		WBL	1	0%	0.97%
	Through	0	60	0	0	40	1	0	40	0	0	40	0	NBT	1	181		1%	96.79%		SBT	94	2%	91.26%
	Right	0	0	0	0	0	0	0	1	0	0	0	0	NBR	0	1		0%	0.53%		EBR	8	0%	7.77%
	App. Total	0	61	0	0	41	1	0	42	0	0	42	0	Total	1	187	0.77	1%	100.00%		Total	103	2%	100.00%
	Pct HV	0%			2%			0%			0%													
Southbound	U-Turn	0	0	0	0	0	0	0	0	0	0	0	0	SBU	0	0			0.00%	Southbound	SBU	0		0.00%
	Left	0	0	0	0	0	0	0	0	0	0	0	0	SBL	0	0			0.00%		EBL	12	8%	6.22%
	Through	0	17	1	0	32	0	0	20	1	0	23	0	SBT	2	94		2%	96.91%		NBT	181	1%	93.78%
	Right	0	0	0	0	0	0	0	2	0	0	1	0	SBR	0	3		0%	3.09%		WBR	0		0.00%
	App. Total	0	17	1	0	32	0	0	22	1	0	24	0	Total	2	97	0.76	2%	100.00%		Total	193	1%	100.00%
	Pct HV	6%			0%			4%			0%													
Total Class Volume		0	81	1	0	78	1	0	73	1	0	69	1	Total	4	305	0.93							
Total Interval Volume		82			79			74			70			305										
Intersection Pct Trucks		1%			1%			1%			1%			1%										

Pedestrian Volumes		7:30	7:45	8:00	8:15	Confli. Ped TOTAL
APPROACH	MOVEMENT					
Eastbound	Crosswalk	0	0	0	0	0
Westbound	Crosswalk	1	0	0	0	1
Northbound	Crosswalk	0	0	0	0	0
Southbound	Crosswalk	0	0	0	0	0
Total		0	1	0	0	0



Movement = Mvmt
 Pedestrian = Ped
 P.H.F.= Peak Hour Factor
 App.= Approach
 Pct= Percent

