Whipple Consulting Engineers, Inc.

November 19, 2025
W.O. No. 24-3883

Parcel No. 25253.0039,
25264.0007

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

Attn: Inga Note, P.E

Re: **Thorpe Road Subdivision**
2710 W. Thorpe Road
Trip Generation and Distribution Letter

Dear Inga,

This Trip Generation and Distribution Letter (TGDL) is for the Thorpe Road Subdivision located at 2710 W. Thorpe Road in the City of Spokane. 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 5.98 acres (260,278 sf) +/- comprised of 2 parcels into a subdivision with 26 single-family homes. This project is currently undeveloped and covered in trees, field grass, and weeds. The project will construct one east-west public road that will connect to Thorpe Road, and one north-south road stub to the south for future connectivity. The project proposes to be accessed via the east-west public road that will connect to Thorpe Road.

VICINITY / AERIAL VIEW OF SITE

The project site is currently zoned as R-1 and the surrounding area is also zoned as R-1 and Residential Multifamily (RMF). The site lies in a portion of the SE ¼ of Section 26 and SW ¼ of Section 25, T.25N., R.42E., W.M. within the City of 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 25253.0039 and 25264.0007.

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 26 single family units, Land Use Code (LUC) 210 Single Family Detached Housing 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. The anticipated trips generated per this method are shown in Table 1.

Table 1- Trip Generation Rates for LUC # 210 Single Family Detached Housing

No. of Dwelling Units	AM Peak Hour			PM Peak Hour		
	Vol. per Fitted Curve	Directional Distribution		Vol. per Fitted Curve	Directional Distribution	
		25% In	75% Out		63% In	37% Out
26	22	5	17	28	18	10

Average Daily Trip Ends (ADT)		Average Rate Equations (Adj. Street):	Fitted Curve Equations (Adj. Street):
Units	Fitted Curve	AM: T = 0.70* x = 18 PM: T = 0.94* x = 24 ADT: T = 9.43* x = 245 T = Trips/units, x = Dwelling Units	AM: Ln(T) = 0.91 Ln (x) + 0.12 = 22 PM: Ln(T) = 0.94 Ln (x) + 0.27 = 28 ADT: Ln(T) = 0.92 Ln (x) + 2.68 = 292 T = Trips/units, x = Dwelling Units
26	292		

As shown in Table 1, the land use of the proposed development is anticipated to generate 22 trips in the AM peak hour with 5 trips entering the site and 17 trips exiting the site. In the PM peak hour, the proposed development is anticipated to generate 28 trips with 18 trips entering the site and 10 trips exiting the site. The proposed project is expected to generate 292 average daily trips to/from the project site.

TRIP DISTRIBUTION

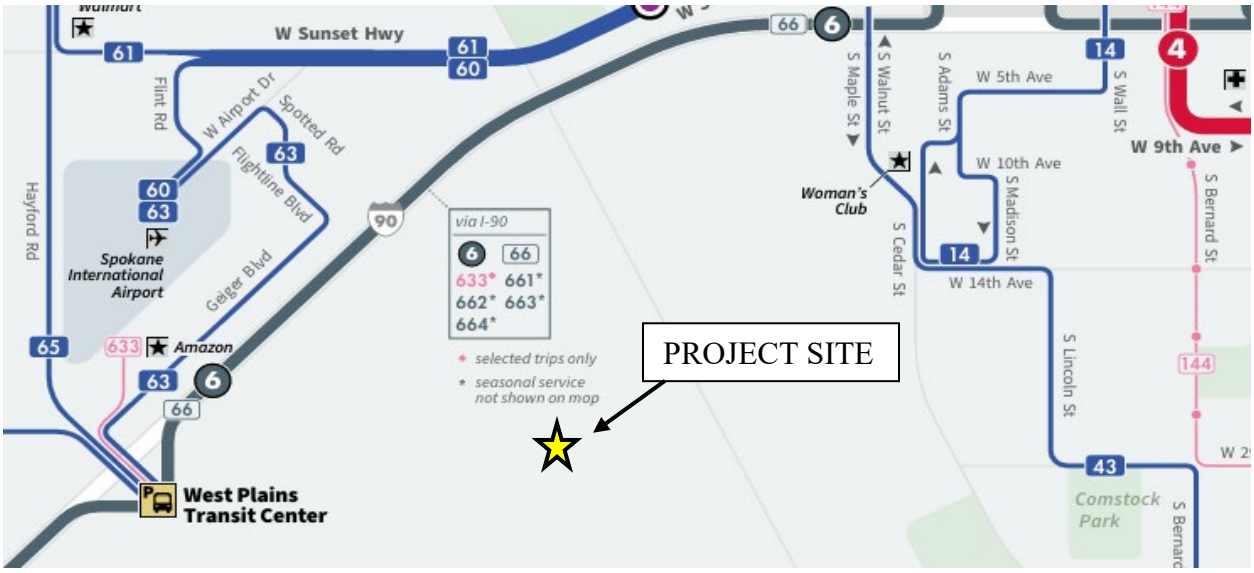
It is anticipated that the project site will be accessed via a proposed access road that will connect to Thorpe Road. The roads anticipated to be used by the additional trips generated by the development are listed below.

