Whipple Consulting Engineers, Inc.

July 9, 2025
W.O. No. 2025-4026

Parcel No.
26245.0054

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

Attn: Inga Note, P.E.

Re: **Strong Road– a Residential Subdivision**
2120 W Strong Road
Trip Generation & Distribution Letter

Dear Inga,

This Trip Generation and Distribution Letter (TGDL) is for the proposed Strong Road Subdivision located at 2120 W Strong Road. Please see Figure 1, Vicinity Map. 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 Transportation Impact Analyses for Site Development published by the Institute of Transportation Engineers (ITE).

PROJECT DESCRIPTION

The project proposes to develop 1.62 acres (70,567 sf) +/- into a 12-lot subdivision. The project is currently developed with an existing residential home; all structures are proposed to be removed during construction and the existing home will remain. The site is also covered with trees, field grass, and weeds. The project is proposed to be developed with one private north-south road and one private east-west road. Lots 2, 3 and 4 front the proposed east-west road. Lot 1 and lots 5 through 11 front the proposed north-south road. The project proposes to be accessed via Strong Road from the proposed north-south road. Please see Figure 2, Preliminary Site Plan.

VICINITY / SITE PLAN

The site is currently listed on the comprehensive plan and zoned as Residential Low (R1). The subject property is located on a portion of NW ¼, Section 24, T26N., R42E., W.M. The parcel number for the project is 26245.0054. The surrounding areas are zoned as residential low. A vicinity map is included as Figure 1, along with a preliminary site plan as Figure 2.

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 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 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 11 dwelling units, Land Use Code LUC#210, Single-Family Attached 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

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
11	10	2	8	12	8	4

Average Daily Trip Ends (ADT)		Average Rate Equations (Adj. Street):	Fitted Curve Equations (Adj. Street):
Dwelling Units	Vol. per Fitted Curve	AM: T = 0.70 * x = 8 PM: T = 0.94 * x = 10 ADT: T = 9.43 * x = 104 T = Trips/units, x = Dwelling Units	AM: Ln(T) = 0.91 Ln(x)+0.12 = 10 PM: T = 0.94(x) + 0.27 = 12 ADT: Ln(T) = 0.92 Ln(x) +2.68 = 132 T = Trips/units, x = Dwelling Units
11	132		

As shown on Table 1, the proposed development is anticipated to generate 10 trips in the AM peak hour with 2 trips entering the site and 8 trips exiting the site. In the PM peak hour, the proposed development is anticipated to generate 12 trips, with 8 trips entering the site and 4 trips exiting the site. The additional units of the proposed development are anticipated to generate 132 average daily trip ends to/from the site.

TRIP DISTRIBUTION

As shown on the site plan, the site will be accessed via Strong Road (please see Figure 2 Preliminary Site Plan) It is anticipated that the residents of the site will generally use the following roadways:

