

## MEMORANDUM

To: Lyndsey Fedak, PE – The Blueline Group, LLC  
From: Matthew Palmer, PE – Kimley-Horn and Associates, Inc.  
Date: October 9, 2023  
Subject: 2825 W Mercer Way, KH #090223177



The purpose of this memorandum is to summarize and address the differences the revised site plan dated August 30, 2023, might have on the August 2021 Traffic Impact Analysis (TIA) created by Gibson Traffic Consultants, Inc. Gibson Traffic Consultants, Inc. is now part of Kimley-Horn and Associates, Inc. and I produced the original TIA. The number of proposed single-family residences is to remain the same with 14 units. The primary difference with the new site plan is there is now a north-south private driveway that connects SE 28<sup>th</sup> Street to SE 30<sup>th</sup> Street with six (6) residences having access to this private driveway and can now go to either SE 28<sup>th</sup> Street or SE 30<sup>th</sup> Street. The number of residences taking direct access off of 62<sup>nd</sup> Avenue SE will remain at six (6) and there will be two (2) residences taking direct access off of SE 28<sup>th</sup> Street.

### Trip Generation

Although the number of single-family residences will remain the same with 14 proposed, the analysis in the August 2021 TIA was conducted using data in the Institute of Transportation Engineers (ITE) Trip Generation, 10<sup>th</sup> Edition + Supplement (2020). This resulted in 132 ADT, 10 AM, and 14 PM peak-hour trips. The Trip Generation, 11<sup>th</sup> Edition (2021) came out at the end of the year and had slightly lower trip generation rates for the ADT (9.43), AM (0.70), and PM (0.94) peak-hours. The updated trip generation results in 132 ADT, 10 AM, and 13 PM peak-hour trips. The only change would be the reduction of one (1) PM peak-hour trip which would be an inbound trip based on the same inbound/outbound split.

### Trip Distribution

The trip distribution included in the August 2021 TIA is not anticipated to change with the revised site plan as the trip distribution and study intersections analyzed would be impacted by the same percentage of trips. The only thing that would change and would reduce the impact would be the removal of one (1) inbound PM peak-hour trip.

## Level of Service Analysis

Per discussions with the client the horizon year for the build-out of the development will remain in 2024. Therefore, the level of service analysis conducted in the August 2021 TIA would still be valid as it was conducted for a build-out year of 2024 and for one (1) additional inbound PM peak-hour trip. In addition, the change in access for potentially three (3) residences is not anticipated to impact the analysis as to be conservative all of the development trips had been added to the intersection of W Mercer Way at SE 28<sup>th</sup> Street. The residences with access to the north-south private driveway are anticipated to balance and use SE 28<sup>th</sup> Street or SE 30<sup>th</sup> Street whichever street is the most convenient. The level of service results in the August 2021 TIA show that the study intersections operated acceptable level of service B with very minor delay. It would be anticipated that W Mercer Way at SE 30<sup>th</sup> Street would operate at a similar or better level of service with there being even fewer development trips impacting SE 30<sup>th</sup> Street.

## Traffic Mitigation

In the August 2021 TIA, the City of Mercer Island traffic mitigation fee was \$4,533.70 per new unit based on the Residential Fee Schedule. In 2023, that fee is \$4,153 per new unit based on the Residential Fee Schedule. There will be 14 new units and the development will have a mitigation fee of \$58,142.00.

## Conclusion

Based on the revised site plan having the same number of units as the August 2021 TIA, the localized change in access not changing the overall trip distribution, the horizon build-out year remaining 2024, and the decrease in trip generation calculations for the PM peak-hour. It is anticipated that the level of service analysis is still valid from the August 2021 TIA. The City of Mercer Island traffic mitigation fees should be updated to the new 2023 fees at \$4,153 per new unit based on the Residential Fee Schedule. There will be 14 new units and the development will have a mitigation fee of \$58,142.00.

## Attachments

Revised Site Plan	A-1
August 2021 TIA pages	A-2 to A-9
ITE 11 <sup>th</sup> Edition Data	A-10 to A-13
Mercer Island Impact Fees	A-14 to A-15



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**GTC**

Gibson Traffic Consultants, Inc.  
2813 Rockefeller Avenue  
Suite B  
Everett, WA 98201  
425.339.8266

# 2825 W Mercer Way Traffic Impact Analysis

Jurisdiction: City of Mercer Island

August 2021



GTC #19-199

## 5. FUTURE CONDITIONS

### 5.1 Trip Generation

Trip generation calculations for the proposed development are based on national research data for land uses contained in the Institute of Transportation Engineers' (ITE) *Trip Generation, 10<sup>th</sup> Edition + Supplement* (2020). The trip generation calculations for the development are based on the average trip generation rates for ITE Land Use Code 210, Single-Family Detached. The 2825 W Mercer Way development is proposing to construct 14 single-family detached units. The trip generation for the development is summarized in Table 3.

