Whipple Consulting Engineers, Inc.

February 10, 2020

W.O. No. 2019-2394

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

Attn: Tami Palmquist

Re: **Tangle Ridge Estates**
Boulder Ridge Drive & Tangle Heights Drive
Trip Generation and Distribution Letter

Dear Tami:

This Trip Generation and Distribution Letter (TGDL) is for a proposed 45-Lot Single-Family Residential development located to the east of the intersection of Boulder Ridge Drive & Tangle Heights Drive/Basalt Ridge Drive. 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.

PROJECT DESCRIPTION

The proposed site, as shown on Figure 2 Preliminary Site Plan, proposes the development of 12.15 acres +/- into 45 Single-Family Residential lots The property is currently undeveloped with trees, field grass and weeds. As shown on the preliminary site plan, the development is proposed to extend Boulder Ridge Drive east into the project site to intersect with a new north-south road, Boulder Court. The Boulder Court roadway extends south from Boulder Ridge Drive to a cul-de-sac at the southern boundary.

VICINITY / SITE PLAN

The site is currently zoned as Residential Single Family (RSF). The subject property is located in a portion of NE ¼ Section 07, T 24 N., R 43 E., W.M. The parcel number for the project is 34071.0040. The surrounding areas are developed as single family residential land uses to the west, north, & east. To the south is the City limit boundary and undeveloped rural property.

TRIP GENERATION AND DISTRIBUTION

Trip Types

The proposed land use 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 10th 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 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.

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. 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, 10th 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 Use

For the proposed 45 lot development, Land Use Code LUC#210, Single Family Detached Housing was used to establish the number of additional potential trips generated by the proposed land use. The trip generation rates 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

No. of Dwelling Units	AM Peak Hour			PM Peak Hour		
	Vol. @ 0.74 trips per Unit	Directional Distribution		Vol. @ 0.99 trips per Unit	Directional Distribution	
		25% In	75% Out		63% In	37% Out
45	34	8	26	45	28	17

Average Daily Trip Ends (ADT)		
Units	Rate	ADT
45	9.44	425

As shown in Table 1, the land use of the development is anticipated to generate 34 trips in the AM peak hour with 8 trips entering the site and 26 trips exiting the site. In the PM peak hour, the land use of the development is anticipated to generate 45 trips with 28 trips entering the site and 17 trips exiting the site. The land use of the development is anticipated to generate 425 average daily trips to/from the project.

TRIP DISTRIBUTION

As shown on the site plan, the site will be accessed by Boulder Ridge Drive (please see Figure 2, Site Plan). It is anticipated that the residents of the site will generally use the following roadways:

Parkridge Boulevard is generally a north-south, two-way, 2-lane local access road that extends south from Eagle Ridge Boulevard through Basalt Ridge Drive, Pheasant Ridge Drive Woodhaven Drive, and Siena Peak Drive before curving east and intersecting with Tangle Heights Drive. Parkridge Boulevard primarily serves residential land uses. The speed limit on Parkridge Boulevard is 25 MPH

Basalt Ridge Drive is an east-west, two-way, 2-lane local access road that extends east from Parkridge Boulevard through Pheasant Ridge Drive, Woodhaven Drive, Siena Peak Drive, and Forest Ridge Drive before curving south, going through Boulder Ridge Drive and transitioning into Tangle Heights Drive. Basalt Ridge Drive primarily serves residential land uses. The speed limit on Basalt Ridge Drive is 25 MPH.

Tangle Heights Road is a north-south, two-way, 2-lane local access road that extends south from Boulder Ridge Drive through Parkridge Boulevard and then terminating 100ft after. Tangle Heights Road primarily serves residential land uses. The speed limit on Tangle Heights Road is 25 MPH.

Cedar Road is a north-south, two-way, 2-lane collector road. Cedar Road extends north from Gibbs Road within the project area and goes through Taylor Road, White Road, Eagle Ridge Boulevard before continuing north and then merging with Cheney-Spokane Road. Cedar Road primarily serves residential land uses. The speed limit on Cedar Road is 30 MPH.

Eagle Ridge Boulevard is an east-west, two-way, 2-lane collector road used to access the existing homes on Eagle Ridge Boulevard. Eagle Ridge Boulevard extends west from Meadow Lane Road which connects to Interstate 195. Eagle Ridge Boulevard primarily serves residential. The speed limit on Eagle Ridge Boulevard is 30 MPH.

Meadow Lane Road is generally a north-south, two-way, 2-lane Collector and local access road that crosses Highway 195 as a collector and while climbing the hillside intersects with Eagle Ridge Boulevard. Meadow Lane Road continues as a local access road and proceeds south while climbing the hill and serving residential land uses. The Speed limit of Meadow Lane Road is 30 MPH and 25 MPH respectfully.