INTERSECTION

PROJECT: WCE Grandview Addition
JOB NO. 22-64
DATE OF COUNT: 5/11/2022

13th Avenue
&
Lindeke Street



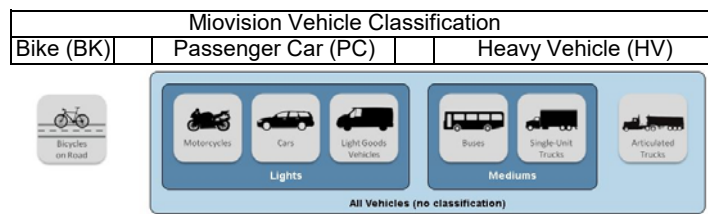
Counter Analyst
Miovision BNG

PM PEAK HOURS

15 Minute Period Beginning @

APPROACH	Movement	3:30 PM			3:45 PM			4:00 PM			4:15 PM			4:30 PM			4:45 PM			5:00 PM			5:15 PM			5:30 PM			5:45 PM			6:00 PM			6:15 PM					
Type		BK	PC	HV	BK	PC	HV	BK	PC	HV	BK	PC	HV	BK	PC	HV	BK	PC	HV	BK	PC	HV	BK	PC	HV	BK	PC	HV	BK	PC	HV	BK	PC	HV	BK	PC	HV	BK	PC	HV
Eastbound	U-Turn	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
	Left	0	6	0	0	1	0	0	4	0	0	3	0	0	3	0	0	3	0	0	4	0	0	1	0	0	2	0	0	2	0	0	1	0	0	2	0			
	Through	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			
	Right	0	2	1	0	2	0	0	1	0	0	3	0	0	2	0	0	4	0	0	3	0	0	3	0	0	0	0	0	2	0	0	3	0	0	4	0			
	App. Total	0	8	1	0	3	0	0	5	0	0	6	0	0	5	0	0	7	0	0	8	0	0	4	0	0	2	0	0	4	0	0	4	0	0	6	0			
Pct HV		11%			0%			0%			0%			0%			0%			0%			0%			0%			0%			0%								
Westbound	U-Turn	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
	Left	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	2	0	0	0	0	0	0	0	0	0	0			
	Through	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			
	Right	0	1	0	0	0	0	0	1	0	0	2	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0			
	App. Total	0	1	0	0	0	0	0	1	0	0	2	0	0	1	0	0	0	0	0	1	0	0	0	0	0	2	0	0	0	0	0	2	0	0	0	0			
Pct HV		0%			0%			0%			0%			0%			0%			0%			0%			0%														
Northbound	U-Turn	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
	Left	0	1	0	0	6	0	0	7	0	0	7	0	0	1	0	0	2	0	0	7	0	0	5	0	0	4	0	0	1	0	0	1	0	0	0	0			
	Through	0	26	1	0	30	1	0	36	1	0	31	0	0	33	0	0	39	1	0	40	0	0	41	0	0	30	0	0	21	0	0	26	0	0	23	0			
	Right	0	1	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0			
	App. Total	0	28	1	0	36	1	0	44	1	0	38	0	0	34	0	0	41	1	0	48	0	0	46	0	0	34	0	0	23	0	0	27	0	0	23	0			
Pct HV		3%			3%			2%			0%			0%			2%			0%			0%			0%			0%											
Southbound	U-Turn	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
	Left	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1	0	0	0	0	0	2	0	0	0	0			
	Through	0	44	0	0	40	1	0	44	1	0	43	1	0	46	0	0	33	0	0	45	0	0	51	0	0	26	0	0	29	0	0	23	0	0	29	0			
	Right	0	1	0	0	4	0	0	3	0	0	2	0	0	1	0	0	2	0	0	5	0	0	1	0	0	1	0	0	2	0	0	0	0	0	2	0			
	App. Total	0	45	0	0	44	1	0	47	1	0	47	1	0	47	0	0	35	0	0	51	0	0	52	0	0	28	0	0	31	0	0	25	0	0	31	0			
Pct HV		0%			2%			2%			2%			0%			0%			0%			0%			0%			0%											
Total Class Volume		0	82	2	0	83	2	0	97	2	0	93	1	0	87	0	0	83	1	0	108	0	0	102	0	0	66	0	0	58	0	0	58	0	0	60	0			
Total Interval Volume		84			85			99			94			87			84			108			102			66			58			58			60					
Intersection Pct HV		2%			2%			2%			1%			0%			1%			0%			0%			0%			0%			0%								

Pedestrian Volumes		15 Minute Period Beginning @											
APPROACH	Movement	3:30	3:45	4:00	4:15	4:30	4:45	5:00	5:15	5:30	5:45	6:00	6:15
Eastbound	Crosswalk	0	0	0	0	1	1	0	0	0	0	0	0
Westbound	Crosswalk	0	0	0	0	0	0	0	0	0	0	0	0
Northbound	Crosswalk	0	0	0	0	0	0	0	1	0	0	0	0
Southbound	Crosswalk	1	0	0	0	0	0	0	0	0	0	2	0
Total		1	0	0	0	1	1	0	1	0	0	2	0



Intersection Total One Hour Volumes	Pct HV
3:30 PM	362 1.9%
3:45 PM	365 1.4%
4:00 PM	364 1.1%
4:15 PM	373 0.5%
4:30 PM	381 0.3%
4:45 PM	360 0.3%
5:00 PM	334 0.0%
5:15 PM	284 0.0%
5:30 PM	242 0.0%