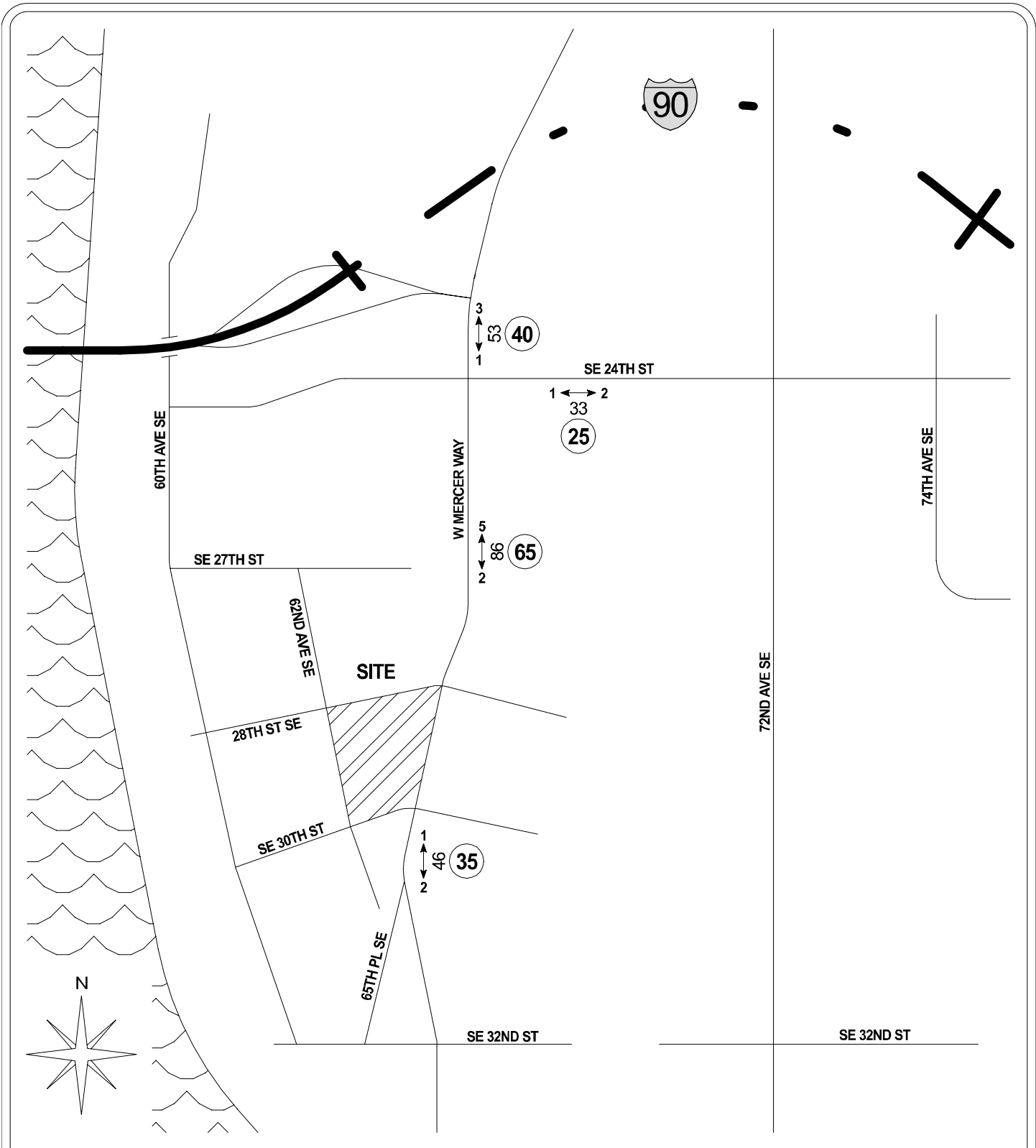
**Table 3: Trip Generation Summary**

2825 W Mercer Way 14 New SFD Units	Average Daily Trips			AM Peak-Hour Trips			PM Peak-Hour Trips		
	Inbound	Outbound	Total	Inbound	Outbound	Total	Inbound	Outbound	Total
Generation Rate	9.44 trips per unit			0.74 trips per unit			0.99 trips per unit		
Splits	50%	50%	100%	25%	75%	100%	63%	37%	100%
Trips	66	66	132	3	7	10	9	5	14

The 2825 W Mercer Way development will generate approximately 132 average daily trips with 10 AM peak-hour trips and 14 PM peak-hour trips.

### 5.2 Trip Distribution

The trip distribution is based on local counts and draw areas in the site vicinity. It was assumed for the worst-case analysis that all the development traffic will utilize the intersection of W Mercer Way at SE 28<sup>th</sup> Street. There would be 65% to/from the north and 35% to/from the south. At the intersection of W Mercer Way at SE 24<sup>th</sup> Street the sixty-five percent will split with forty percent continuing north and twenty-five percent heading to/from the east. A detailed trip distribution for the AM and PM peak-hours is included in Figure 4 and Figure 5, respectively.