Thorpe Road is generally an east/west, two-way, two-lane urban collector, urban minor arterial and urban major collector. 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 an urban major

collector and turning into 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.

Existing Transit System

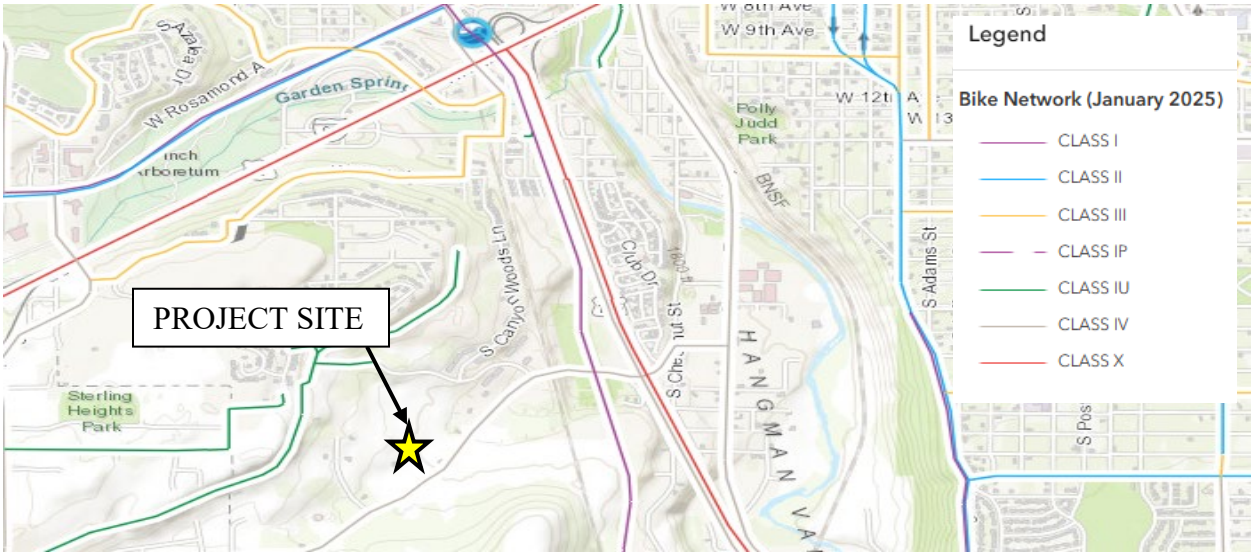
There are no bus stops within a mile of the proposed site. The nearest transit stop to the site for STA routes 60 and 61 is located approximately 3.1 miles away at the intersection of Sunset Hwy and Rustle Road.



Source: Spokane Transit Authority

Existing Bike System

The Trolley Trail is shown in green on the bike map. The Fish Lake Trail is also near the site shown in purple on the bike map.



Source: Spokane Regional Bike Map

Existing Pedestrian System

There is currently no sidewalk near the site on Thorpe Road. The Trolley Trail Head and Westwood Trail are within 1 mile of the project site.