Considering many factors such as the surrounding transportation facilities, typical commuting patterns, existing development in the area, and Average Daily Traffic counts, traffic for the proposed development is anticipated as follows: 35% of trips are anticipated to travel to/from the north via Cedar Road. 5% of trips are anticipated to travel to/from the south via Cedar Road. 60% of trips are anticipated to travel to/from the east via Eagle Ridge Boulevard. Please see Figures 3 to see a graphical representation of this distribution.

Traffic Impact Fee

A transportation impact fee for the City of Spokane has been noted and considered here. The City of Spokane code has established transportation impact fees under Spokane Municipal Code Title 17 Chapter 17D.075.180. The proposed project is in the South Service area and as such is subject to the current impact Fee Schedule. The Impact fee rate is $1,160.64. Table 1 calculates the anticipated Impact fee for the proposed project.

Table 1 – Proposed Land Use Impact Fee

Land Use	LUC	Quantity	Unit of Measure	Fee per unit	Fee
LUC # 210 Single Family Residential	210	45	Dwellings	$1,160.64	$52,228.80

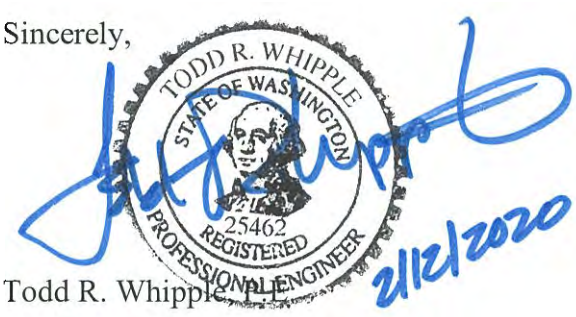
It is recommended that all improvements completed by the project be given credit against the impact fee per Spokane Municipal Code 17D.075.040 (D).

CONCLUSIONS AND RECOMMENDATIONS

It is anticipated that this project will generate 34 AM peak hour trips and 45 PM peak hour trips. Based upon the number of anticipated trips, and the distribution of those trips on city collectors, 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 call at (509) 893-2617.

Sincerely,



Todd R. Whipple, P.E.