**GIBSON TRAFFIC CONSULTANTS**

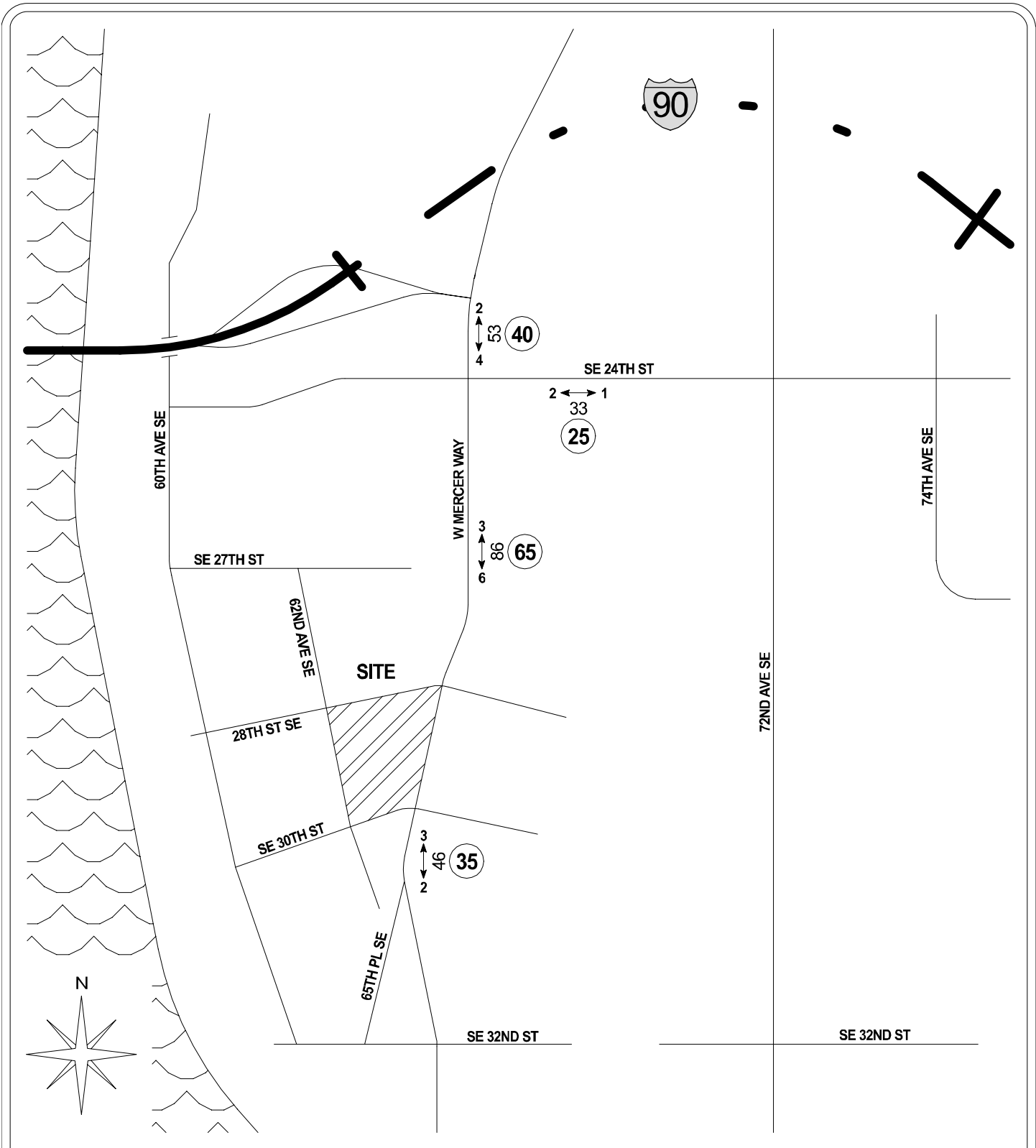
**TRAFFIC IMPACT STUDY  
GTC #19-199**

**2825 W MERCER WAY  
14 NEW SINGLE-FAMILY  
DETACHED UNITS**

**LEGEND**  
 AM ← AWDT → PEAK  
 (30)  
 NEW DAILY TRAFFIC  
 NEW AM PEAK HOUR TRIPS  
 TRIP DISTRIBUTION %

**FIGURE 4  
DEVELOPMENT  
TRIP DISTRIBUTION  
AM PEAK-HOUR**

**MERCER ISLAND**



**GIBSON TRAFFIC CONSULTANTS**

**TRAFFIC IMPACT STUDY  
GTC #19-199**

**2825 W MERCER WAY  
14 NEW SINGLE-FAMILY  
DETACHED UNITS**

**LEGEND**  
 PM ← AWDT → PEAK  
 (30)  
 NEW DAILY TRAFFIC  
 NEW PM PEAK HOUR TRIPS  
 TRIP DISTRIBUTION %

**FIGURE 5  
DEVELOPMENT  
TRIP DISTRIBUTION  
PM PEAK-HOUR**

**MERCER ISLAND**

### 5.3 2024 Baseline Volumes and Level of Service

The 2024 baseline (future without development) turning movement volumes are estimated by applying a 0.5% annual compounded growth rate to the existing turning movement volumes, per the Traffic Impact Analysis Guidelines. The 2024 baseline AM and PM peak-hour turning movement volumes are shown in Figure 6 and Figure 7, respectively. Under the 2024 baseline conditions, the study intersections will continue to operate at LOS B. The level of service is summarized in Table 4.

### 5.4 2024 Future with Development Volumes and Level of Service

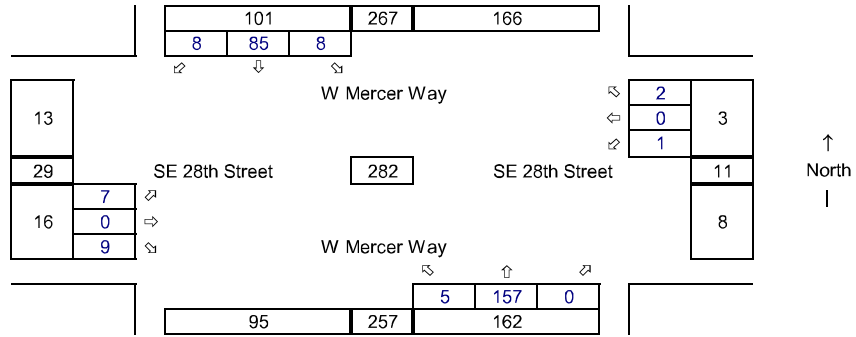
The 2024 future with development turning movement volumes are derived by adding the development trips to the 2024 baseline turning movement volumes. The 2024 future with development AM and PM peak-hour turning movement volumes are shown in Figure 8 and Figure 9, respectively. Under the 2024 future with development conditions, the study intersections will continue to operate at acceptable LOS B. The level of service is summarized in Table 4.

**Table 4: Future Level of Service Summary**

Intersection	Time Period	Normalized Existing Conditions		2024 Baseline Conditions		2024 Future with Development Conditions	
		LOS	Delay	LOS	Delay	LOS	Delay
1. W Mercer Way at SE 28 <sup>th</sup> Street	AM	B	10.9 sec	B	11.0 sec	B	11.3 sec
	PM	B	12.1 sec	B	12.2 sec	B	12.2 sec
2. W Mercer Wat at SE 24 <sup>th</sup> Street	AM	B	10.7 sec	B	11.1 sec	B	11.2 sec
	PM	B	11.0 sec	B	11.3 sec	B	11.4 sec



Synchro ID: 1  
**Existing**  
 Average Weekday  
 AM Peak Hour  
 Year: 4/15/21  
 Data Source: TDG



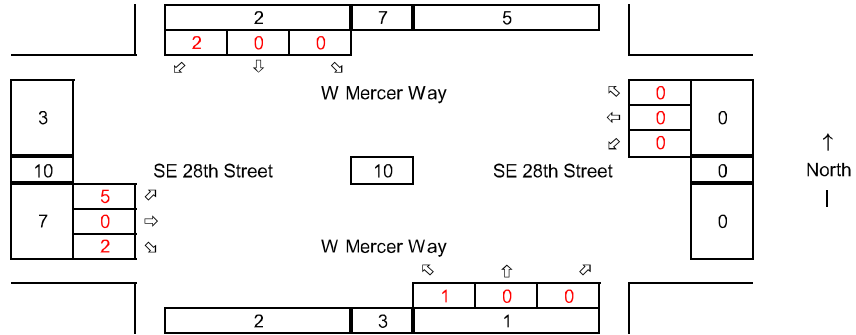
**Normalized Existing (COVID-19 Factor)**  
 Average Weekday  
 AM Peak Hour  
 Percent Change: 25.0%  
 Based on I-90 Volumes during that week. Northbound balanced with SE 24th Street by adding 128 NBT trips.