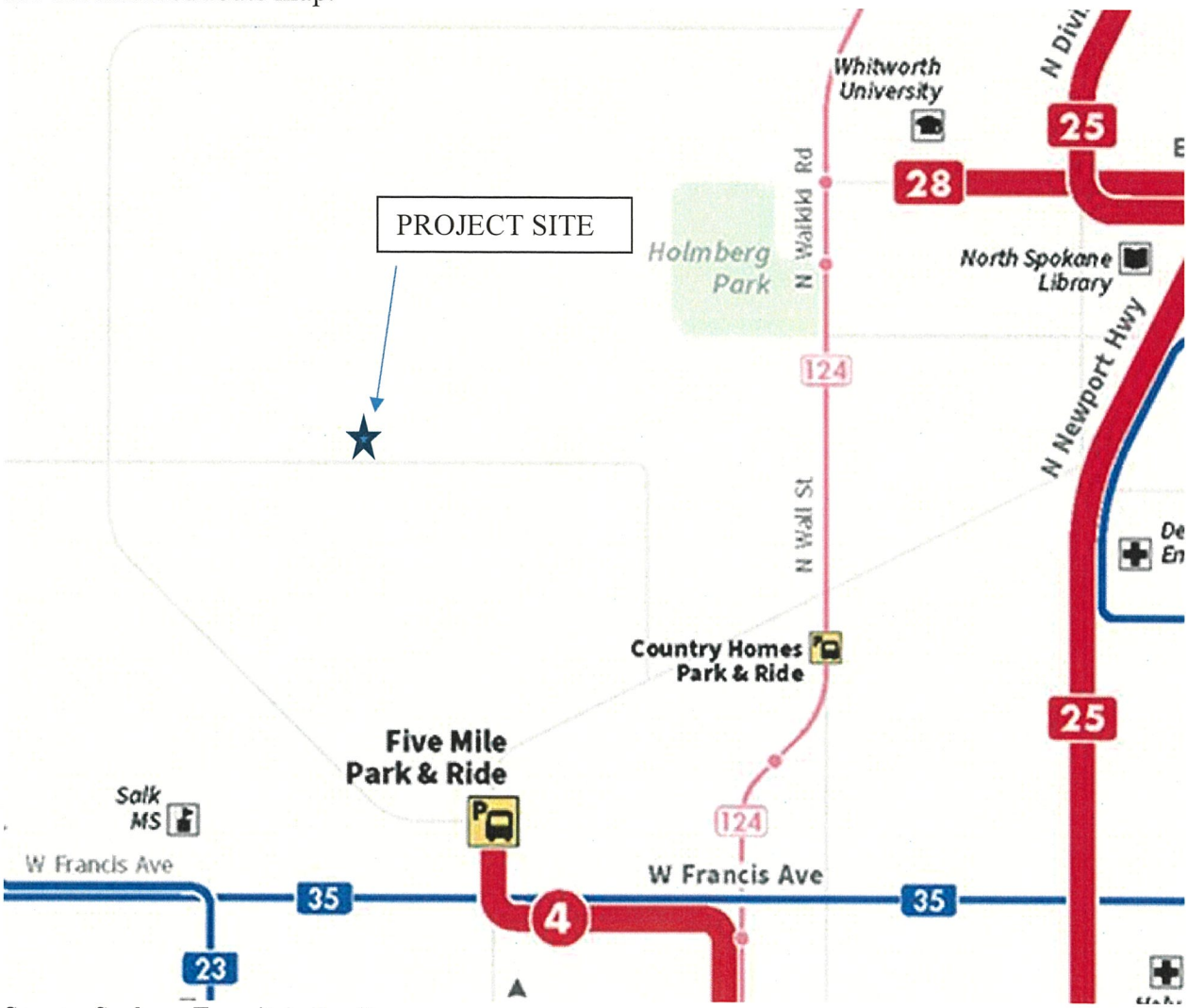
Strong Road is an east/west, two-way, two-lane Urban Collector and Urban Major Collector that extends east from Barnes Road through Five-Mile Road as an Urban Collector in Spokane County. Beyond Five-Mile Road Strong Road continues east to Cedar Road, as an Urban Major collector within the City of Spokane. Strong Road serves generally residential land uses/ The posted speed limit in Spokane County is 35 MPH and 30 MPH with the City of Spokane.

Five Mile Road is a north/south, two-way, two-lane Urban Collector and Urban Major Collector that extends northwest from Maple Street through Ash Street to Abigail Avenue before turning north and going through Strong Road as an Urban Major collector within the City of Spokane. Beyond Strong Road, Five Mile Road continues North as an Urban Collector in Spokane County.

Five Mile Road goes through Johannsen Road to Hawthorne Road where Five Mile Road swings East and connects into Waikiki Road. Five-Mile Road serves generally residential land uses/ The posted speed limit in Spokane County is 35 MPH and 30 MPH with the City of Spokane.

Existing Transit System

The existing bus route nearest the project site is Route 4, at the Five Mile Park and Ride. Please see the attached route map.