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:

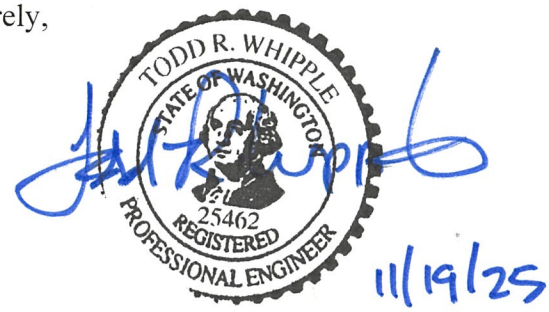
From the site, most trips will travel down the proposed access road and turn onto Thorpe Road. From the total number of trips, 70% of trips are anticipated to travel to/from the northeast via Thorpe Road and 30% of trips are expected to travel to/from the southwest via Thorpe Road.

Conclusions and Recommendations

It is anticipated that the project would generate 22 AM peak hour trips and 28 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 frontage improvements on Thorpe Road 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,



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 Web Base App. Tables LUC #210

Query | Filter

DATA SOURCE:
Trip Generation Manual, 11th Ed
New data edition is available. Upgrade now.

SEARCH BY LAND USE CODE:
210

LAND USE GROUP:
(200-299) Residential

LAND USE :
210 - Single-Family Detached Housing

LAND USE SUBCATEGORY:
All Sites

SETTING/LOCATION:
General Urban/Suburban

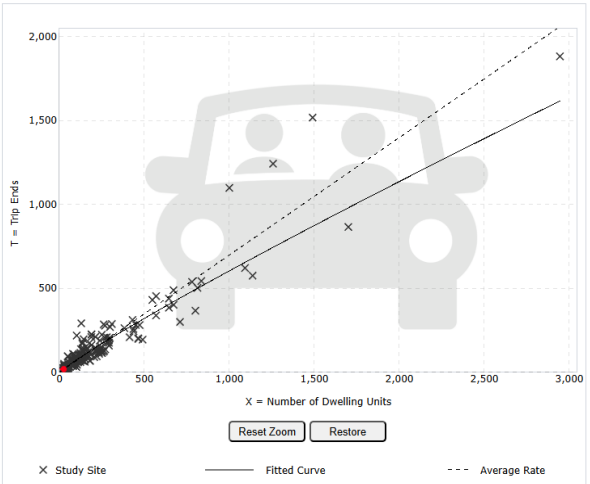
INDEPENDENT VARIABLE (IV):
Dwelling Units

TIME PERIOD:
Weekday, Peak Hour of Adjacent Stre

TRIP TYPE:
Vehicle

ENTER IV VALUE TO CALCULATE TRIPS:
26 Calculate

Data Plot and Equation



DATA STATISTICS

Land Use:
Single-Family Detached Housing (210) 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:
192

Avg. Num. of Dwelling Units:
226

Average Rate:
0.70

Range of Rates:
0.27 - 2.27

Standard Deviation:
0.24

Fitted Curve Equation:
Ln(T) = 0.91 Ln(X) + 0.12

R^2:
0.90

Directional Distribution:
25% entering, 75% exiting

Calculated Trip Ends:
Average Rate: 18 (Total), 5 (Entry), 13 (Exit)
Fitted Curve: 22 (Total), 5 (Entry), 17 (Exit)

Query | Filter

DATA SOURCE:
Trip Generation Manual, 11th Ed
New data edition is available. Upgrade now.

SEARCH BY LAND USE CODE:
210

LAND USE GROUP:
(200-299) Residential

LAND USE :
210 - Single-Family Detached Housing

LAND USE SUBCATEGORY:
All Sites

SETTING/LOCATION:
General Urban/Suburban

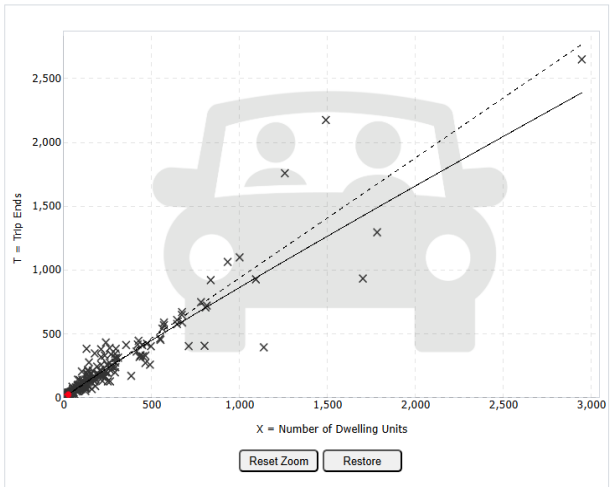
INDEPENDENT VARIABLE (IV):
Dwelling Units