**Future without Project**  
 Average Weekday  
 AM Peak Hour  
 Year: 2024  
 Growth Rate = 0.5%  
 Years of Growth = 3  
 Total Growth = 1.0151



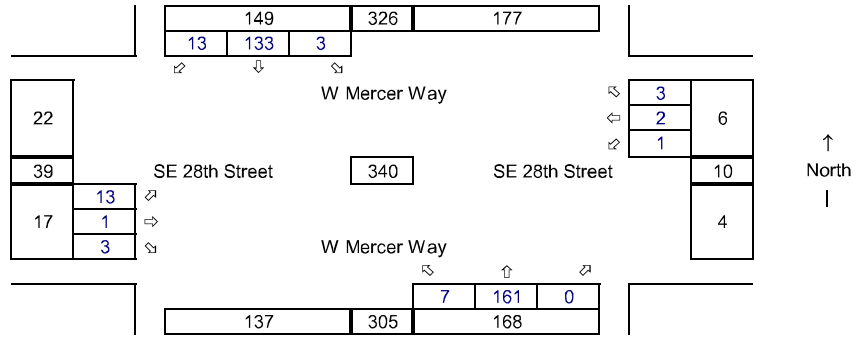
**Total Project Trips**  
 Average Weekday  
 AM Peak Hour



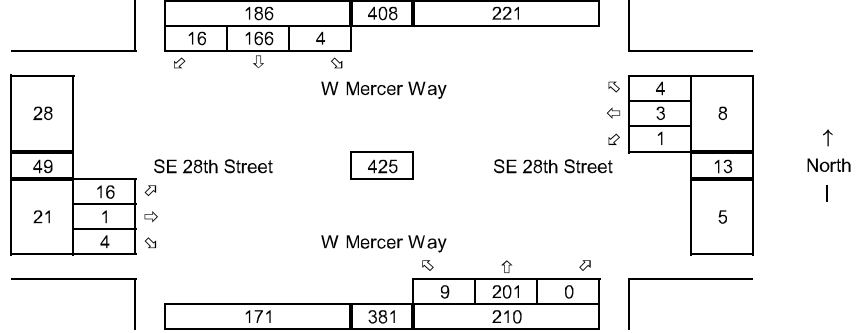
**Future with Project**  
 Average Weekday  
 AM Peak Hour



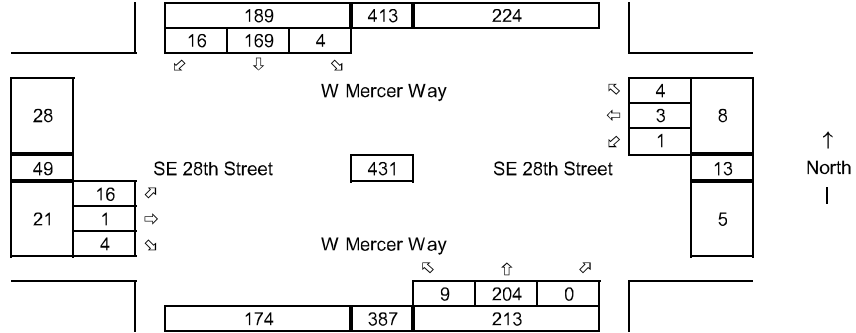
Synchro ID: 1  
**Existing**  
 Average Weekday  
 PM Peak Hour  
 Year: 4/14/21  
 Data Source: TDG



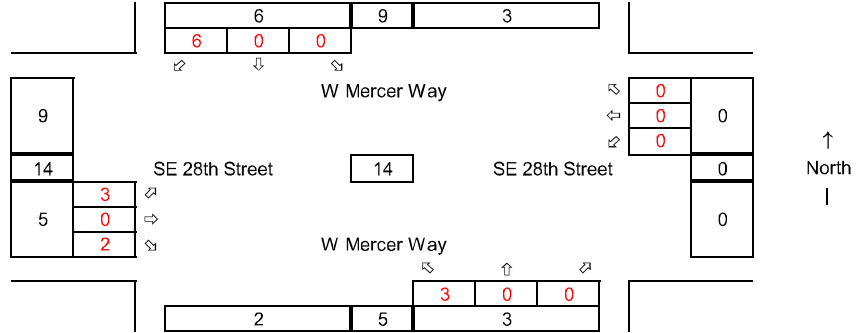
**Normalized Existing (COVID-19 Factor)**  
 Average Weekday  
 PM Peak Hour  
 Percent Change: 25.0%  
 Based on I-90 Volumes during that week. Northbound and Southbound volumes higher than SE 24th, no modifications



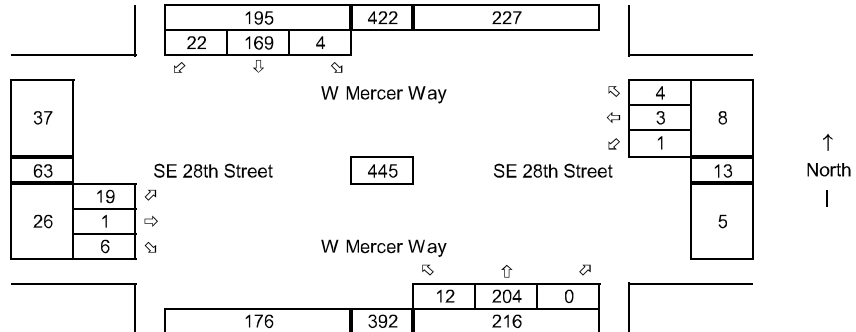
**Future without Project**  
 Average Weekday  
 PM Peak Hour  
 Year: 2024  
 Growth Rate = 0.5%  
 Years of Growth = 3  
 Total Growth = 1.0151

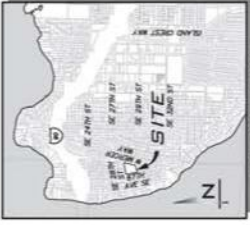


**Total Project Trips**  
 Average Weekday  
 PM Peak Hour



**Future with Project**  
 Average Weekday  
 PM Peak Hour





**VICINITY MAP**  
 NOT TO SCALE

**PROJECT TEAM**  
**APPLICANT:**  
 88 WOODLAND AVE SE  
 SEASIDE, WA 98148  
 PHONE: (206) 441-1111  
 FAX: (206) 441-1112  
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**VERTICAL DATUM:**  
 CITY OF MERCER ISLAND  
**BENCHMARK:**  
 8 AND 1/2" x 8" x 4" MARBLE AT INTERSECTION OF SE 28TH ST  
 & 62ND AVE SE  
 POINT ELEVATION = 78.4  
**LEGAL DESCRIPTION:**  
 BLOCK 12 AND 13, EAST-WEST ADDITION AREA 1ST,  
 TRACT 2009, PRIVATE ALLOTMENT, SITUATED IN THE  
 CITY OF MERCER, WASHINGTON  
 TOGETHER WITH WACATED 83RD AVENUE SE (VACATED  
 1988) AND 62ND AVENUE SE (VACATED  
 1988), TOGETHER WITH ALL INTERESTS, RIGHTS,  
 AND CLAIMS IN AND TO SAID TRACTS, SUBJECT TO ANY  
 AND ALL RECORDS OF RECORDS, EASEMENTS, RIGHTS OF  
 WAY, AND OTHER MATTERS AFFECTING SAID TRACTS.

