



Whipple Consulting Engineers, Inc.

December 6, 2023
W.O. No. 2023-3505

Parcel No. 25014.4207, 25014.4701

City of Spokane
808 W. Spokane Falls Blvd.
Spokane, WA 99201

Attn: Inga Note, P.E

Re: **Ash Place Townhomes, a Residential Development**
3242 N. Ash Pl., Spokane, WA
Trip Generation and Distribution Letter

Dear Inga,

This Trip Generation and Distribution Letter (TGDL) is for Ash Place Townhomes, a residential development. This letter will establish the anticipated trip generation and distribution for the development as shown on Figure 2, Preliminary Site Plan. This report will follow the standards for traffic letters as required by the City of Spokane and the Institute of Transportation Engineers.

PROJECT DESCRIPTION

The project proposes to develop 1.32 acres (57,499 sf) +/- into a 21-lot townhome preliminary plat under the Building Opportunity and Choices for All (BOCA) interim ordinance. The townhomes will have frontage along Ash Place for western properties, and Ash Street for eastern properties. This project site is currently undeveloped and covered in field grass and weeds. The property is located at 3242 N. Ash Place in Spokane, WA. The project will access the public street system on Ash Place via a private alley. The expected build-out year is 2024.

VICINITY / AERIAL VIEW OF SITE

The project site is currently zoned as RSF (Residential Single Family). The surrounding area is zoned as RSF. The site lies in a portion of the SE $\frac{1}{4}$ of Section 01, T.25N., R.44E., W.M. within Spokane. A vicinity map is included as Figure 1 and a preliminary copy of the site plan is included as Figure 2, please see the Appendix. The parcel numbers for the site are 25014.4207 and 25014.4701.

TRIP GENERATION AND DISTRIBUTION

Trip Types

The proposed land use for the project is residential. 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 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 generally 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 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, because of the many different routes that can be taken to and from the site, we believe that these would be difficult to track and verify. Therefore, no diverted trips were acknowledged for this analysis.

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 used for commercial developments. Determining these trip types is more difficult to quantify and without specific guidance are usually determined by engineering judgment on a

project-by-project basis. Although some shared trips between land uses may occur with this project, there is no supporting data to justify a large, shared trip reduction. Therefore, to be conservative no shared trips were credited for this project.

Trip Generation Characteristics for the Proposed Project

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

Proposed Land Uses

For the proposed 21 townhomes, Land Use Code (LUC) #215 Single Family Attached will be used to establish the number of potential trips generated by the proposed land use. Per the ITE Trip Generation handbook, there are two means to calculate trip generation: Average Rate and Fitted Curve. Both methods are shown in the table with the most conservative selected. The anticipated trip generation for this method is shown in Table 1.

Table 1- Trip Generation Rates for LUC #215 Single Family Attached

No. of Dwelling Units	AM Peak Hour		PM Peak Hour			
	Vol. per Average Rate	Directional Distribution		Vol. per Average Rate	Directional Distribution	
		31% In	69% Out		57% In	43% Out
21	10	3	7	12	7	5
Average Daily Trip Ends (ADT)		Average Rate Equations (Adj. Street):		Fitted Curve Equations (Adj. Street):		
Units	Average Rate	AM: $T = 0.48 * x = 10$ PM: $T = 0.57 * x = 12$ ADT: $T = 7.20 * x = 151$ T = Trips/units, x = Dwelling Units		AM: $T = 0.52 (x) - 5.70 = 5$ PM: $T = 0.60 (x) - 3.93 = 9$ ADT: $T = 7.62 (x) - 50.48 = 110$ T = Trips/units, x = Dwelling Units		
21	151					

As shown in Table 4, the project is anticipated to generate 10 trips in the AM peak hour with 3 trips entering the site and 7 trips exiting the site. In the PM peak hour, the project is anticipated to generate 12 trips with 7 trips entering the site and 5 trips exiting the site. The project is anticipated to generate 151 average daily trip ends to/from the site.

TRIP DISTRIBUTION

It is anticipated that the project site will be accessed via Ash Place. The roads anticipated to be used by the additional trips generated by the development are listed below.

Ash Place is a north/south, two-way, two-lane, local access road that extends south from Liberty Avenue to Euclid Avenue. Ash Place serves residential land uses. The speed limit on Ash Place is 25 MPH.

Liberty Ave is an east/west, two-way, two-lane, local access road that extends east through Alberta Street, Cochran Street, and Oak Street before curving south to Ash Place. Liberty Avenue serves residential land uses. The speed limit on Liberty Avenue is 25 MPH.

Oak Street, within the study area, is a north/south, two-way, two-lane, local access road that extends south from Garland Avenue through Kiernan Avenue, Gordon Avenue, Glass Avenue, and Courtland Avenue before terminating at Liberty Avenue. Oak Street serves residential and institutional land uses. The speed limit on Oak Street is 25 MPH.