TIME PERIOD:
Weekday, Peak Hour of Adjacent Stre

TRIP TYPE:
Vehicle

ENTER IV VALUE TO CALCULATE TRIPS:
26 Calculate

Data Plot and Equation



DATA STATISTICS

Land Use:
Single-Family Detached Housing (210) 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:
208

Avg. Num. of Dwelling Units:
248

Average Rate:
0.94

Range of Rates:
0.35 - 2.98

Standard Deviation:
0.31

Fitted Curve Equation:
Ln(T) = 0.94 Ln(X) + 0.27

R^2:
0.92

Directional Distribution:
63% entering, 37% exiting

Calculated Trip Ends:
Average Rate: 24 (Total), 15 (Entry), 9 (Exit)
Fitted Curve: 28 (Total), 18 (Entry), 10 (Exit)

Query | Filter

DATA SOURCE:
Trip Generation Manual, 11th Ed

New data edition is available. Upgrade now.

SEARCH BY LAND USE CODE:
210

LAND USE GROUP:
(200-299) Residential

LAND USE :
210 - Single-Family Detached Housing

LAND USE SUBCATEGORY:
All Sites

SETTING/LOCATION:
General Urban/Suburban

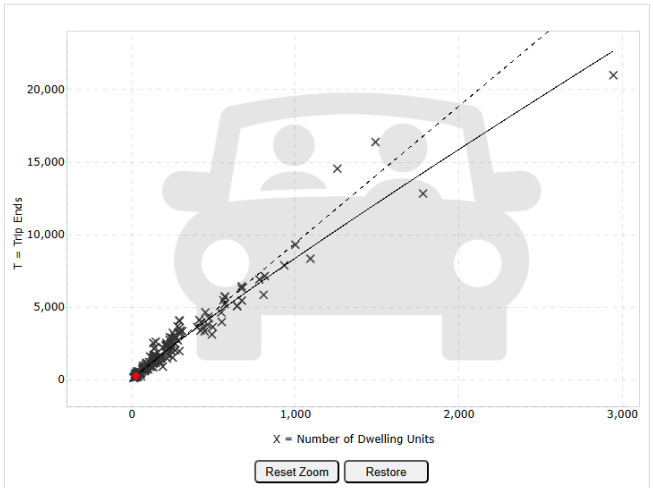
INDEPENDENT VARIABLE (IV):
Dwelling Units

TIME PERIOD:
Weekday

TRIP TYPE:
Vehicle

ENTER IV VALUE TO CALCULATE TRIPS:
26 Calculate

Data Plot and Equation



DATA STATISTICS

Land Use:
Single-Family Detached Housing (210) Click for Description and Data Plots