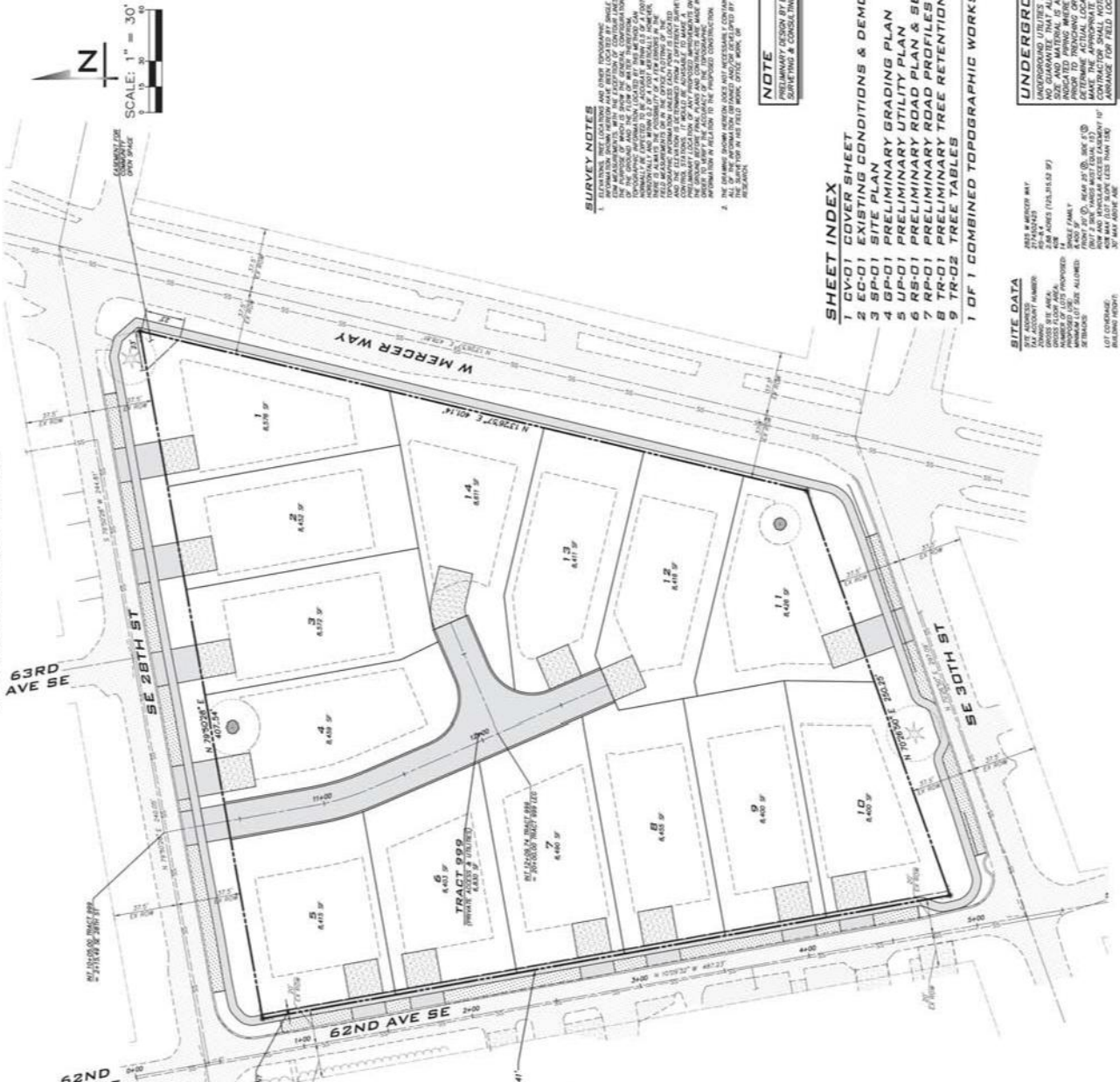
**NOTE:**  
 DESIGN BY BLUELINE BASED ON SURVEY MAP PROVIDED BY 4 SITE  
 SURVEYING & CONSULTING

**SHEET INDEX**  
 1 CV-01 COVER SHEET  
 2 CV-01 EXISTING CONDITIONS & DEMO PLAN  
 3 SP-01 SITE PLAN  
 4 GP-01 PRELIMINARY UTILITY PLAN  
 5 UP-01 PRELIMINARY ROAD PLAN & SECTIONS  
 6 RP-01 PRELIMINARY ROAD PROFILES  
 7 TR-01 PRELIMINARY TREE RETENTION AND REPLACEMENT PLAN  
 8 TR-02 TREE TABLES  
 1 OF 1 COMBINED TOPOGRAPHIC WORKSHEET

**UNDERGROUND UTILITY NOTE**  
 UNDERGROUND UTILITIES ARE SHOWN IN THE APPROXIMATE LOCATION. THERE IS  
 NO GUARANTEE AS TO THE ACCURACY OF THE INFORMATION SHOWN. THE  
 INDICATED SPRING WERE CROSSING, INTERFERING, OR CONNECTIONS OCCUR  
 SOIL AND MATERIALS TO BE REMOVED SHALL BE RECORDED IN ALL  
 DETERMINE THE ACTUAL LOCATION, SIZE AND MATERIAL. THE CONTRACTOR SHALL  
 MAKE THE APPROPRIATE PROVISION FOR PROTECTION OF SAID UTILITIES. THE  
 CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL NECESSARY PERMITS  
 AND SHALL BE RESPONSIBLE FOR THE PROTECTION OF ALL UTILITIES. THE  
 CONTRACTOR SHALL ADVISE THE DESIGNER OF ANY UTILITIES FOUND TO BE  
 DEEPER THAN 120" OR DEEPER THAN 120" FROM THE SURFACE OF THE  
 GROUND.



