Appendix D
Vehicle Miles Traveled Analysis

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May 9, 2022

Jonathan Braun
LaTerra Development, LLC
1880 Centura Park East, Suite 1017
Los Angeles, CA 90067

LLG Reference: 3-22-3563

Subject: **Northgate Industrial Park Project Vehicle Miles Traveled Assessment**
City of Sacramento

Dear Mr. Braun:

Linscott, Law & Greenspan, Engineers (LLG) has prepared this letter report for the proposed Northgate Industrial Park Project to be located at 4100 Northgate Boulevard in the City of Sacramento. The Project proposes repurposing a currently vacant 156,013 square-foot Fry's Electronics building into an industrial warehouse and constructing an additional 109,673 square-foot industrial warehouse. The Project would therefore develop approximately 265,686 square feet for warehouse industrial use. ***Figure 1*** shows the Project Area and ***Figure 2*** shows the Site Plan. The letter report aims to present the Vehicles Miles Traveled (VMT) assessment for the Project.

Included in this letter report are the following:

1. VMT Background
2. VMT Assessment
3. Conclusion

1. VMT BACKGROUND

In September 2013, the Governor's Office signed SB 743 into law, starting a process that fundamentally changes the way transportation impact analysis is conducted under CEQA. These changes include eliminating auto delay, level of service (LOS), and similar measurements of vehicular roadway capacity and traffic congestion as the basis for determining significant impacts. The justification for this paradigm shift is that Auto Delay/LOS impacts lead to improvements that increase roadway capacity and therefore induce more traffic and greenhouse gas emissions. The VMT standard for evaluating transportation impacts under CEQA became mandatory statewide on July 1, 2020.

VMT is defined as a measurement of miles traveled by vehicles within a specified region and for a specified time period. VMT is a measure of the use and efficiency of the transportation network. VMT is calculated based on individual vehicle trips generated and their associated trip lengths. VMT accounts for two-way (round trip)

travel and is estimated for a typical weekday to measure transportation impacts. The City of Sacramento's draft transportation impact guidelines is consistent with the technical advisory published by the Governor's Office of Planning and Research (OPR).

2. VMT ASSESSMENT

According to OPR's technical advisory, if a project that replaces existing VMT-generating land uses leads to an overall net decrease in VMT, the project would lead to a less-than-significant transportation impact.

To assess if the proposed Project leads to an overall net decrease in the VMT, the VMT was calculated utilizing the average daily traffic and the trip length (i.e., VMT = Project Trips x Trip Length).

The trip generation rates for the existing land use and proposed Project are based on the average trip rates in the 11th Edition of the *Trip Generation Manual* published by the Institute of Transportation Engineers (ITE). The Electronic Superstore land use was utilized for the currently vacant Fry's Electronics building and the Industrial Park land use was utilized for the proposed Project. ***Attachment A*** contains the ITE land use informational sheets. ***Table 1*** tabulates the trip generation calculations. As shown in ***Table 1***, the proposed Project is calculated to generate 896 ADT, which would replace the 6,405 ADT the existing land use was generating.

Table 1
Project Trip Generation

Land Use	Quantity	Daily Trip Ends (ADT)	
		Rate[a]	Volume
Existing: Electronic Superstore (ITE 863)	156.013 KSF	41.05 / KSF	(6,405)
Proposed: Industrial Park (ITE 130)	265.686 KSF	3.37 / KSF	896
Delta			**(5,509)**

Footnotes:
a. Trip rates obtained from ITE's *Trip Generation Manual* (11th Editions)

The trip length for the existing and proposed land uses is based on SANDAG's (*Not So) Brief Guide of Vehicular Traffic Generation Rates for the San Diego Region* (see ***Attachment B)***. For the existing Fry's Electronics, the trip length of 5.2 miles associated with a regional shopping center land use was utilized to be conservative. For the proposed Project, the trip length of 9.0 miles associated with an Industrial/Business Park land use was utilized. Based on the above, ***Table 2*** tabulates the VMT calculations. As shown in ***Table 2***, the proposed Project VMT is 8,064, which is substantially less than the VMT of the existing land use. Therefore, the Proposed project that is replacing the existing VMT-generating land use would lead to an overall net decrease in VMT.

Table 2
Vehicle Miles Traveled

Land Use	Daily Trip Ends (ADT)	Trip Length (miles)[a]	Vehicle Miles Traveled (VMT)
Existing: Electronic Superstore (ITE 863)	(6,405)	5.2	(33,306)
Proposed: Industrial Park (ITE 130)	896	9.0	8,064
Delta			**(25,242)**

Footnotes:
a. Trip lengths obtained from SANDAG's *(Not So) Brief Guide of Vehicular Traffic Generation Rates for the San Diego Region.*

It should be noted that other sources for trip lengths were also reviewed. ***Attachment C*** contains a comparison of the VMT calculations using the different sources. As shown, the other sources yield similar results.