Independent Variable:
Dwelling Units

Time Period:
Weekday

Setting/Location:
General Urban/Suburban

Trip Type:
Vehicle

Number of Studies:
174

Avg. Num. of Dwelling Units:
246

Average Rate:
9.43

Range of Rates:
4.45 - 22.61

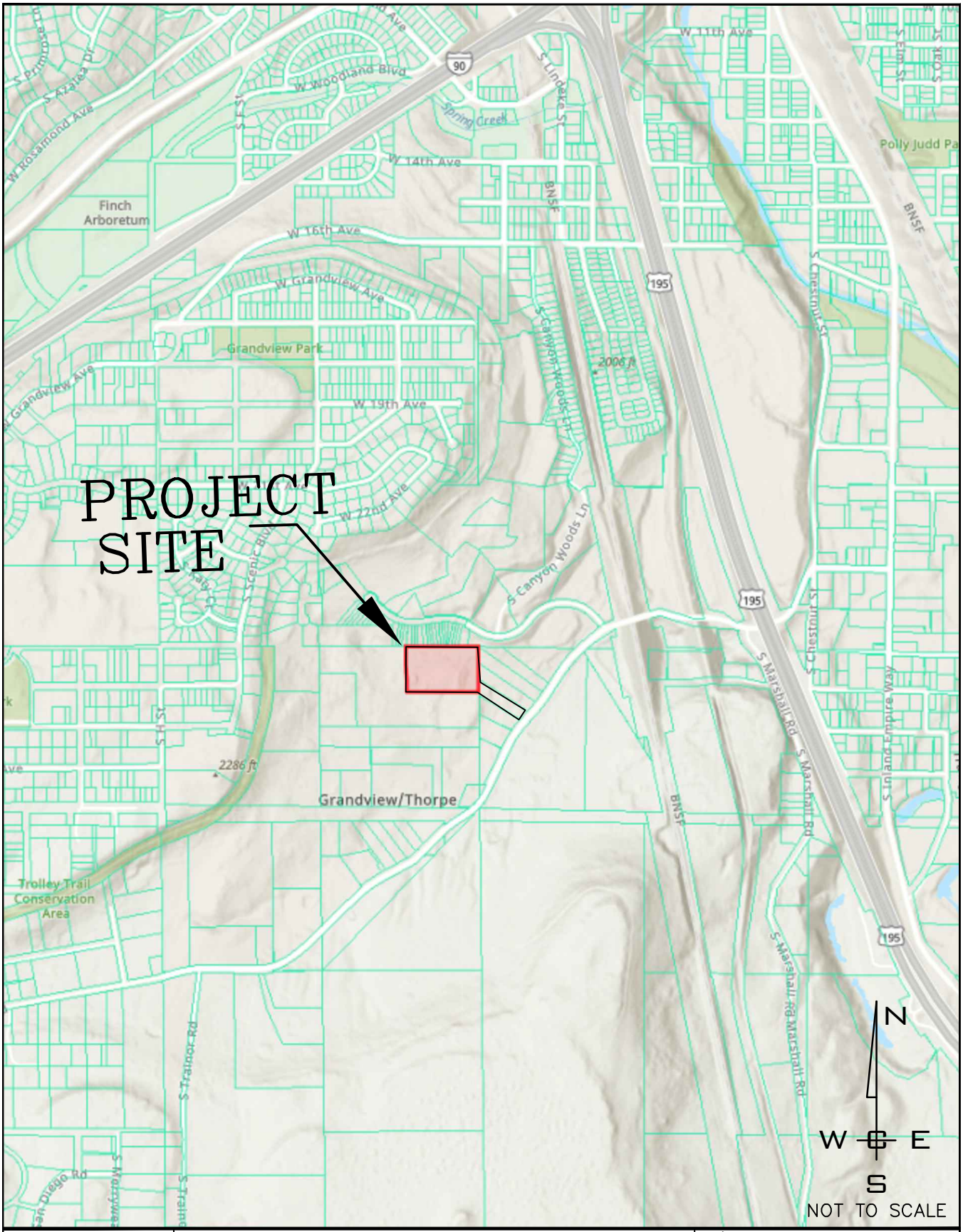
Standard Deviation:
2.13

Fitted Curve Equation:
Ln(T) = 0.92 Ln(X) + 2.68

R^2:
0.95

Directional Distribution:
50% entering, 50% exiting

Calculated Trip Ends:
Average Rate: 245 (Total), 123 (Entry), 122 (Exit)
Fitted Curve: 292 (Total), 146 (Entry), 146 (Exit)



PROJ #: 24-3883 DATE: 11/19/2025 DRAWN: MTR APPROVED: TRW	TRIP GENERATION AND DISTRIBUTION **THORPE RD. SUBDIVISION** 2710 W. THORPE ROAD 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	