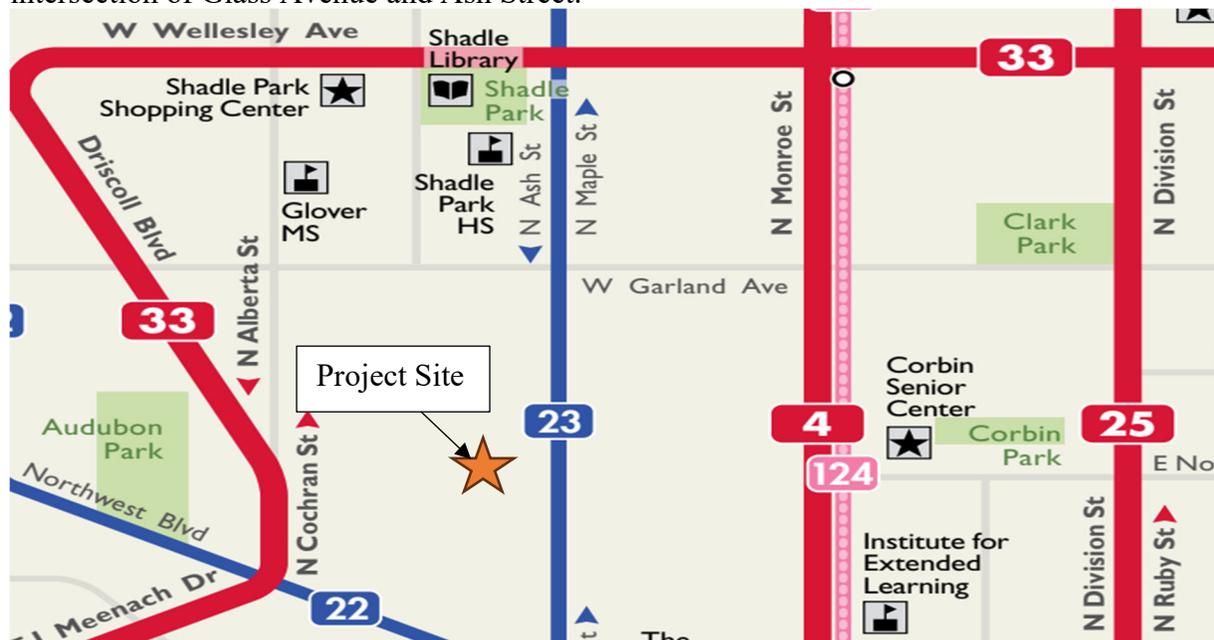
Courtland Ave is an east/west, two-way, two-lane, local access road that extends east from Milton Street through Lindeke Street, Alberta Street, Cochran Street, Nettleton Street, Belt Street, and Ash Place before terminating. Courtland Avenue serves residential land uses. The speed limit on Courtland Avenue is 25 MPH.

Maple Street is a north/south, one-way, 2- & 3-lane, urban principal arterial that extends south from Garland Avenue through Kiernan Avenue, Gordon Avenue, Glass Avenue, and Courtland Avenue to Northwest Boulevard, then continues south. Maple Street serves residential and commercial land uses. The speed limit on Maple Street is 30 MPH.

Ash Street within the study area is a north/south, one-way, 2- & 3-lane urban principal arterial that extends from Garland Avenue through Kiernan Avenue, Gordon Avenue, Glass Avenue, and Courtland Avenue to Northwest Boulevard, then continues south. Ash Street serves residential, commercial, and institutional land uses. The speed limit on Ash Street is 30 MPH.

Existing Transit System

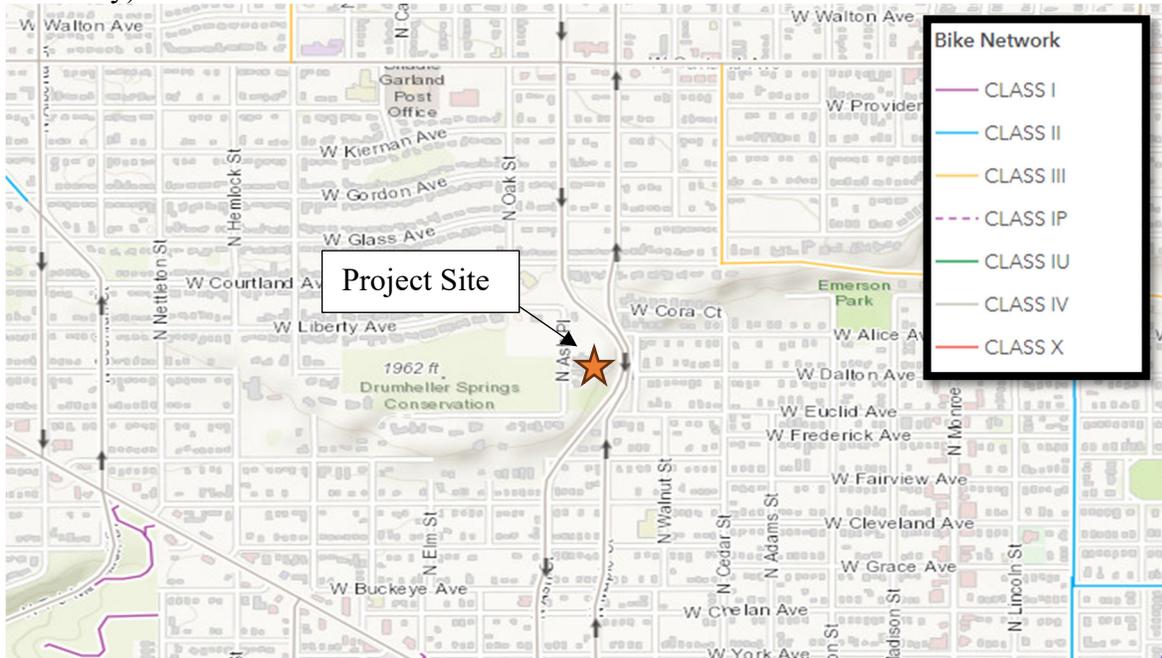
The nearest bus route to the project site is Route 23. The closest bus stop is on Ash Street at the intersection of Glass Avenue and Ash Street.