App.= Approach
Pct= Percent

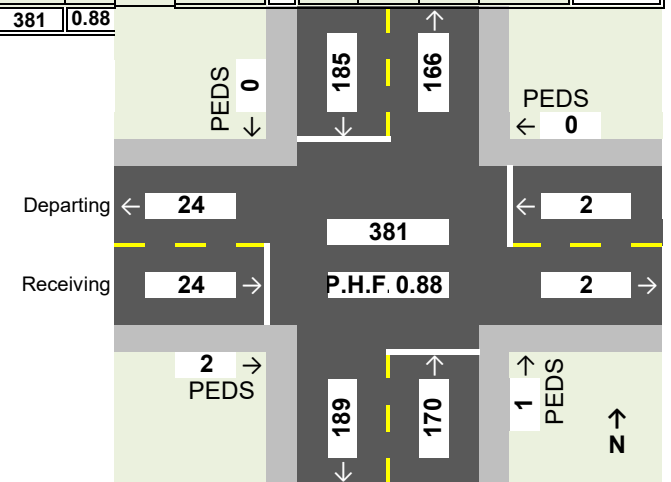
INTERSECTION

PROJECT: WCE Grandview Addition 13th Avenue & Lindeke Street
 JOB NO. 22-64
 DATE OF COUNT: 5/11/2022

Counter Analyst
 Miovision BNG

APPROACH	MOVEMENT	PM PEAK HOURS												Approach					App.						
		4:30 PM				4:45 PM				5:00 PM				5:15 PM				Receiving			Departing				
		BK	PC	HV		BK	PC	HV		BK	PC	HV		BK	PC	HV		Mvmt		TOTAL HV	Veh	PHF	Percentage of: HV	Approach	Mvmt
Eastbound	U-Turn	0	0	0		0	0	0		0	0	0		0	0	0		EBU	0	0			0.00%	Eastbound	
	Left	0	3	0		0	3	0		0	4	0		0	1	0		EBL	0	11		0%	45.83%		
	Through	0	0	0		0	0	0		0	0	0		0	0	0		EBT	0	0			0.00%		
	Right	0	2	0		0	4	0		0	4	0		0	3	0		EBR	0	13		0%	54.17%		
	App. Total	0	5	0		0	7	0		0	8	0		0	4	0		Total	0	24	0.75	0%	100.00%		
	Pct HV	0%				0%				0%				0%											
Westbound	U-Turn	0	0	0		0	0	0		0	0	0		0	0	0		WBU	0	0			0.00%	Westbound	
	Left	0	1	0		0	0	0		0	0	0		0	0	0		WBL	0	1		0%	50.00%		
	Through	0	0	0		0	0	0		0	0	0		0	0	0		WBT	0	0			0.00%		
	Right	0	0	0		0	0	0		0	1	0		0	0	0		WBR	0	1		0%	50.00%		
	App. Total	0	1	0		0	0	0		0	1	0		0	0	0		Total	0	2	0.50	0%	100.00%		
	Pct HV	0%								0%															
Northbound	U-Turn	0	0	0		0	0	0		0	0	0		0	0	0		NBU	0	0			0.00%	Northbound	
	Left	0	1	0		0	2	0		0	7	0		0	5	0		NBL	0	15		0%	8.82%		
	Through	0	33	0		0	39	1		0	40	0		0	41	0		NBT	1	154		1%	90.59%		
	Right	0	0	0		0	0	0		0	1	0		0	0	0		NBR	0	1		0%	0.59%		
	App. Total	0	34	0		0	41	1		0	48	0		0	46	0		Total	1	170	0.89	1%	100.00%		
	Pct HV	0%				2%				0%				0%											
Southbound	U-Turn	0	0	0		0	0	0		0	0	0		0	0	0		SBU	0	0			0.00%	Southbound	
	Left	0	0	0		0	0	0		0	1	0		0	0	0		SBL	0	1		0%	0.54%		
	Through	0	46	0		0	33	0		0	45	0		0	51	0		SBT	0	175		0%	94.59%		
	Right	0	1	0		0	2	0		0	5	0		0	1	0		SBR	0	9		0%	4.86%		
	App. Total	0	47	0		0	35	0		0	51	0		0	52	0		Total	0	185	0.89	0%	100.00%		
	Pct HV	0%				0%				0%				0%											
Total Class Volume		0	87	0		0	83	1		0	108	0		0	102	0		Total	1	381	0.88				
Total Interval Volume		87				84				108				102				381							
Intersection Pct Trucks		0%				1%				0%				0%				0%							