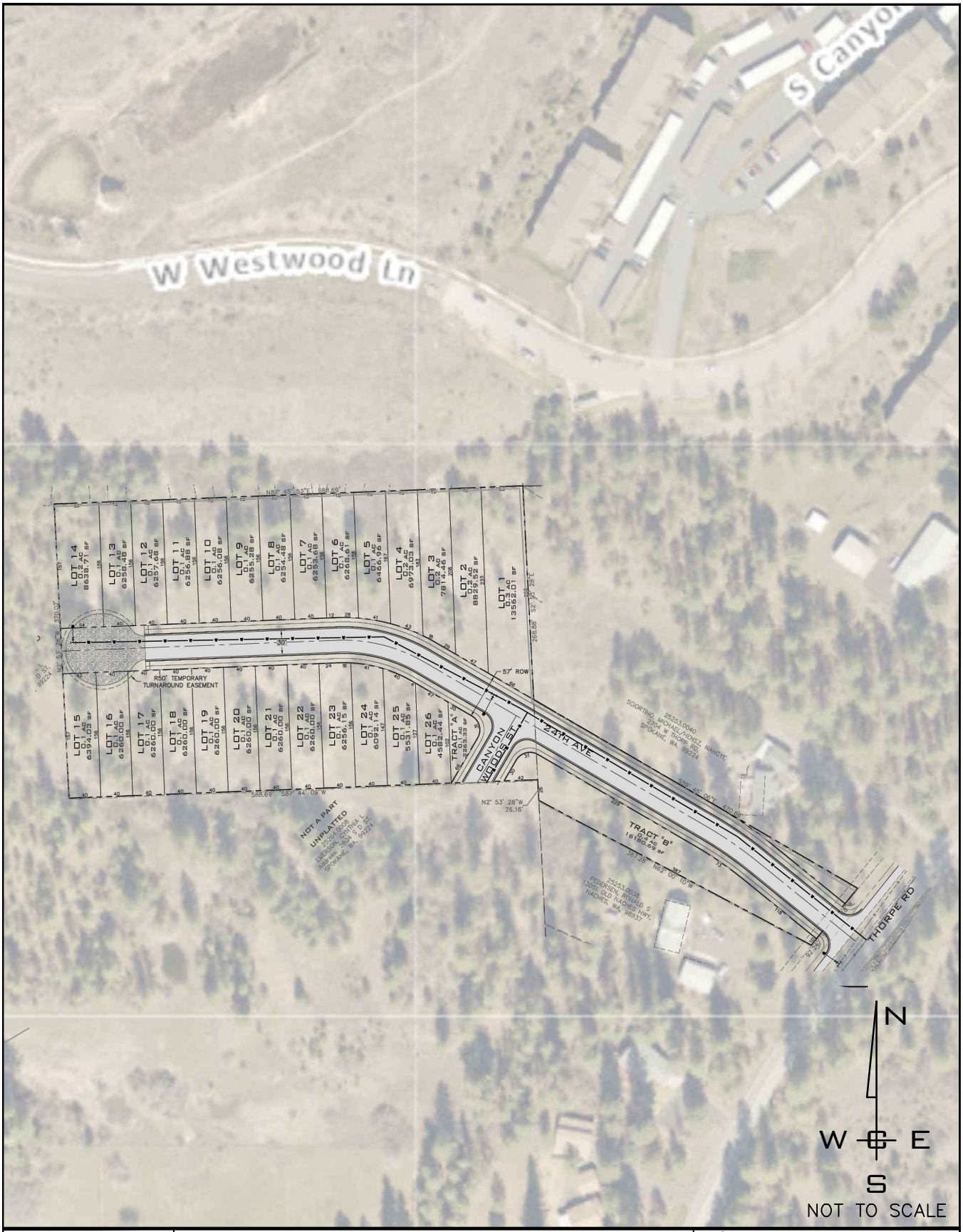


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