Source: Spokane Transit Authority

Existing Bike System

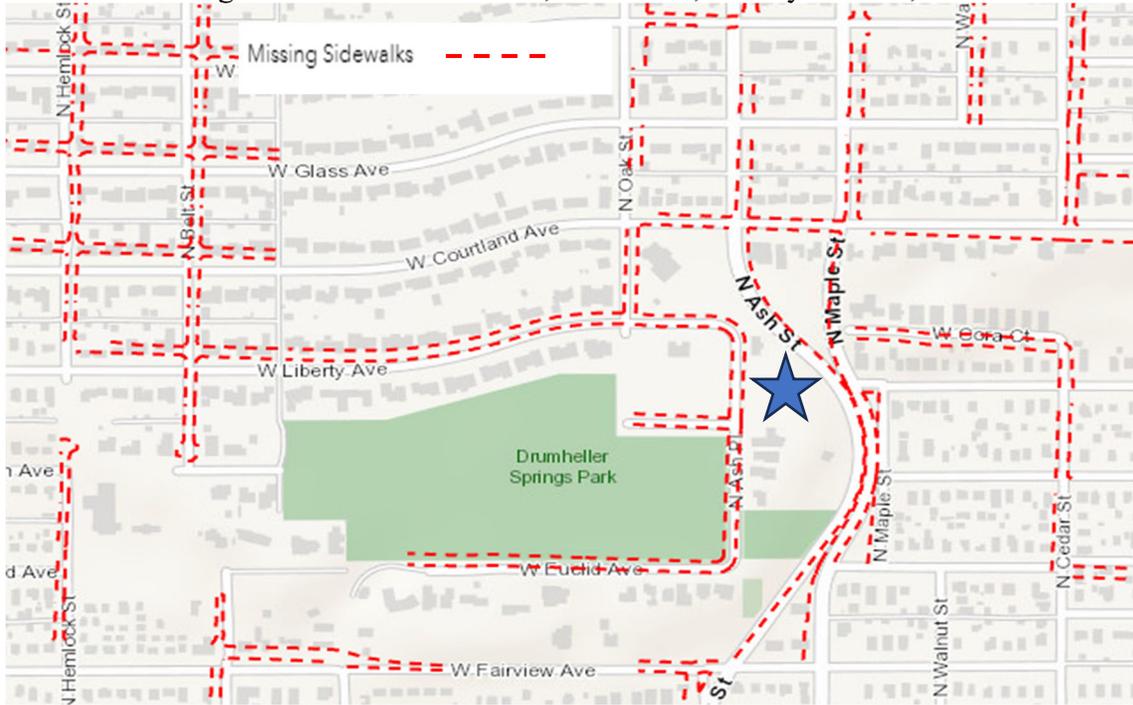
Ash Street is classified as a Class IV Lane (Shared Roadway). There is a Class III Lane (Shared Roadway) on Cora Avenue to the northeast.



Source: Spokane Regional Bike Map

Existing Pedestrian System

There are missing sidewalks on Ash Place, Ash Street, Liberty Avenue, and Courtland Avenue.



Source: City of Spokane Bike & Pedestrian Plan

Considering many factors such as the surrounding transportation facilities, typical commuting patterns, and existing development in the area, traffic for the proposed development is anticipated as follows: 100% of trips are anticipated to travel to/from the north via Oak Street when entering/exiting.

Entering: 62% of trips are anticipated to travel from the south via Maple Street and continue to turn left on Courtland Avenue past Ash Street, then turn left on Oak Street to enter the site. 38% of trips are anticipated to travel from the north via Ash Street and continue to turn right on Courtland Avenue, then turn left on Oak Street to enter the site.

Exiting: 62% of trips are anticipated to exit the site via Courtland Avenue, then travel to the south via Ash Street. 38% of trips are anticipated to exit the site via Courtland Avenue then continue past Ash Street and turn left on Maple Street to travel north towards Garland Avenue.

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 Northwest Service Area and as such is subject to the current Impact Fee Schedule (2023) and a \$50 admin fee. Table 2 calculated 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 # 215 Single Family Attached Housing	215	21	Dwelling Units	\$866.87 + \$50 = \$916.87	\$19,254.27

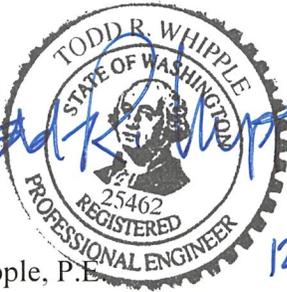
As shown in Table 2, the proposed project under the current fee schedule is anticipated to generate an impact fee of \$19,254.27.