**2825 W MERCER WAY**  
 PRELIMINARY PLAT



LEGEND	
	EASEMENT
	ALLEY
	UTILITY
	ROAD
	SIDEWALK
	STORM SEWER
	SANITARY SEWER
	FIRE HYDRANT
	STREET LIGHT
	GAS MAIN
	WATER MAIN
	SEWER MAIN
	CATCH BASIN
	MANHOLE
	SURVEY POINT
	BOUNDARY LINE
	EASEMENT
	RIGHT-OF-WAY
	PROPOSED ROAD
	PROPOSED SIDEWALK
	PROPOSED STORM SEWER
	PROPOSED SANITARY SEWER
	PROPOSED FIRE HYDRANT
	PROPOSED STREET LIGHT
	PROPOSED GAS MAIN
	PROPOSED WATER MAIN
	PROPOSED SEWER MAIN
	PROPOSED CATCH BASIN
	PROPOSED MANHOLE
	PROPOSED SURVEY POINT
	PROPOSED BOUNDARY LINE
	PROPOSED EASEMENT
	PROPOSED RIGHT-OF-WAY

# Land Use: 210

## Single-Family Detached Housing

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### Description

A single-family detached housing site includes any single-family detached home on an individual lot. A typical site surveyed is a suburban subdivision.

### Specialized Land Use

Data have been submitted for several single-family detached housing developments with homes that are commonly referred to as patio homes. A patio home is a detached housing unit that is located on a small lot with little (or no) front or back yard. In some subdivisions, communal maintenance of outside grounds is provided for the patio homes. The three patio home sites total 299 dwelling units with overall weighted average trip generation rates of 5.35 vehicle trips per dwelling unit for weekday, 0.26 for the AM adjacent street peak hour, and 0.47 for the PM adjacent street peak hour. These patio home rates based on a small sample of sites are lower than those for single-family detached housing (Land Use 210), lower than those for single-family attached housing (Land Use 251), and higher than those for senior adult housing -- single-family (Land Use 251). Further analysis of this housing type will be conducted in a future edition of *Trip Generation Manual*.

### Additional Data

The technical appendices provide supporting information on time-of-day distributions for this land use. The appendices can be accessed through either the ITETripGen web app or the trip generation resource page on the ITE website (<https://www.ite.org/technical-resources/topics/trip-and-parking-generation/>).

For 30 of the study sites, data on the number of residents and number of household vehicles are available. The overall averages for the 30 sites are 3.6 residents per dwelling unit and 1.5 vehicles per dwelling unit.

The sites were surveyed in the 1980s, the 1990s, the 2000s, and the 2010s in Arizona, California, Connecticut, Delaware, Illinois, Indiana, Kentucky, Maryland, Massachusetts, Minnesota, Montana, New Jersey, North Carolina, Ohio, Ontario (CAN), Oregon, Pennsylvania, South Carolina, South Dakota, Tennessee, Vermont, Virginia, and West Virginia.

### Source Numbers

100, 105, 114, 126, 157, 167, 177, 197, 207, 211, 217, 267, 275, 293, 300, 319, 320, 356, 357, 367, 384, 387, 407, 435, 522, 550, 552, 579, 598, 601, 603, 614, 637, 711, 716, 720, 728, 735, 868, 869, 903, 925, 936, 1005, 1007, 1008, 1010, 1033, 1066, 1077, 1078, 1079