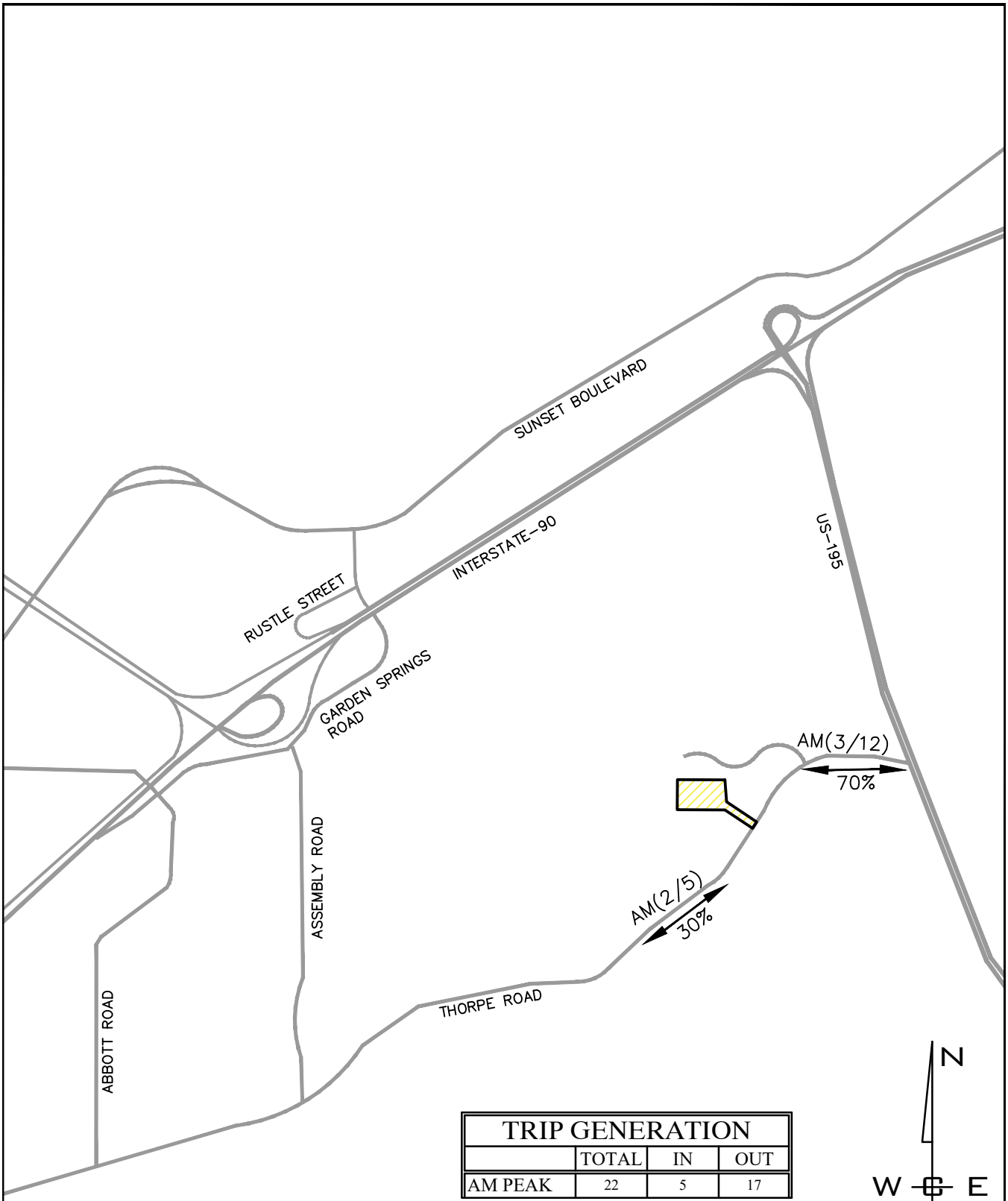
FIGURE 2	PRELIMINARY SITE PLAN	