TRW/bng

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

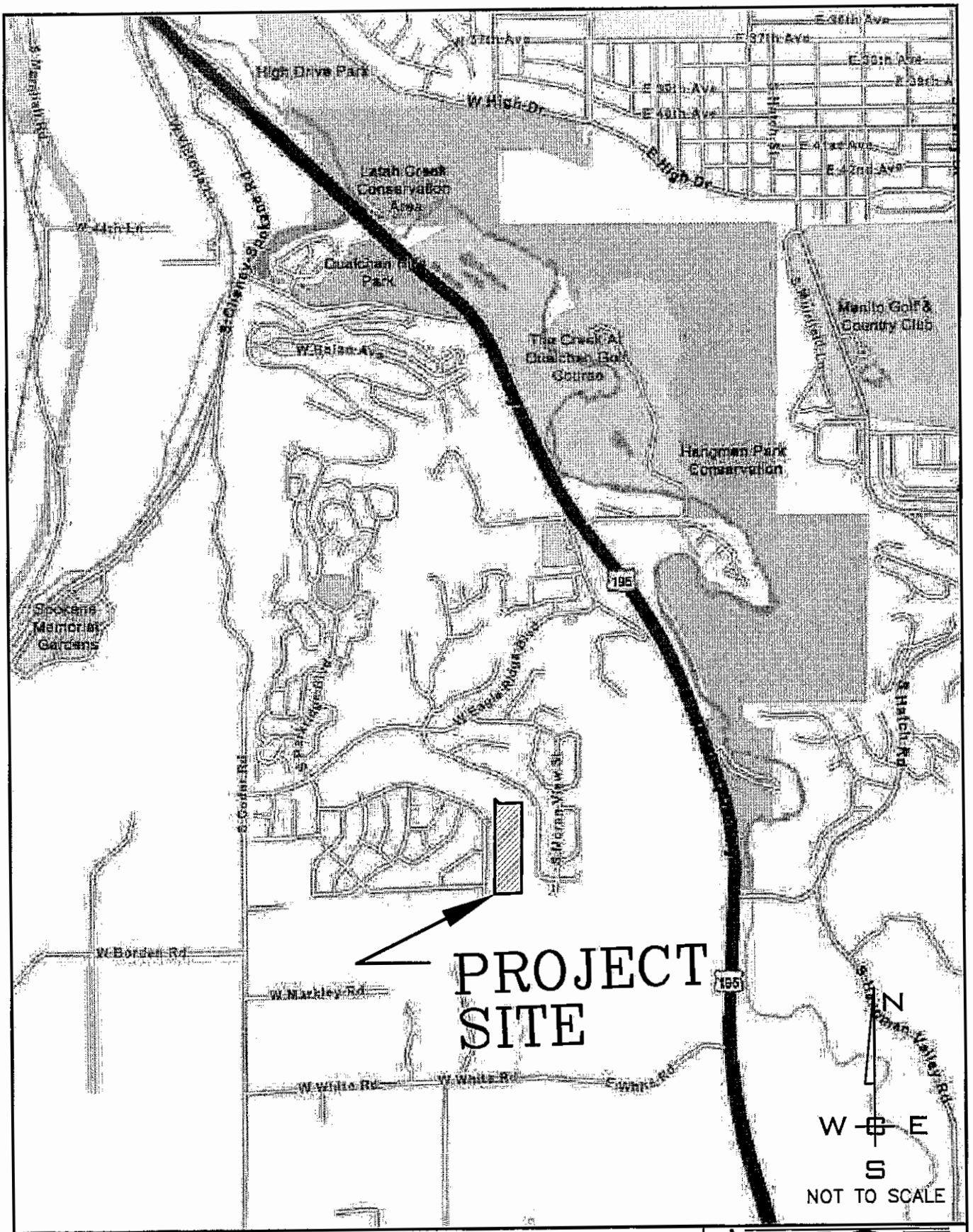
cc: Sponsor
File

APPENDIX

1. Vicinity Map

2. Preliminary Site Plan

3. Project Trip Distribution



PROJ #: 19-2394 DATE: 02/06/20 DRAWN: KMK APPROVED: TRW	TRIP GENERATION & DISTRIBUTION **TANGLE RIDGE** BOULDER RIDGE DR. & TANGLE HEIGHTS DR. 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	