Pedestrian Volumes		4:30	4:45	5:00	5:15	Confli.
APPROACH	MOVEMENT					Ped TOTAL
Eastbound	Crosswalk	1	1	0	0	2
Westbound	Crosswalk	0	0	0	0	0
Northbound	Crosswalk	0	0	0	1	1
Southbound	Crosswalk	0	0	0	0	0
Total		1	1	0	1	



Movement = Mvmt
 Pedestrian = Ped
 P.H.F. = Peak Hour Factor
 App. = Approach
 Pct = Percent




Original Background Projects

INTERSECTION Grandview Avenue/16th Avenue & 17th Avenue
AM

Background

Trips	Eagle	The Summ	Tangle Ridge	Wheatland	Latah Glen	Marshall	The Greens at M	Qualchan View	Crystal Ridge Add.	Canyon Bluffs PUD	Grandview Add	Total
EB LT												0
EB THRU												0
EB RT												0
												0
WB LT												0
WB THRU												0
WB RT												0
												0
NB LT												0
NB THRU										3	24	27
NB RT												0
												0
SB LT												0
SB THRU										8	8	16
SB RT												0

Intersection	
Intersection Delay, s/veh	7
Intersection LOS	A

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	2	18	10	85	18	1
Future Vol, veh/h	2	18	10	85	18	1
Peak Hour Factor	0.76	0.76	0.76	0.76	0.76	0.76
Heavy Vehicles, %	0	6	0	1	0	0
Mvmt Flow	3	24	13	112	24	1
Number of Lanes	0	1	1	0	1	0

Approach	EB	WB	SB
Opposing Approach	WB	EB	
Opposing Lanes	1	1	0
Conflicting Approach Left	SB		WB
Conflicting Lanes Left	1	0	1
Conflicting Approach Right		SB	EB
Conflicting Lanes Right	0	1	1
HCM Control Delay	7.2	6.9	7.5
HCM LOS	A	A	A

Lane	EBLn1	WBLn1	SBLn1
Vol Left, %	10%	0%	95%
Vol Thru, %	90%	11%	0%
Vol Right, %	0%	89%	5%
Sign Control	Stop	Stop	Stop
Traffic Vol by Lane	20	95	19
LT Vol	2	0	18
Through Vol	18	10	0
RT Vol	0	85	1
Lane Flow Rate	26	125	25
Geometry Grp	1	1	1
Degree of Util (X)	0.03	0.119	0.03
Departure Headway (Hd)	4.057	3.426	4.318
Convergence, Y/N	Yes	Yes	Yes
Cap	883	1046	829
Service Time	2.08	1.447	2.347
HCM Lane V/C Ratio	0.029	0.12	0.03
HCM Control Delay	7.2	6.9	7.5
HCM Lane LOS	A	A	A
HCM 95th-tile Q	0.1	0.4	0.1

Intersection	
Intersection Delay, s/veh	8
Intersection LOS	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	12	0	8	1	0	0	5	183	1	0	95	3
Future Vol, veh/h	12	0	8	1	0	0	5	183	1	0	95	3
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Heavy Vehicles, %	8	0	0	0	0	0	0	1	0	0	2	0
Mvmt Flow	13	0	9	1	0	0	5	197	1	0	102	3
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay	7.7	7.8	8.2	7.7
HCM LOS	A	A	A	A