Source: Spokane Transit Authority

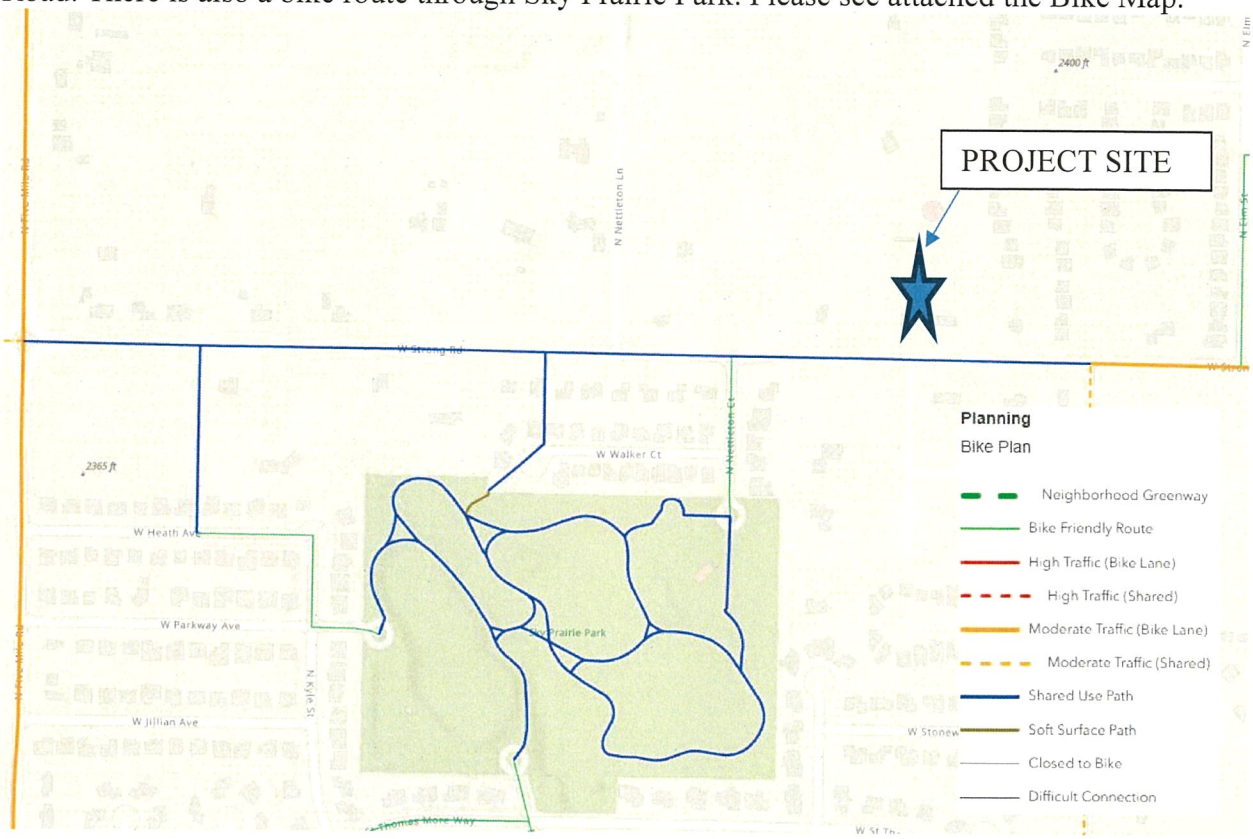
Existing Pedestrian Networks

There are sidewalks along Tieton Place as a part of the Forest Grove subdivision. There are no existing sidewalks on Five Mile Road. As part of the project, the frontage along Strong Road is anticipated to include sidewalks. Please see the attached satellite map.

Source: Satellite Map

Existing Bike Routes

Within the study area, there is a shared use path along Strong Road and a bike lane on Five mile Road. There is also a bike route through Sky Prairie Park. Please see attached the Bike Map.