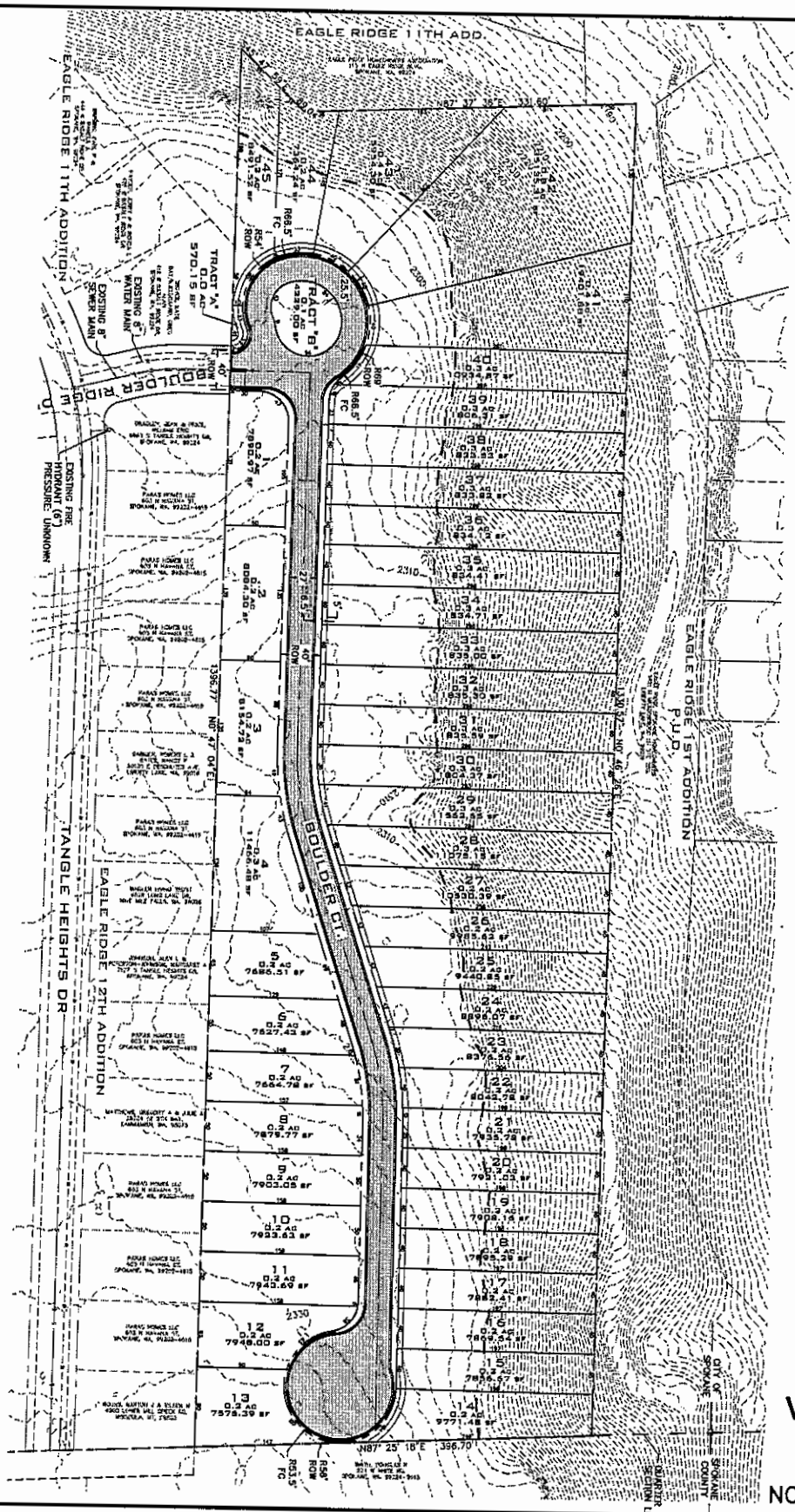


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FIGURE 2	PRELIMINARY SITE PLAN	

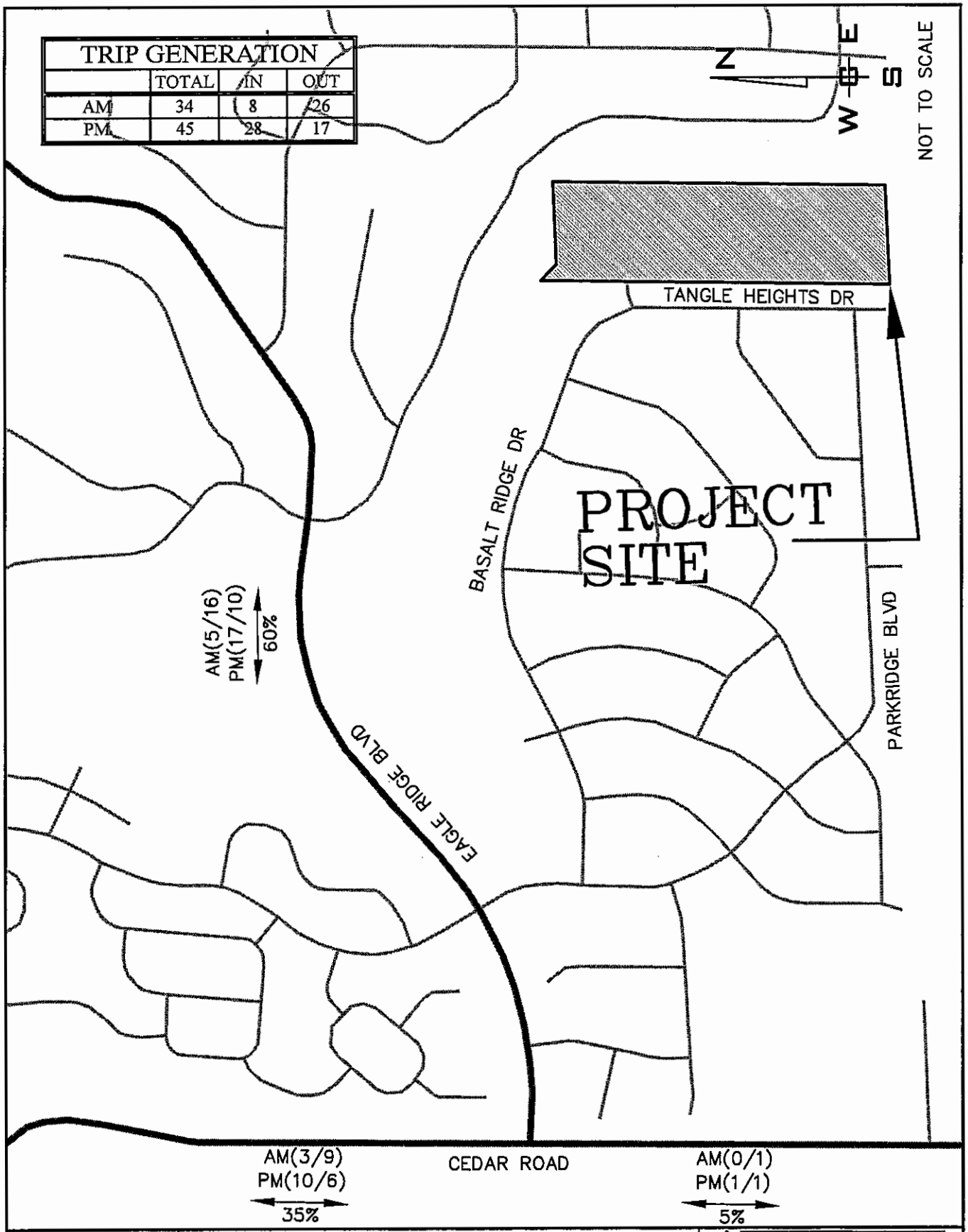

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FIGURE 3	PROJECT TRIP DISTRIBUTION	