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	3%	60%	100%	0%
Vol Thru, %	97%	0%	0%	97%
Vol Right, %	1%	40%	0%	3%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	189	20	1	98
LT Vol	5	12	1	0
Through Vol	183	0	0	95
RT Vol	1	8	0	3
Lane Flow Rate	203	22	1	105
Geometry Grp	1	1	1	1
Degree of Util (X)	0.227	0.027	0.001	0.12
Departure Headway (Hd)	4.02	4.578	4.79	4.107
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	890	787	752	866
Service Time	2.058	2.578	2.79	2.162
HCM Lane V/C Ratio	0.228	0.028	0.001	0.121
HCM Control Delay	8.2	7.7	7.8	7.7
HCM Lane LOS	A	A	A	A
HCM 95th-tile Q	0.9	0.1	0	0.4

Intersection	
Intersection Delay, s/veh	7.4
Intersection LOS	A

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	8	44	13	45	63	6
Future Vol, veh/h	8	44	13	45	63	6
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91
Heavy Vehicles, %	0	2	8	0	0	0
Mvmt Flow	9	48	14	49	69	7
Number of Lanes	0	1	1	0	1	0

Approach	EB	WB	SB
Opposing Approach	WB	EB	
Opposing Lanes	1	1	0
Conflicting Approach Left	SB		WB
Conflicting Lanes Left	1	0	1
Conflicting Approach Right		SB	EB
Conflicting Lanes Right	0	1	1
HCM Control Delay	7.5	7.1	7.7
HCM LOS	A	A	A

Lane	EBLn1	WBLn1	SBLn1
Vol Left, %	15%	0%	91%
Vol Thru, %	85%	22%	0%
Vol Right, %	0%	78%	9%
Sign Control	Stop	Stop	Stop
Traffic Vol by Lane	52	58	69
LT Vol	8	0	63
Through Vol	44	13	0
RT Vol	0	45	6
Lane Flow Rate	57	64	76
Geometry Grp	1	1	1
Degree of Util (X)	0.065	0.066	0.089
Departure Headway (Hd)	4.112	3.746	4.24
Convergence, Y/N	Yes	Yes	Yes
Cap	865	948	842
Service Time	2.164	1.802	2.284
HCM Lane V/C Ratio	0.066	0.068	0.09
HCM Control Delay	7.5	7.1	7.7
HCM Lane LOS	A	A	A
HCM 95th-tile Q	0.2	0.2	0.3

Intersection	
Intersection Delay, s/veh	8.4
Intersection LOS	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	11	0	13	1	0	1	15	156	1	1	177	9
Future Vol, veh/h	11	0	13	1	0	1	15	156	1	1	177	9
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Heavy Vehicles, %	0	0	0	0	0	0	0	1	0	0	0	0
Mvmt Flow	13	0	15	1	0	1	17	177	1	1	201	10
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay	7.7	7.6	8.4	8.4
HCM LOS	A	A	A	A

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	9%	46%	50%	1%
Vol Thru, %	91%	0%	0%	95%
Vol Right, %	1%	54%	50%	5%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	172	24	2	187
LT Vol	15	11	1	1
Through Vol	156	0	0	177
RT Vol	1	13	1	9
Lane Flow Rate	195	27	2	212
Geometry Grp	1	1	1	1
Degree of Util (X)	0.224	0.034	0.003	0.24
Departure Headway (Hd)	4.124	4.54	4.607	4.07
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	862	793	781	873
Service Time	2.19	2.54	2.608	2.135
HCM Lane V/C Ratio	0.226	0.034	0.003	0.243
HCM Control Delay	8.4	7.7	7.6	8.4
HCM Lane LOS	A	A	A	A
HCM 95th-tile Q	0.9	0.1	0	0.9

Intersection												
Int Delay, s/veh	5.3											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	0	0	0	11	0	95	0	49	19	21	21	0
Future Vol, veh/h	0	0	0	11	0	95	0	49	19	21	21	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	76	76	76	76	76	76	76	76	76	76	76	76
Heavy Vehicles, %	0	0	0	0	0	1	0	0	6	0	0	0
Mvmt Flow	0	0	0	14	0	125	0	64	25	28	28	0