# Single-Family Detached Housing (210)

Vehicle Trip Ends vs: Dwelling Units  
On a: Weekday

Setting/Location: General Urban/Suburban

Number of Studies: 174

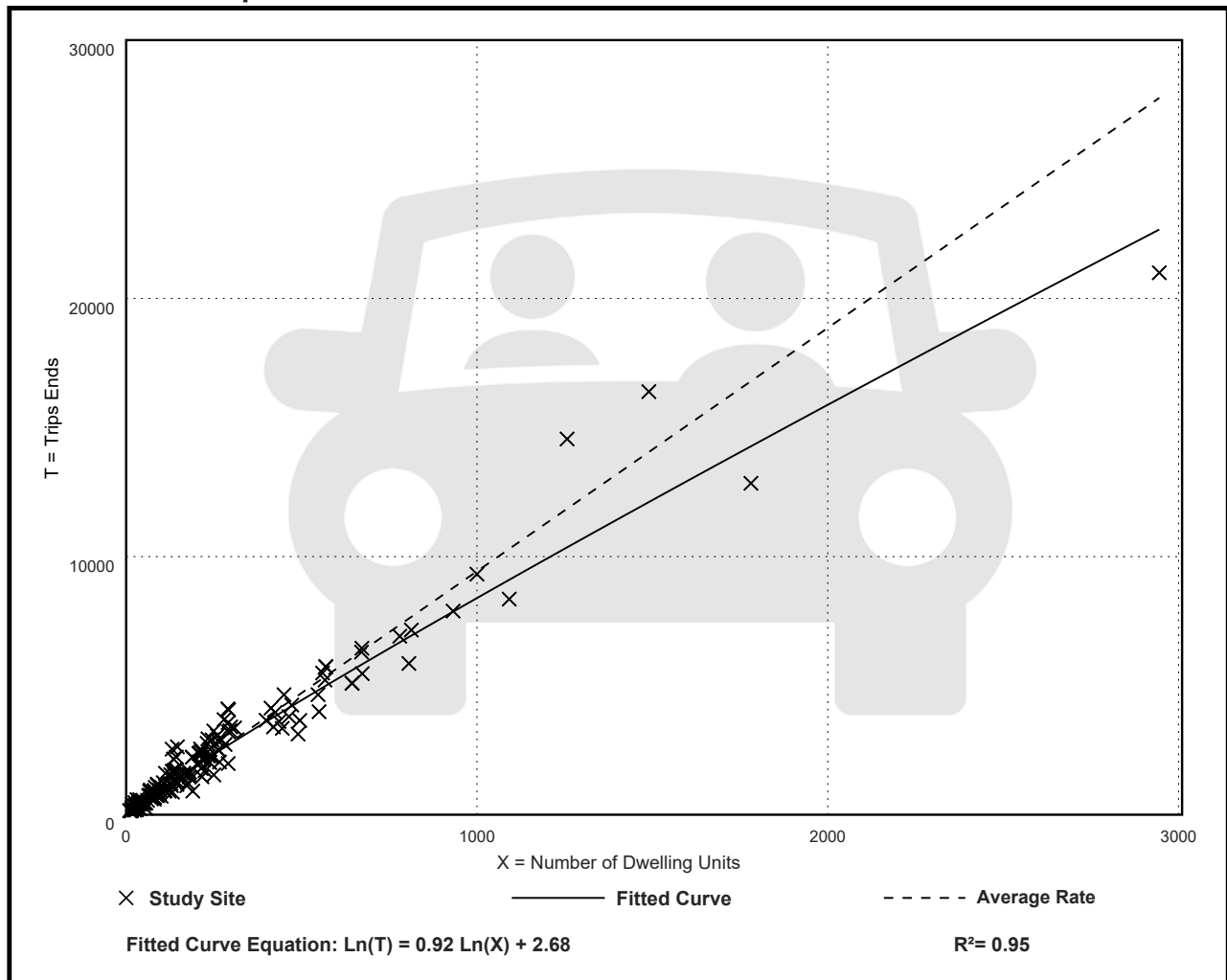
Avg. Num. of Dwelling Units: 246

Directional Distribution: 50% entering, 50% exiting

## Vehicle Trip Generation per Dwelling Unit

Average Rate	Range of Rates	Standard Deviation
9.43	4.45 - 22.61	2.13

## Data Plot and Equation



# Single-Family Detached Housing (210)

## Vehicle Trip Ends vs: Dwelling Units

On a: Weekday,

Peak Hour of Adjacent Street Traffic,

One Hour Between 7 and 9 a.m.

Setting/Location: General Urban/Suburban

Number of Studies: 192

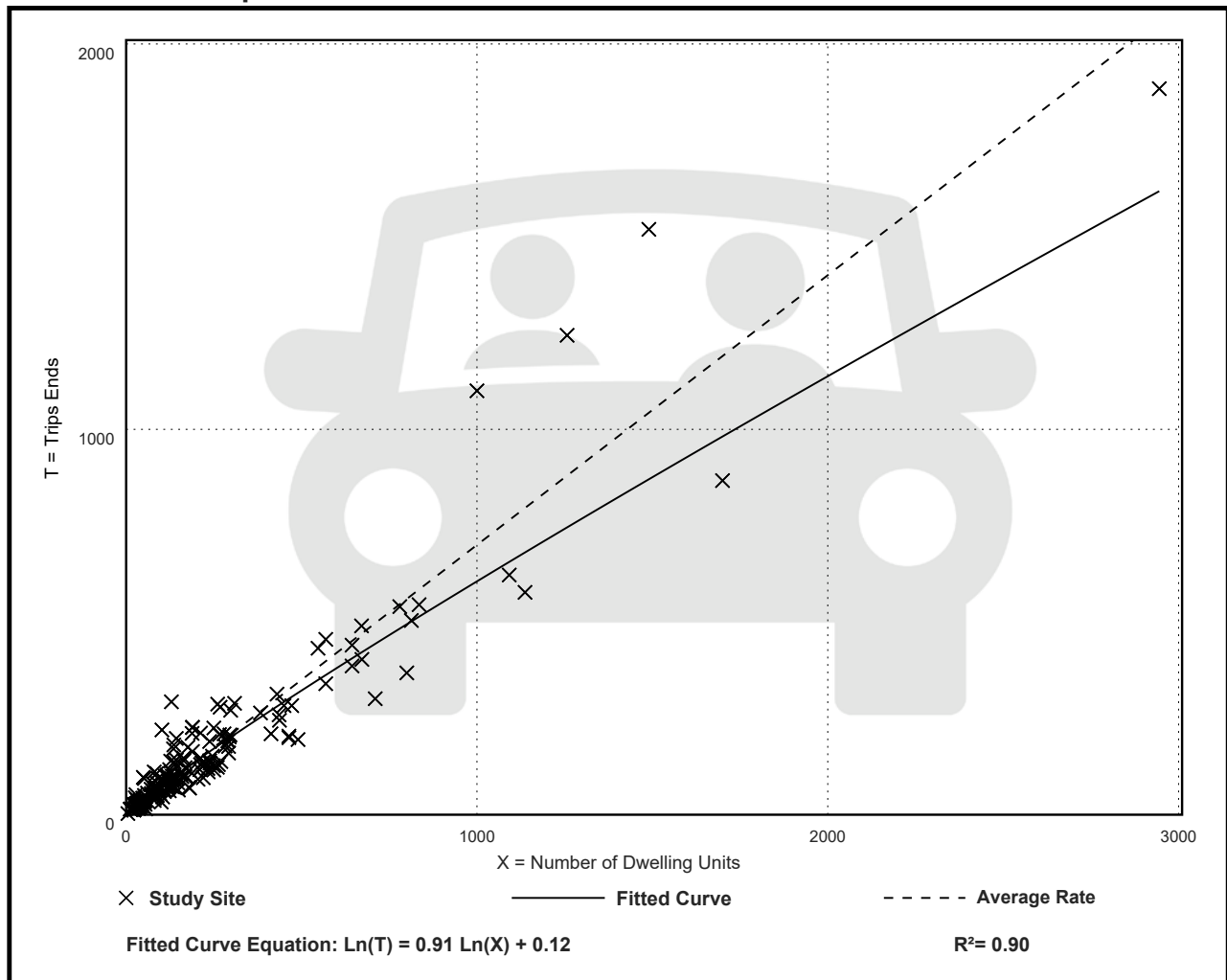
Avg. Num. of Dwelling Units: 226

Directional Distribution: 26% entering, 74% exiting

## Vehicle Trip Generation per Dwelling Unit

Average Rate	Range of Rates	Standard Deviation
0.70	0.27 - 2.27	0.24

## Data Plot and Equation



# Single-Family Detached Housing (210)

## Vehicle Trip Ends vs: Dwelling Units

On a: Weekday,

Peak Hour of Adjacent Street Traffic,

One Hour Between 4 and 6 p.m.