Source: City of Spokane Bike Map

Trip Distribution

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: 31% of the trips are anticipated to go to/from the north via Five Mile Road, 30% of the trips are anticipated to go to/from the south via Five Mile Road, 30% of the trips are anticipated to go to/from the west via Strong Road and 9% of the trips are anticipated to go to/from the east via Strong Road. Please see Figure 3&4, AM & PM Trip Distribution.

TRAFFIC IMPACT FEE

The City of Spokane municipal code has established transportation impact fees under Spokane Municipal Code. The proposed project is within the Northwest 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	11	dwelling	$878.26	$9,660.86

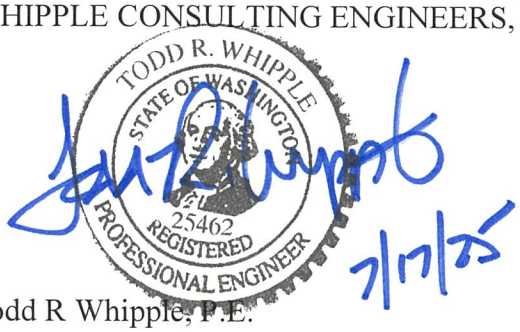
As shown in Table 2, the proposed project under the current fee schedule is anticipated to generate an impact fee of $9,660.86

CONCLUSIONS AND RECOMMENDATIONS

It is anticipated that the proposed project will 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 on county and city arterials, we believe that while the proposed project will generate trips on the transportation system, that those trips will have a minimal impact on the transportation system. Therefore, we recommend that the project pay the City of Spokane Traffic Impact Fee as allowed by the current code at the time of building permit, and that the project should 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 (Vicinity Map, Preliminary Site Plan, Trip Dist. %)