Major/Minor	Minor2		Minor1			Major1		Major2				
Conflicting Flow All	223	173	28	161	161	77	28	0	0	89	0	0
Stage 1	84	84	-	77	77	-	-	-	-	-	-	-
Stage 2	139	89	-	84	84	-	-	-	-	-	-	-
Critical Hdwy	7.1	6.5	6.2	7.1	6.5	6.21	4.1	-	-	4.1	-	-
Critical Hdwy Stg 1	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4	3.3	3.5	4	3.309	2.2	-	-	2.2	-	-
Pot Cap-1 Maneuver	737	724	1053	809	735	987	1599	-	-	1519	-	-
Stage 1	929	829	-	937	835	-	-	-	-	-	-	-
Stage 2	869	825	-	929	829	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	635	710	1053	798	721	987	1599	-	-	1519	-	-
Mov Cap-2 Maneuver	635	710	-	798	721	-	-	-	-	-	-	-
Stage 1	929	813	-	937	835	-	-	-	-	-	-	-
Stage 2	759	825	-	911	813	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0	9.4	0	3.7
HCM LOS	A	A		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1599	-	-	-	963	1519	-	-
HCM Lane V/C Ratio	-	-	-	-	0.145	0.018	-	-
HCM Control Delay (s)	0	-	-	0	9.4	7.4	0	-
HCM Lane LOS	A	-	-	A	A	A	A	-
HCM 95th %tile Q(veh)	0	-	-	-	0.5	0.1	-	-

Intersection	
Intersection Delay, s/veh	9.2
Intersection LOS	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	13	0	9	1	0	0	5	313	1	0	134	3
Future Vol, veh/h	13	0	9	1	0	0	5	313	1	0	134	3
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Heavy Vehicles, %	8	0	0	0	0	0	0	1	0	0	2	0
Mvmt Flow	14	0	10	1	0	0	5	337	1	0	144	3
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay	8.1	8.2	9.7	8.2
HCM LOS	A	A	A	A

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	2%	59%	100%	0%
Vol Thru, %	98%	0%	0%	98%
Vol Right, %	0%	41%	0%	2%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	319	22	1	137
LT Vol	5	13	1	0
Through Vol	313	0	0	134
RT Vol	1	9	0	3
Lane Flow Rate	343	24	1	147
Geometry Grp	1	1	1	1
Degree of Util (X)	0.386	0.033	0.002	0.173
Departure Headway (Hd)	4.055	4.959	5.187	4.221
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	878	726	694	837
Service Time	2.116	2.961	3.189	2.317
HCM Lane V/C Ratio	0.391	0.033	0.001	0.176
HCM Control Delay	9.7	8.1	8.2	8.2
HCM Lane LOS	A	A	A	A
HCM 95th-tile Q	1.8	0.1	0	0.6

Intersection												
Int Delay, s/veh	5.5											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	0	0	0	11	0	90	0	29	19	19	17	8
Future Vol, veh/h	0	0	0	11	0	90	0	29	19	19	17	8
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	76	76	76	76	76	76	76	76	76	76	76	76
Heavy Vehicles, %	0	0	0	0	0	1	0	6	0	0	0	0
Mvmt Flow	0	0	0	14	0	118	0	38	25	25	22	11

Major/Minor	Minor2		Minor1		Major1			Major2				
Conflicting Flow All	188	141	28	129	134	51	33	0	0	63	0	0
Stage 1	78	78	-	51	51	-	-	-	-	-	-	-
Stage 2	110	63	-	78	83	-	-	-	-	-	-	-
Critical Hdwy	7.1	6.5	6.2	7.1	6.5	6.21	4.1	-	-	4.1	-	-
Critical Hdwy Stg 1	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4	3.3	3.5	4	3.309	2.2	-	-	2.2	-	-
Pot Cap-1 Maneuver	777	754	1053	849	760	1020	1592	-	-	1553	-	-
Stage 1	936	834	-	967	856	-	-	-	-	-	-	-
Stage 2	900	846	-	936	830	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	678	742	1053	839	748	1020	1592	-	-	1553	-	-
Mov Cap-2 Maneuver	678	742	-	839	748	-	-	-	-	-	-	-
Stage 1	936	821	-	967	856	-	-	-	-	-	-	-
Stage 2	796	846	-	921	817	-	-	-	-	-	-	-