TRIP GENERATION			
	TOTAL	IN	OUT
AM PEAK	22	5	17

NOT TO SCALE

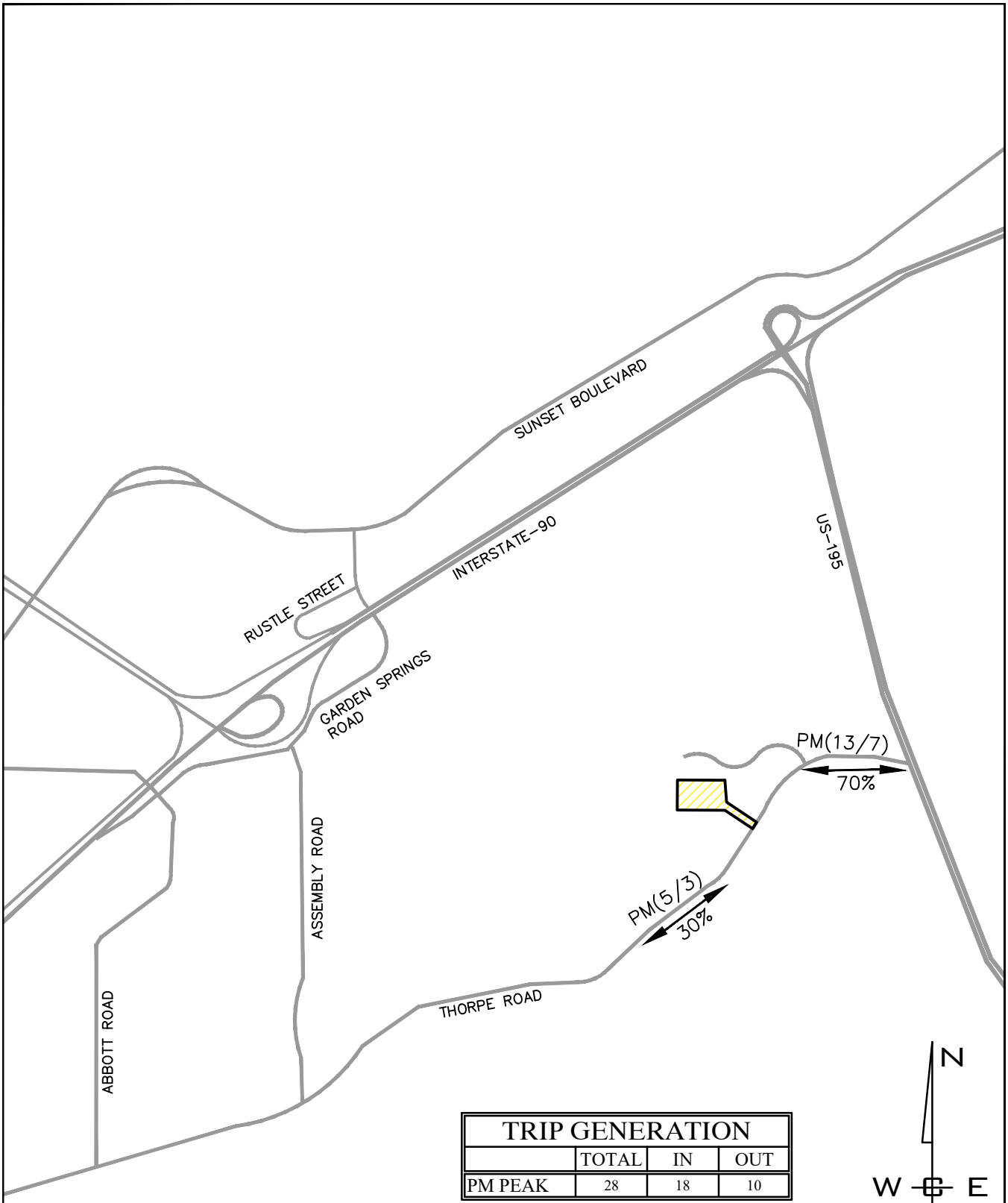
PROJ #: 24-3883
DATE: 11/19/2025
DRAWN: MTR
APPROVED: TRW

TRIP GENERATION AND DISTRIBUTION
THORPE RD. SUBDIVISION
2710 W. THORPE ROAD
SPOKANE, WASHINGTON

FIGURE 3

AM PROJECT TRIP DISTRIBUTION

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



TRIP GENERATION			
	TOTAL	IN	OUT
PM PEAK	28	18	10

NOT TO SCALE

PROJ #: 24-3883
DATE: 11/19/2025
DRAWN: MTR
APPROVED: TRW

TRIP GENERATION AND DISTRIBUTION
THORPE RD. SUBDIVISION
2710 W. THORPE ROAD
SPOKANE, WASHINGTON

FIGURE 4

PM PROJECT TRIP DISTRIBUTION

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