cc: Sponsor
File

APPENDIX

1. Vicinity Map

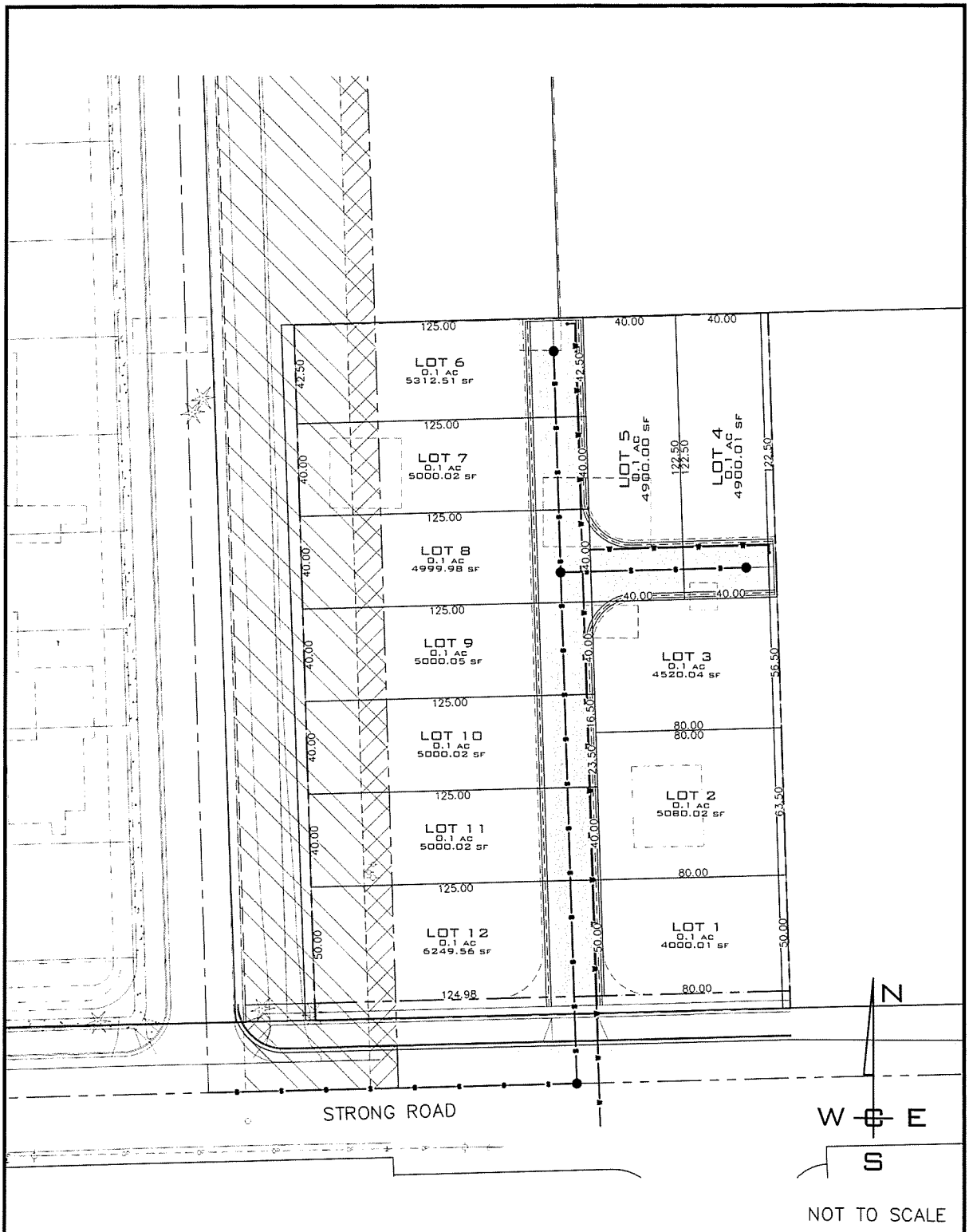
2. Site Plan

3. AM Trip Distribution by Percentage

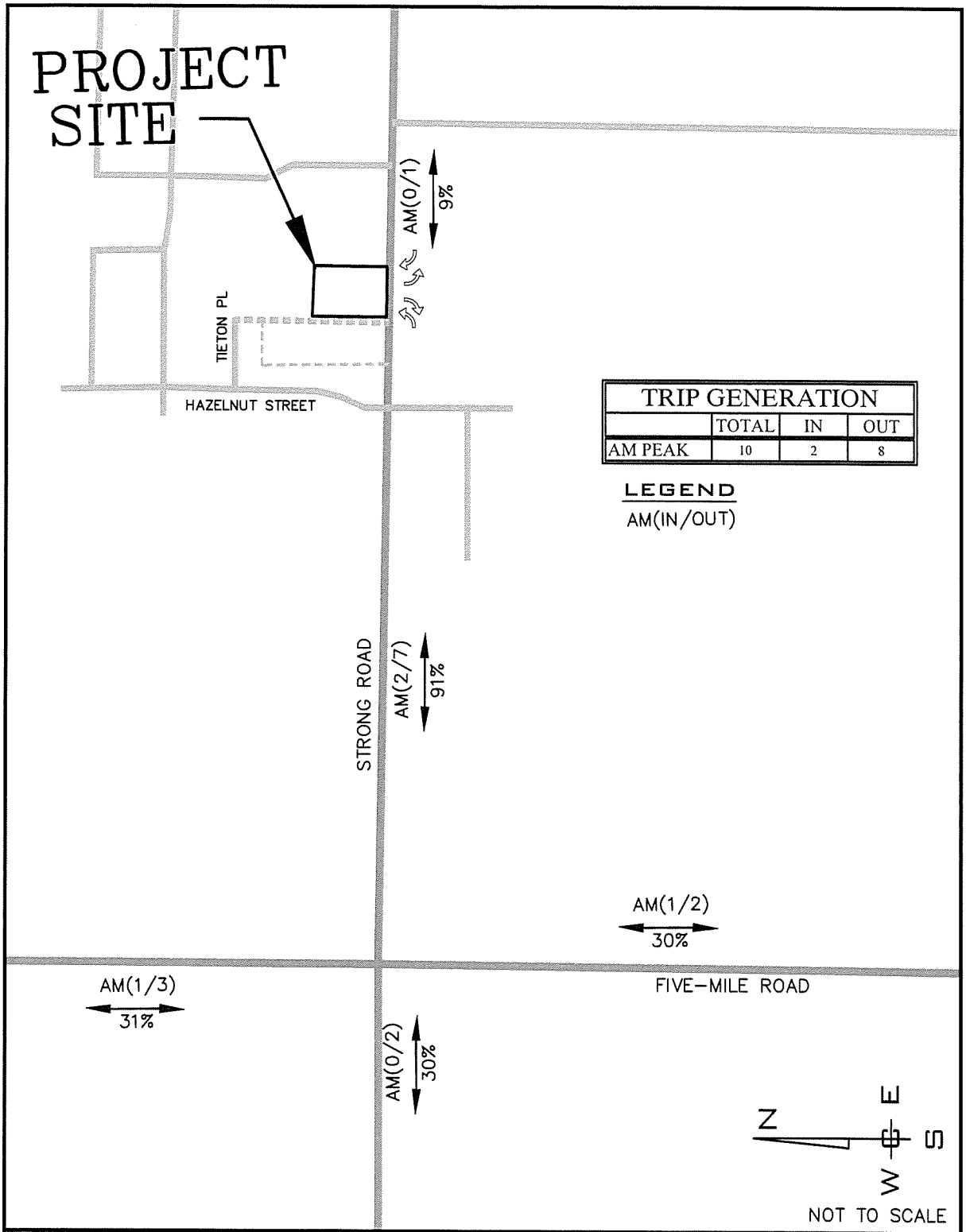
4. PM Trip Distribution by Percentage

5. ITE WEB Trip Gen

PROJ #: 25-4026 DATE: 07/09/25 DRAWN: MTR APPROVED: TRW	TRIP GENERATION & DISTRIBUTION **STRONG ROAD SUBDIVISION** 2120 W STRONG 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	



PROJ #: 25-4026 DATE: 07/09/25 DRAWN: MTR APPROVED: TRW	TRIP GENERATION & DISTRIBUTION **STRONG ROAD SUBDIVISION** 2120 W STRONG 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 2	**PRELIMINARY SITE PLAN**	



TRIP GENERATION			
	TOTAL	IN	OUT
AM PEAK	10	2	8

LEGEND

AM(IN/OUT)