Conclusions and Recommendations

It is anticipated that the project would generate 10 AM peak hour trips and 12 PM peak hour trips. Based upon the number of anticipated trips, and the distribution of those trips, we believe that the proposed project will have a minimal impact on the transportation system. Therefore, we recommend that the project complete any frontage improvements, pay the impact fee shown in Table 2, and be allowed to move forward without further traffic analysis.

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

Sincerely,



The image shows a circular professional engineer seal for Todd R. Whipple, State of Washington, License No. 25462. The seal features a portrait of a man and the text "TODD R. WHIPPLE", "STATE OF WASHINGTON", "25462", and "REGISTERED PROFESSIONAL ENGINEER". A blue ink signature is written over the seal, and the date "12/7/23" is written in blue ink to the right of the seal.

Todd R. Whipple, P.E.

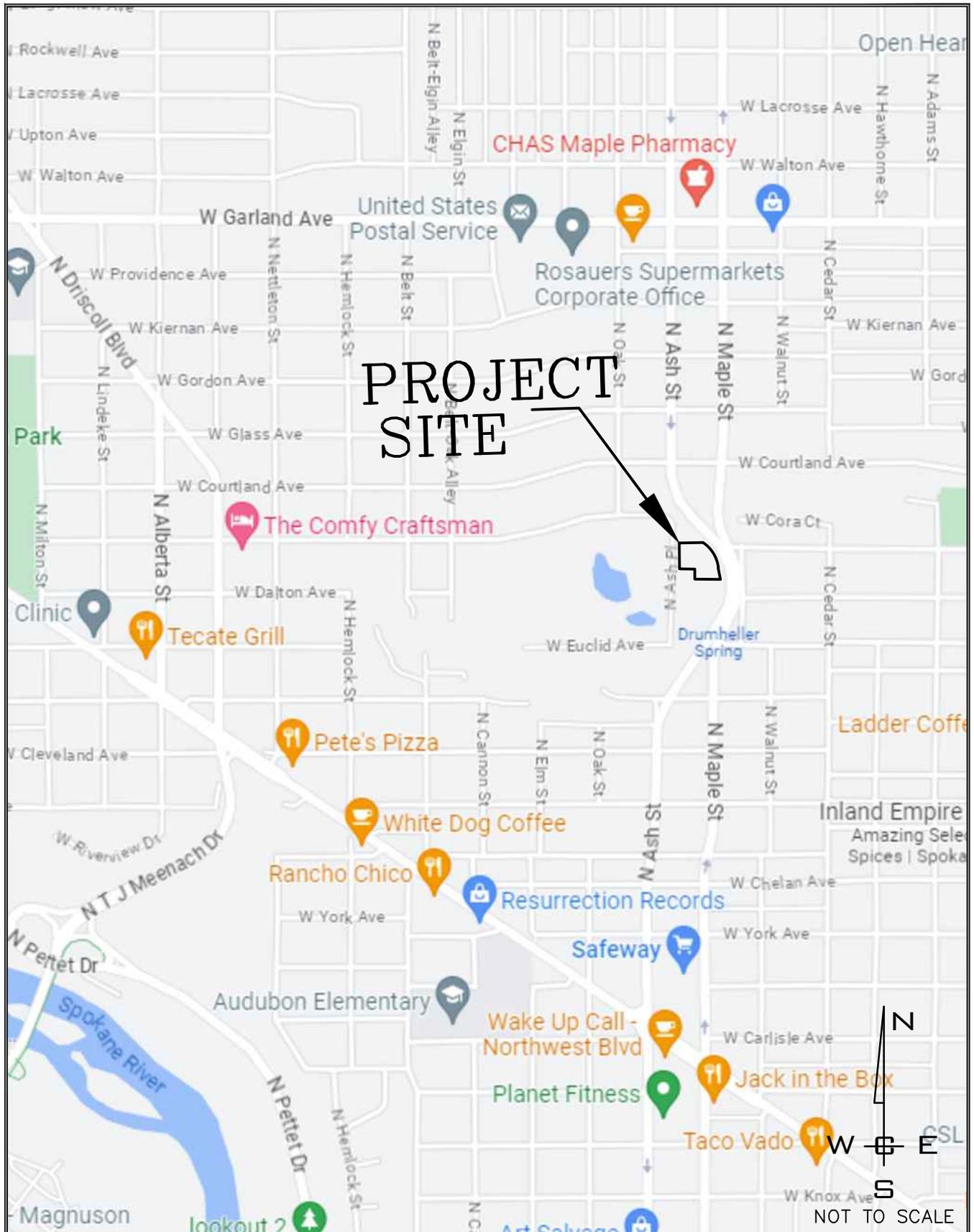
TRW/mtr

encl. Appendix (Vicinity Map, Aerial View of Site, Trip Dist %)

cc: Sponsor, File

APPENDIX

1. Vicinity Map
2. Preliminary Site Plan
3. AM Existing Trip Distribution
4. PM Existing Trip Distribution
5. ITE Trip Generation Manual