Approach	EB		WB		NB		SB	
HCM Control Delay, s	0		9.2		0		3.2	
HCM LOS	A		A					

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1592	-	-	-	997	1553	-	-
HCM Lane V/C Ratio	-	-	-	-	0.133	0.016	-	-
HCM Control Delay (s)	0	-	-	0	9.2	7.4	0	-
HCM Lane LOS	A	-	-	A	A	A	A	-
HCM 95th %tile Q(veh)	0	-	-	-	0.5	0	-	-

Intersection	
Intersection Delay, s/veh	9.1
Intersection LOS	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	13	0	9	1	0	0	5	303	1	0	132	3
Future Vol, veh/h	13	0	9	1	0	0	5	303	1	0	132	3
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Heavy Vehicles, %	8	0	0	0	0	0	0	1	0	0	2	0
Mvmt Flow	14	0	10	1	0	0	5	326	1	0	142	3
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay	8.1	8.2	9.5	8.2
HCM LOS	A	A	A	A

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	2%	59%	100%	0%
Vol Thru, %	98%	0%	0%	98%
Vol Right, %	0%	41%	0%	2%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	309	22	1	135
LT Vol	5	13	1	0
Through Vol	303	0	0	132
RT Vol	1	9	0	3
Lane Flow Rate	332	24	1	145
Geometry Grp	1	1	1	1
Degree of Util (X)	0.374	0.032	0.002	0.17
Departure Headway (Hd)	4.053	4.932	5.159	4.212
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	880	730	698	839
Service Time	2.112	2.933	3.16	2.304
HCM Lane V/C Ratio	0.377	0.033	0.001	0.173
HCM Control Delay	9.5	8.1	8.2	8.2
HCM Lane LOS	A	A	A	A
HCM 95th-tile Q	1.7	0.1	0	0.6

Intersection												
Int Delay, s/veh	3.9											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	0	0	0	14	0	51	0	48	47	72	56	6
Future Vol, veh/h	0	0	0	14	0	51	0	48	47	72	56	6
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	91	91	91	91	91	91	91	91	91	91	91	91
Heavy Vehicles, %	0	0	0	8	0	0	0	0	2	0	0	0
Mvmt Flow	0	0	0	15	0	56	0	53	52	79	62	7

Major/Minor	Minor2		Minor1		Major1			Major2				
Conflicting Flow All	331	329	66	303	306	79	69	0	0	105	0	0
Stage 1	224	224	-	79	79	-	-	-	-	-	-	-
Stage 2	107	105	-	224	227	-	-	-	-	-	-	-
Critical Hdwy	7.1	6.5	6.2	7.18	6.5	6.2	4.1	-	-	4.1	-	-
Critical Hdwy Stg 1	6.1	5.5	-	6.18	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.1	5.5	-	6.18	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4	3.3	3.572	4	3.3	2.2	-	-	2.2	-	-
Pot Cap-1 Maneuver	626	593	1003	638	611	987	1545	-	-	1499	-	-
Stage 1	783	722	-	915	833	-	-	-	-	-	-	-
Stage 2	903	812	-	765	720	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	566	560	1003	611	577	987	1545	-	-	1499	-	-
Mov Cap-2 Maneuver	566	560	-	611	577	-	-	-	-	-	-	-
Stage 1	783	682	-	915	833	-	-	-	-	-	-	-
Stage 2	852	812	-	723	680	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0	9.5	0	4
HCM LOS	A	A		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1545	-	-	-	871	1499	-	-
HCM Lane V/C Ratio	-	-	-	-	0.082	0.053	-	-
HCM Control Delay (s)	0	-	-	0	9.5	7.5	0	-
HCM Lane LOS	A	-	-	A	A	A	A	-
HCM 95th %tile Q(veh)	0	-	-	-	0.3	0.2	-	-