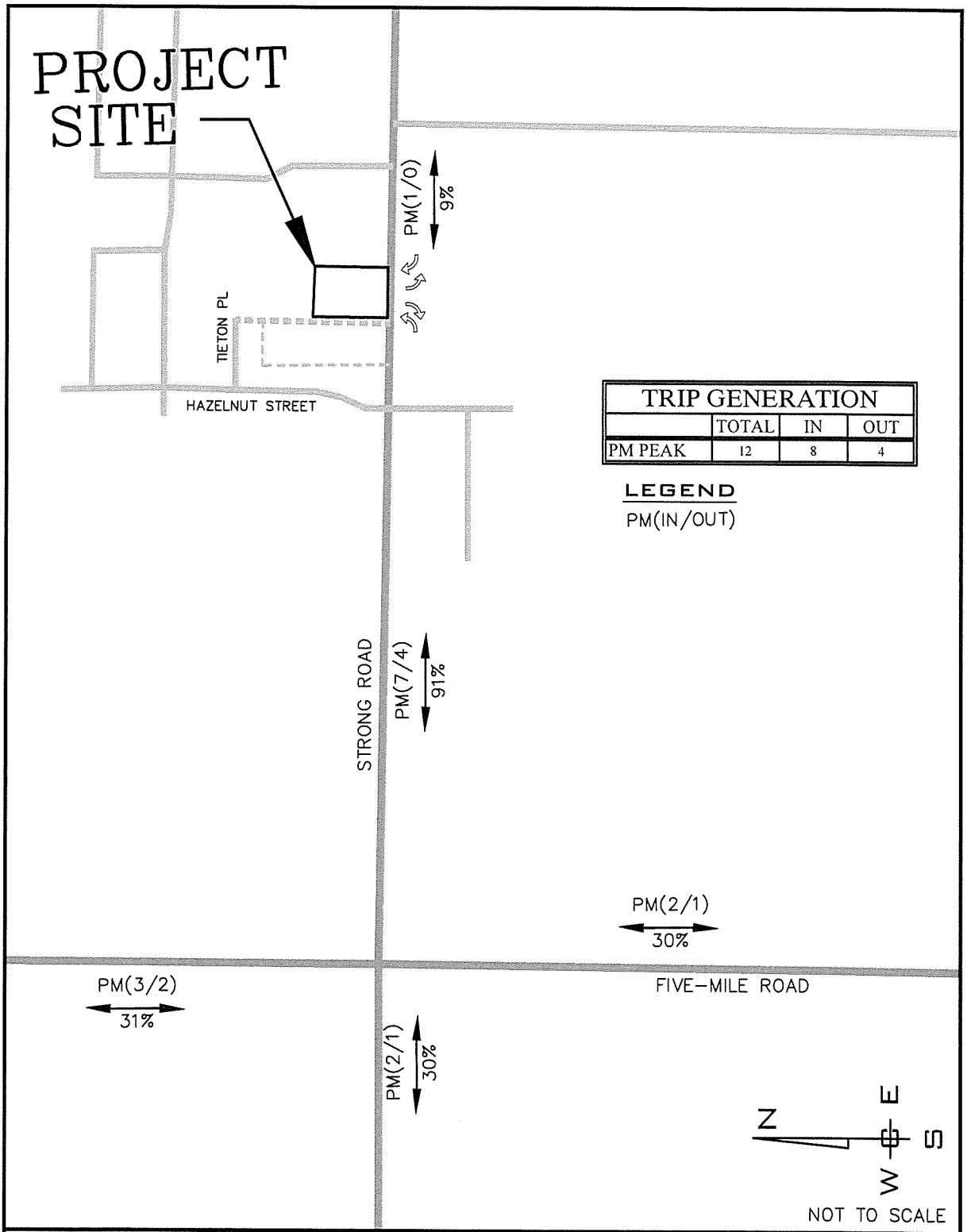
PROJ #: 25-4026
DATE: 07/09/25
DRAWN: MTR
APPROVED: TRW

TRIP GENERATION & DISTRIBUTION
STRONG ROAD SUBDIVISION
2120 W STRONG ROAD
SPOKANE, WASHINGTON

FIGURE 3

PROJECT AM 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	12	8	4

LEGEND

PM(IN/OUT)

PROJ #: 25-4026
DATE: 07/09/25
DRAWN: MTR
APPROVED: TRW

TRIP GENERATION & DISTRIBUTION
STRONG ROAD SUBDIVISION
2120 W STRONG ROAD
SPOKANE, WASHINGTON

FIGURE 4

PROJECT PM 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

ITETripGen Web-based App

Help | Ben Goodmansen

Graph Look Up

Query | Filter

DATA SOURCE: Trip Generation Manual, 11th Ed

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

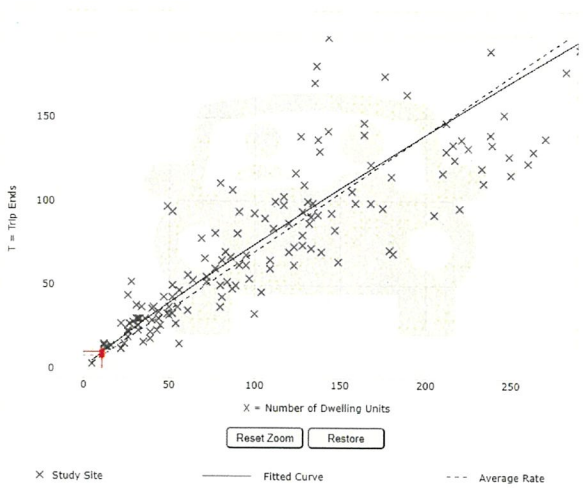
INDEPENDENT VARIABLE (IV): Dwelling Units