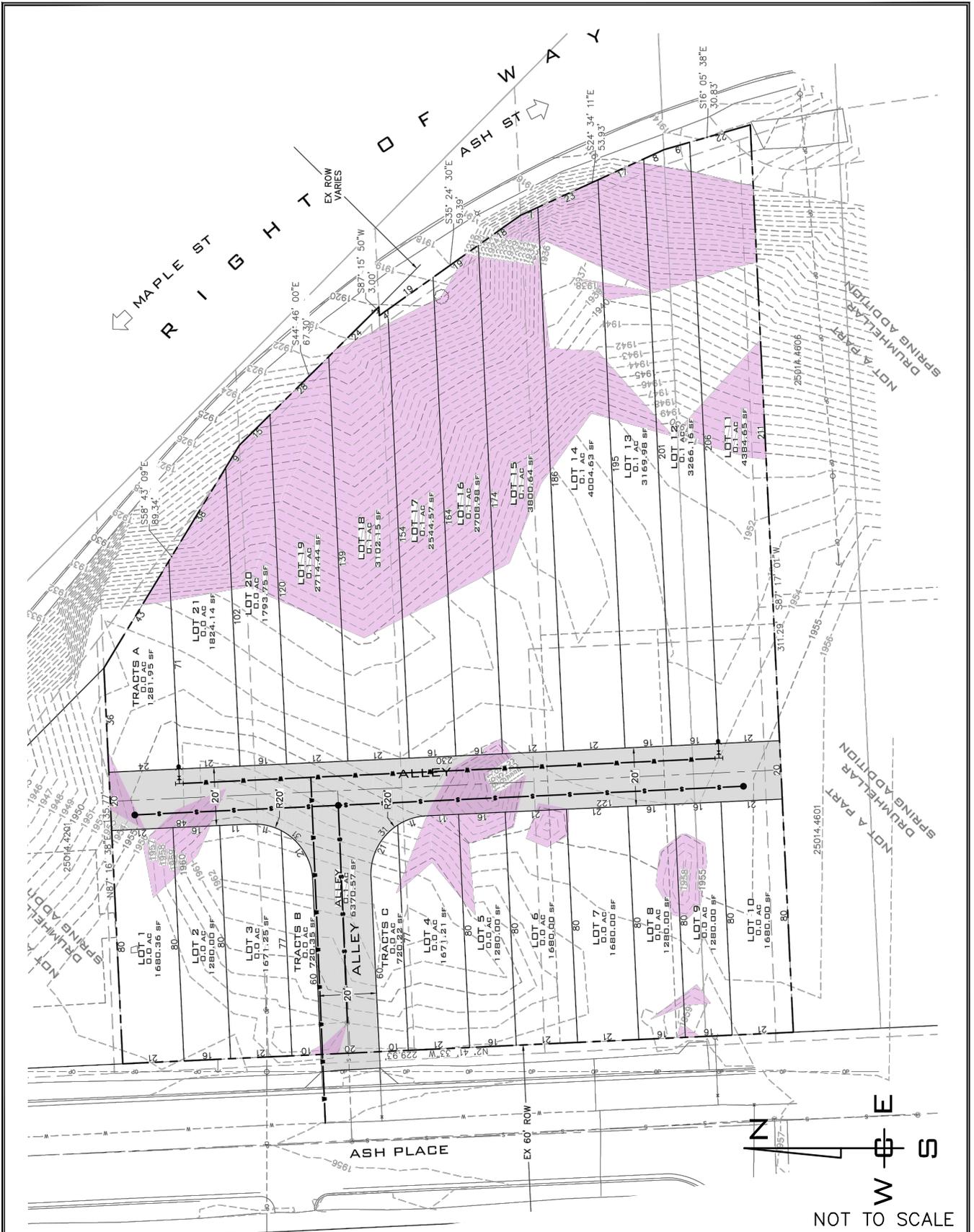


PROJ #: 23-3505
 DATE: 12/06/23
 DRAWN: BNG
 APPROVED: TRW

TRIP GENERATION AND DISTRIBUTION
ASH PLACE TOWNHOMES
 3242 N. ASH PLACE
 SPOKANE, WASHINGTON

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

FIGURE 1 **VICINITY MAP**

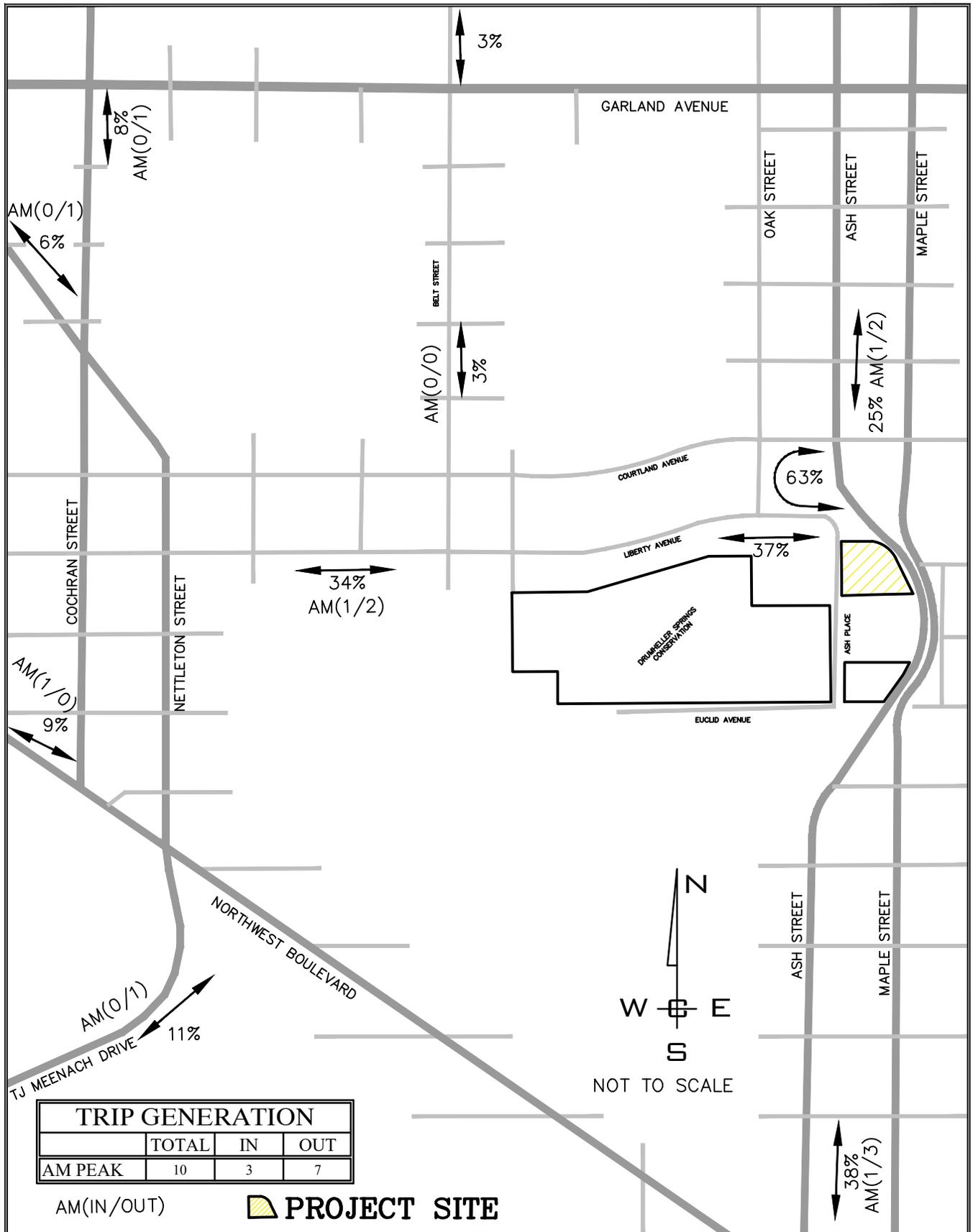


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TRIP GENERATION AND DISTRIBUTION
ASH PLACE TOWNHOMES
 3242 N. ASH PLACE
 SPOKANE, WASHINGTON

FIGURE 2 **PRELIMINARY SITE PLAN**

WCE
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 21 S. PINES ROAD
 SPOKANE VALLEY, WASHINGTON 99206
 PH: 509-893-2617 FAX: 509-926-0227



TRIP GENERATION			
	TOTAL	IN	OUT
AM PEAK	10	3	7

AM(IN/OUT)