Intersection	
Intersection Delay, s/veh	9.9
Intersection LOS	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	12	0	14	1	0	1	16	243	1	1	295	10
Future Vol, veh/h	12	0	14	1	0	1	16	243	1	1	295	10
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Heavy Vehicles, %	0	0	0	0	0	0	0	1	0	0	0	0
Mvmt Flow	14	0	16	1	0	1	18	276	1	1	335	11
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay	8.3	8.2	9.7	10.2
HCM LOS	A	A	A	B

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	6%	46%	50%	0%
Vol Thru, %	93%	0%	0%	96%
Vol Right, %	0%	54%	50%	3%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	260	26	2	306
LT Vol	16	12	1	1
Through Vol	243	0	0	295
RT Vol	1	14	1	10
Lane Flow Rate	295	30	2	348
Geometry Grp	1	1	1	1
Degree of Util (X)	0.356	0.041	0.003	0.412
Departure Headway (Hd)	4.334	5.042	5.12	4.27
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	833	710	698	848
Service Time	2.347	3.074	3.155	2.27
HCM Lane V/C Ratio	0.354	0.042	0.003	0.41
HCM Control Delay	9.7	8.3	8.2	10.2
HCM Lane LOS	A	A	A	B
HCM 95th-tile Q	1.6	0.1	0	2

Intersection	
Intersection Delay, s/veh	7.5
Intersection LOS	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	0	0	0	14	0	48	0	34	47	66	39	0
Future Vol, veh/h	0	0	0	14	0	48	0	34	47	66	39	0
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Heavy Vehicles, %	0	0	0	8	0	0	0	2	0	0	0	0
Mvmt Flow	0	0	0	15	0	53	0	37	52	73	43	0
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay	0	7.4	7.2	7.9
HCM LOS	-	A	A	A

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	0%	0%	23%	63%
Vol Thru, %	42%	100%	0%	37%
Vol Right, %	58%	0%	77%	0%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	81	0	62	105
LT Vol	0	0	14	66
Through Vol	34	0	0	39
RT Vol	47	0	48	0
Lane Flow Rate	89	0	68	115
Geometry Grp	1	1	1	1
Degree of Util (X)	0.094	0	0.075	0.135
Departure Headway (Hd)	3.794	4.411	3.966	4.214
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	936	0	889	848
Service Time	1.85	2.411	2.054	2.255
HCM Lane V/C Ratio	0.095	0	0.076	0.136
HCM Control Delay	7.2	7.4	7.4	7.9
HCM Lane LOS	A	N	A	A
HCM 95th-tile Q	0.3	0	0.2	0.5

Intersection												
Intersection Delay, s/veh	9.8											
Intersection LOS	A											

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	12	0	14	1	0	1	16	236	1	1	289	10
Future Vol, veh/h	12	0	14	1	0	1	16	236	1	1	289	10
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Heavy Vehicles, %	0	0	0	0	0	0	0	1	0	0	0	0
Mvmt Flow	14	0	16	1	0	1	18	268	1	1	328	11
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay	8.3	8.1	9.6	10.1
HCM LOS	A	A	A	B

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	6%	46%	50%	0%
Vol Thru, %	93%	0%	0%	96%
Vol Right, %	0%	54%	50%	3%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	253	26	2	300
LT Vol	16	12	1	1
Through Vol	236	0	0	289
RT Vol	1	14	1	10
Lane Flow Rate	288	30	2	341
Geometry Grp	1	1	1	1
Degree of Util (X)	0.346	0.041	0.003	0.404
Departure Headway (Hd)	4.327	5.01	5.087	4.261
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	834	714	703	849
Service Time	2.341	3.044	3.124	2.261
HCM Lane V/C Ratio	0.345	0.042	0.003	0.402
HCM Control Delay	9.6	8.3	8.1	10.1
HCM Lane LOS	A	A	A	B
HCM 95th-tile Q	1.6	0.1	0	2