TIME PERIOD: Weekday, Peak Hour of Adjacent Street Traffic

TRIP TYPE: Vehicle

ENTER IV VALUE TO CALCULATE TRIPS: 11 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 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: 8 (Total), 2 (Entry), 6 (Exit)
Fitted Curve: 10 (Total), 2 (Entry), 8 (Exit)

ITETripGen Web-based App

Help | Ben Goodmansen

Graph Look Up

Query | Filter

DATA SOURCE: Trip Generation Manual, 11th Ed

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

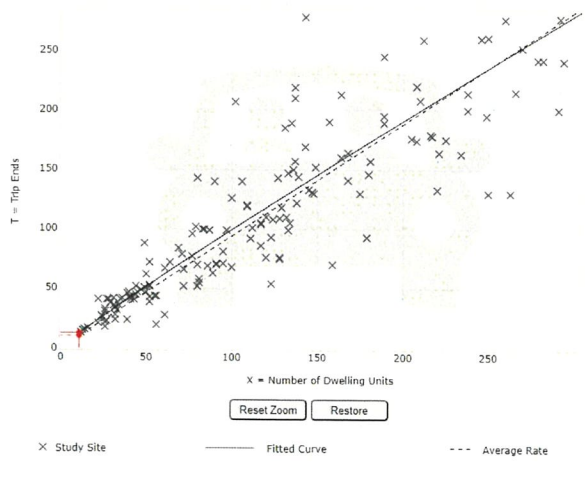
INDEPENDENT VARIABLE (IV): Dwelling Units

TIME PERIOD: Weekday, Peak Hour of Adjacent Street Traffic

TRIP TYPE: Vehicle

ENTER IV VALUE TO CALCULATE TRIPS: 11 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 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: 10 (Total), 7 (Entry), 3 (Exit)
Fitted Curve: 12 (Total), 8 (Entry), 4 (Exit)

Graph Look Up

Query Filter

DATA SOURCE:
Trip Generation Manual, 11th Ed

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

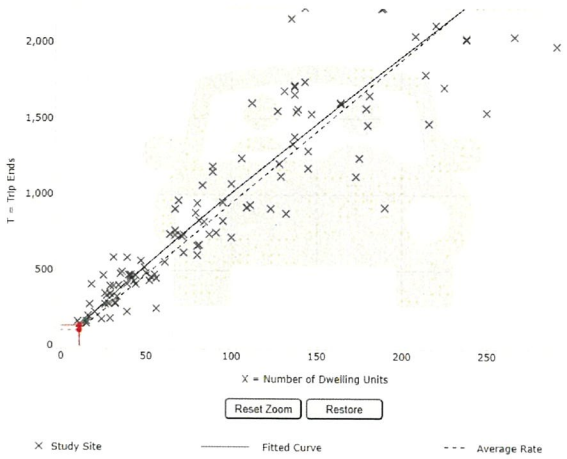
INDEPENDENT VARIABLE (IV):
Dwelling Units

TIME PERIOD:
Weekday

TRIP TYPE:
Vehicle

ENTER IV VALUE TO CALCULATE TRIPS:
11 Calculate

Data Plot and Equation



Reset Zoom Restore

× Study Site ——— Fitted Curve - - - Average Rate

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 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: 104 (Total), 52 (Entry), 52 (Exit)
Fitted Curve: 132 (Total), 66 (Entry), 66 (Exit)