 PROJECT SITE

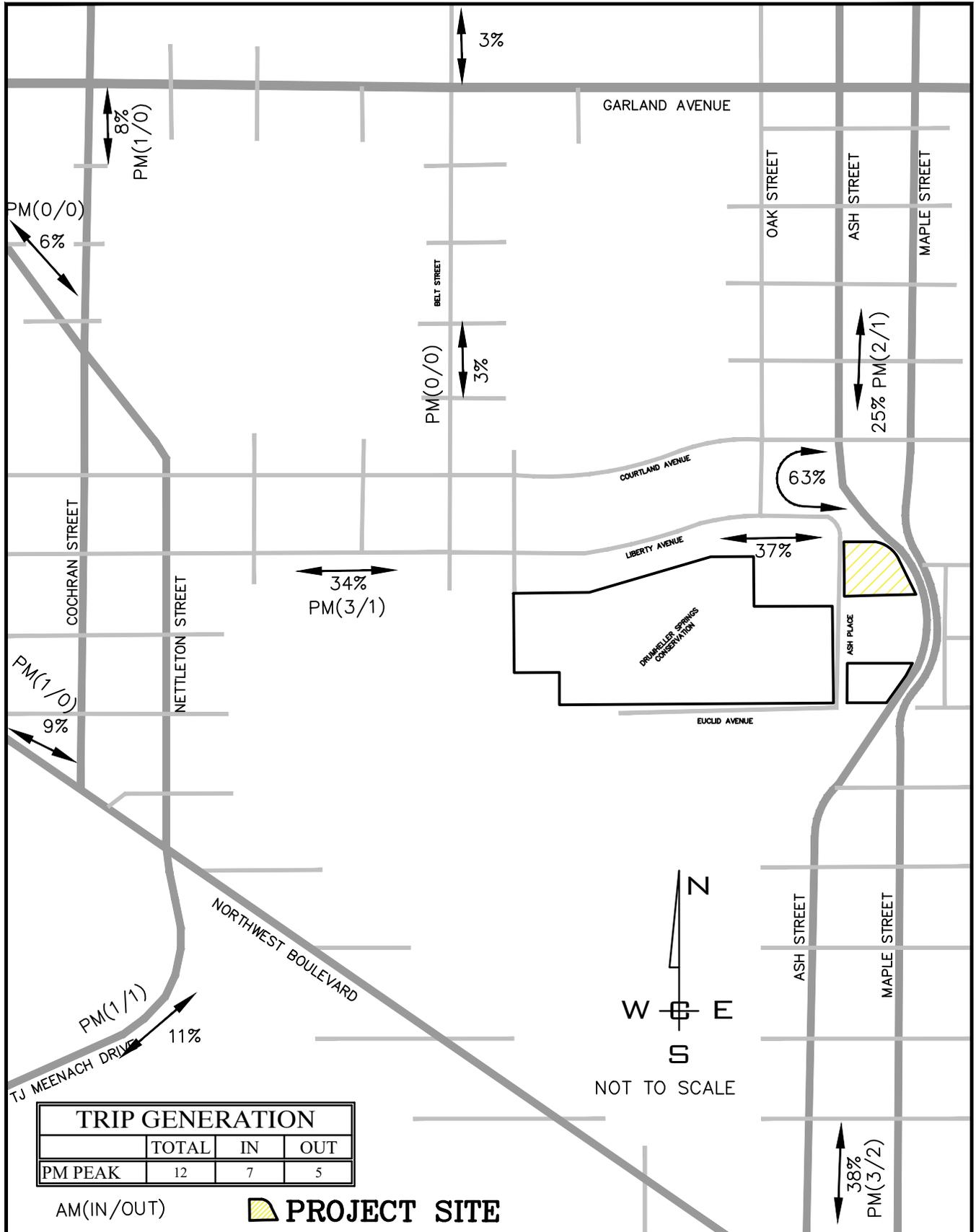
PROJ #: 23-3505
 DATE: 12/06/23
 DRAWN: BNG
 APPROVED: TRW

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 3242 N. ASH PLACE
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FIGURE 3

AM PROJECT TRIP DISTRIBUTION



TRIP GENERATION			
	TOTAL	IN	OUT
PM PEAK	12	7	5

AM(IN/OUT)

 PROJECT SITE

PROJ #: 23-3505
 DATE: 12/06/23
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 APPROVED: TRW

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FIGURE 4

PM PROJECT TRIP DISTRIBUTION

Graph Look Up

Query Filter

DATA SOURCE:
Trip Generation Manual, 11th Ed

SEARCH BY LAND USE CODE:
215

LAND USE GROUP:
(200-299) Residential

LAND USE:
215 - Single-Family Attached Housing

LAND USE SUBCATEGORY:
All Sites

SETTING/LOCATION:
General Urban/Suburban

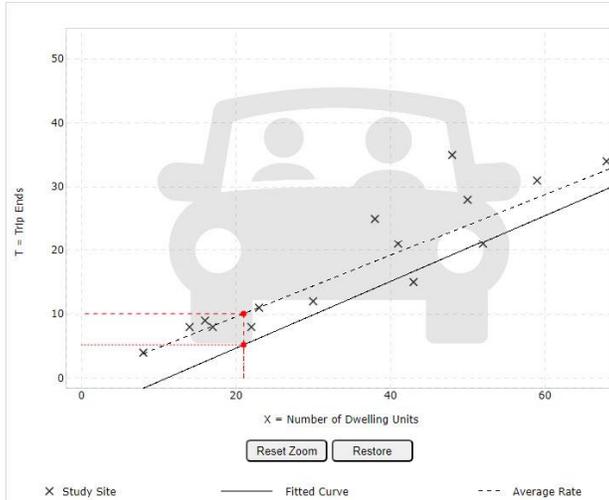
INDEPENDENT VARIABLE (IV):
Dwelling Units

TIME PERIOD:
Weekday, Peak Hour of Adjacent Street Traffic

TRIP TYPE:
Vehicle

ENTER IV VALUE TO CALCULATE TRIPS:
21 Calculate

Data Plot and Equation



Use the mouse wheel to Zoom Out or Zoom In.
Hover the mouse pointer on data points to view X and T values.

DATA STATISTICS

Land Use:	Single-Family Attached Housing (215) Click for Description and Data Plots
Independent Variable:	Dwelling Units
Time Period:	Weekday Peak Hour of Adjacent Street Traffic One Hour Between 7 and 9 a.m.
Setting/Location:	General Urban/Suburban
Trip Type:	Vehicle
Number of Studies:	40
Avg. Num. of Dwelling Units:	135
Average Rate:	0.48
Range of Rates:	0.12 - 0.74
Standard Deviation:	0.14
Fitted Curve Equation:	$T = 0.52(X) - 5.70$
R²:	0.92
Directional Distribution:	25% entering, 75% exiting
Calculated Trip Ends:	Average Rate: 10 (Total), 3 (Entry), 7 (Exit) Fitted Curve: 5 (Total), 1 (Entry), 4 (Exit)