Setting/Location: General Urban/Suburban

Number of Studies: 208

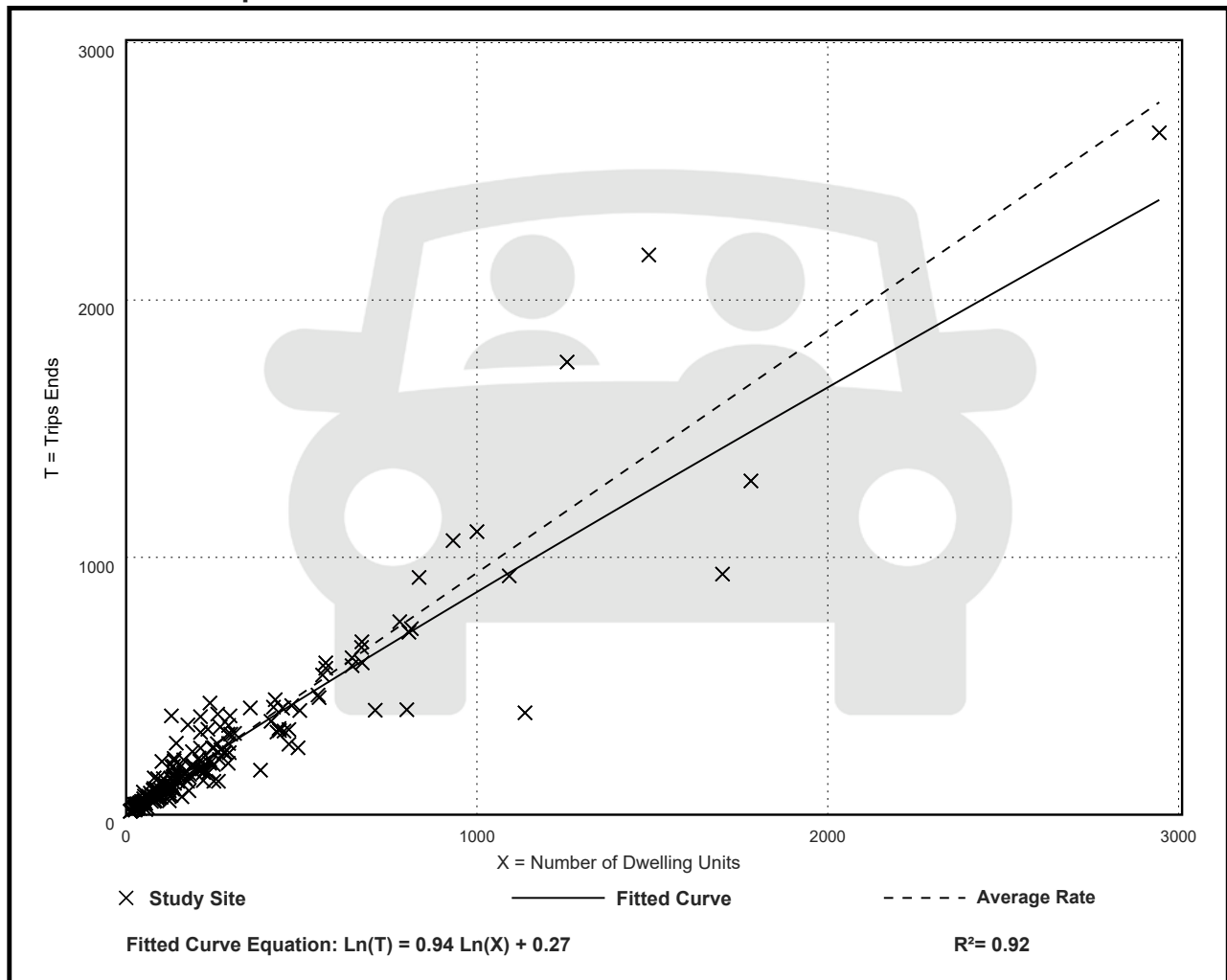
Avg. Num. of Dwelling Units: 248

Directional Distribution: 63% entering, 37% exiting

## Vehicle Trip Generation per Dwelling Unit

Average Rate	Range of Rates	Standard Deviation
0.94	0.35 - 2.98	0.31

## Data Plot and Equation





# 2023 FEE SCHEDULE

**AS OF JANUARY 1, 2023**



<b>FEE NAME</b>	<b>Minimum Hours</b>	<b>Additional Fees</b>	<b>2023</b>
<b>Subdivision (continued)</b>			
Lot Line Revision	8	Hourly Staff Rate If Min. Exceeded	\$1,272
Short Plat - Preliminary	100		\$15,900
Short Plat - Alteration	10		\$1,590
Short Plat - Final Plat	40		\$6,360
<b>Wireless Communication Facilities</b>			
New Wireless Communication Facility	50	Hourly Staff Rate If Min. Exceeded	\$7,950
New Wireless Communication Facility - 6409 Exempt	8		\$1,272
New Small Cell Deployment	2		\$318
Height Variance	65		\$10,335
<b>Fire Review Fees Associated with Land Use Applications</b>			
Fire Review of Land Use Applications	1.25	Hourly Staff Rate If Min. Exceeded	\$199
<b>C. AFFORDABLE HOUSING</b>			
Annual Fee for Monitoring Affordable Housing Units (per unit)			\$50
<b>D. IMPACT FEES</b>			
<b>Type</b>	<b>Basis of Fee</b>	<b>Fee</b>	
<b>School Impact Fees</b>			
Single Family	School impact fees reduced to zero by MISD 8/2020	\$0	
Multi Family		\$0	
<b>Transportation Impact Fees</b>			
Single Family 1-2 dwellings, per dwelling unit	2022 Transportation Impact Fee Rate Study (Fehr and Peers)	\$4,153	
Multi Family, per dwelling unit		\$1,856	
Senior Housing, per dwelling unit		\$1,237	
Care Facility, per dwelling		\$928	
Lodging, per guest room		\$2,607	
Commercial Services, per square foot of gross floor area		\$7.78	
Auto Service Center, per square foot of gross floor area		\$9.10	
Bank, per square foot of gross floor area		\$60.33	
School, per student		\$619	
Daycare, per square foot of gross floor area		\$4.91	
Institutional, per square foot of gross floor area		\$3.00	
Light Industry/Industrial Park per square foot of gross floor area		\$2.21	
Warehousing/Storage, per square foot of gross floor area		\$0.80	