Graph Look Up

Query Filter

DATA SOURCE:
Trip Generation Manual, 11th Ed

SEARCH BY LAND USE CODE:
215

LAND USE GROUP:
(200-299) Residential

LAND USE:
215 - Single-Family Attached Housing

LAND USE SUBCATEGORY:
All Sites

SETTING/LOCATION:
General Urban/Suburban

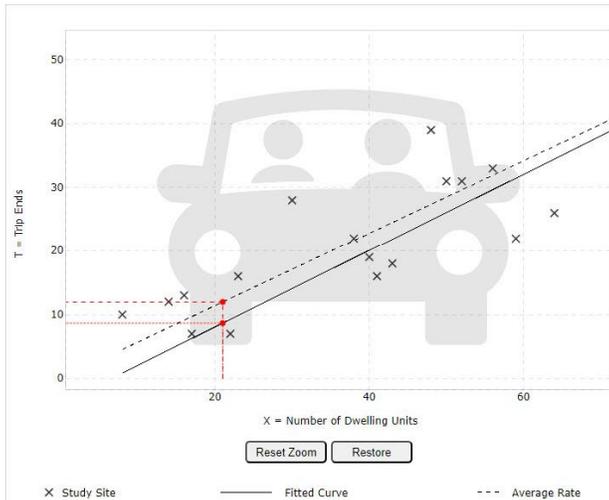
INDEPENDENT VARIABLE (IV):
Dwelling Units

TIME PERIOD:
Weekday, Peak Hour of Adjacent Street Traffic

TRIP TYPE:
Vehicle

ENTER IV VALUE TO CALCULATE TRIPS:
21 Calculate

Data Plot and Equation



Use the mouse wheel to Zoom Out or Zoom In.
Hover the mouse pointer on data points to view X and T values.

DATA STATISTICS

Land Use:	Single-Family Attached Housing (215) Click for Description and Data Plots
Independent Variable:	Dwelling Units
Time Period:	Weekday Peak Hour of Adjacent Street Traffic One Hour Between 4 and 6 p.m.
Setting/Location:	General Urban/Suburban
Trip Type:	Vehicle
Number of Studies:	51
Avg. Num. of Dwelling Units:	136
Average Rate:	0.57
Range of Rates:	0.17 - 1.25
Standard Deviation:	0.18
Fitted Curve Equation:	$T = 0.60(X) - 3.93$
R²:	0.91
Directional Distribution:	59% entering, 41% exiting
Calculated Trip Ends:	Average Rate: 12 (Total), 7 (Entry), 5 (Exit) Fitted Curve: 9 (Total), 5 (Entry), 4 (Exit)

Graph Look Up

Query Filter

DATA SOURCE:
Trip Generation Manual, 11th Ed

SEARCH BY LAND USE CODE:
215

LAND USE GROUP:
(200-299) Residential

LAND USE:
215 - Single-Family Attached Housing

LAND USE SUBCATEGORY:
All Sites

SETTING/LOCATION:
General Urban/Suburban

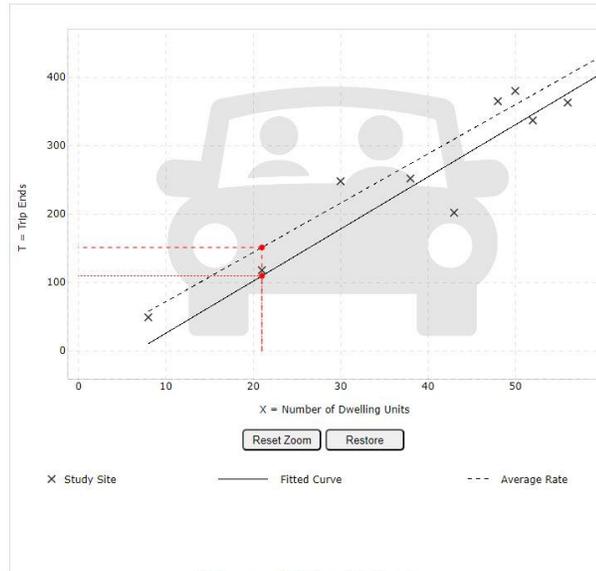
INDEPENDENT VARIABLE (IV):
Dwelling Units

TIME PERIOD:
Weekday

TRIP TYPE:
Vehicle

ENTER IV VALUE TO CALCULATE TRIPS:
21 Calculate

Data Plot and Equation



DATA STATISTICS

Land Use:	Single-Family Attached Housing (215) Click for Description and Data Plots
Independent Variable:	Dwelling Units
Time Period:	Weekday
Setting/Location:	General Urban/Suburban
Trip Type:	Vehicle
Number of Studies:	22
Avg. Num. of Dwelling Units:	120
Average Rate:	7.20
Range of Rates:	4.70 - 10.97
Standard Deviation:	1.61
Fitted Curve Equation:	$T = 7.62(X) - 50.48$
R ² :	0.94
Directional Distribution:	50% entering, 50% exiting
Calculated Trip Ends:	Average Rate: 151 (Total), 76 (Entry), 75 (Exit) Fitted Curve: 110 (Total), 55 (Entry), 55 (Exit)