3. CONCLUSION

Based on the VMT assessment presented in this letter report, the proposed Project that is replacing the existing VMT-generating land use would lead to an overall net decrease in VMT. In conclusion, the proposed Project would have a less-than-significant VMT transportation impact.

Please call if you have any questions.

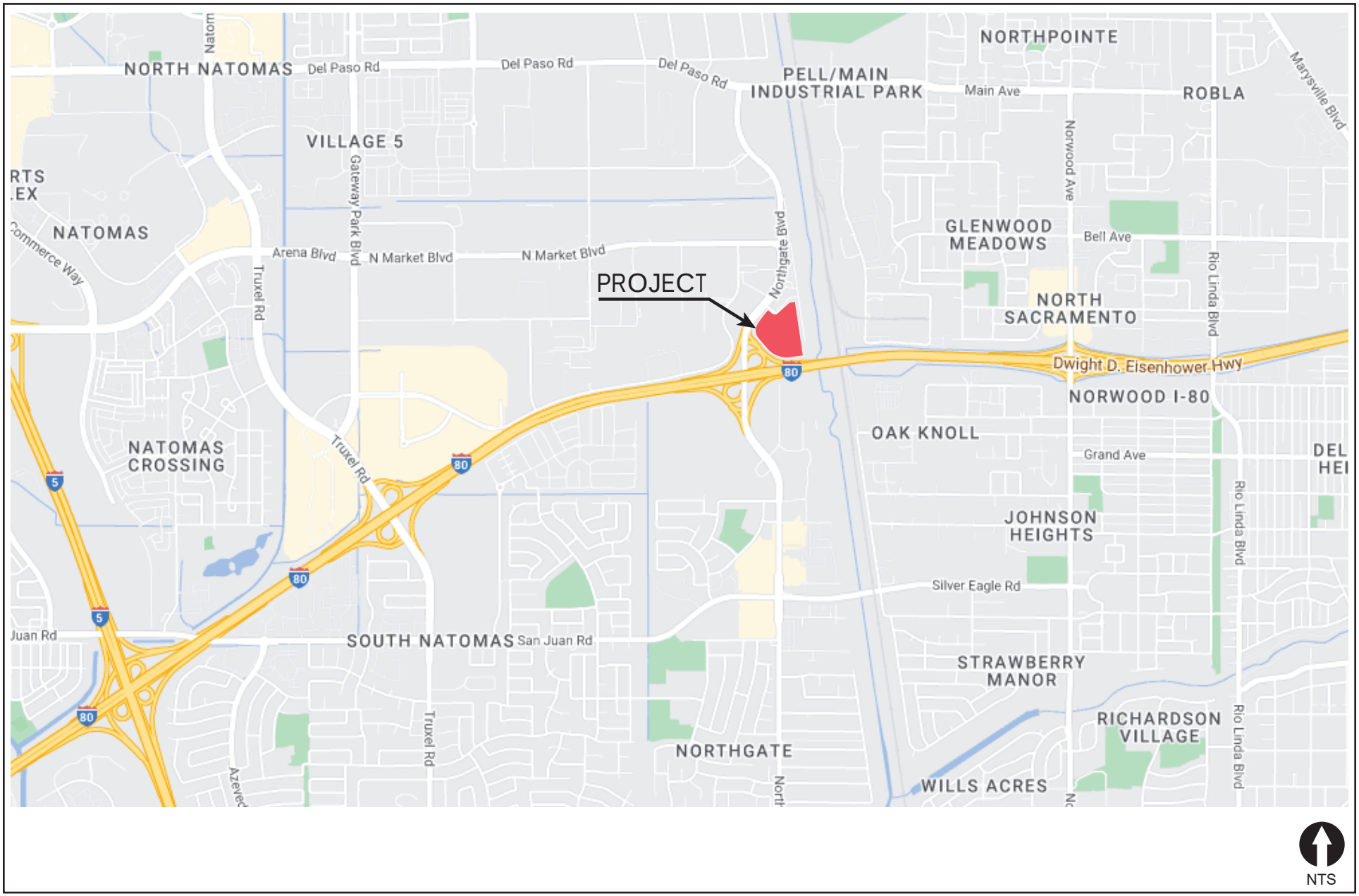
Sincerely,

Linscott, Law & Greenspan, Engineers

K.C. Yellapu, PE, TE, PTOE
Principal

Erika Carino, PE, RSP
Transportation Engineer III

cc: File



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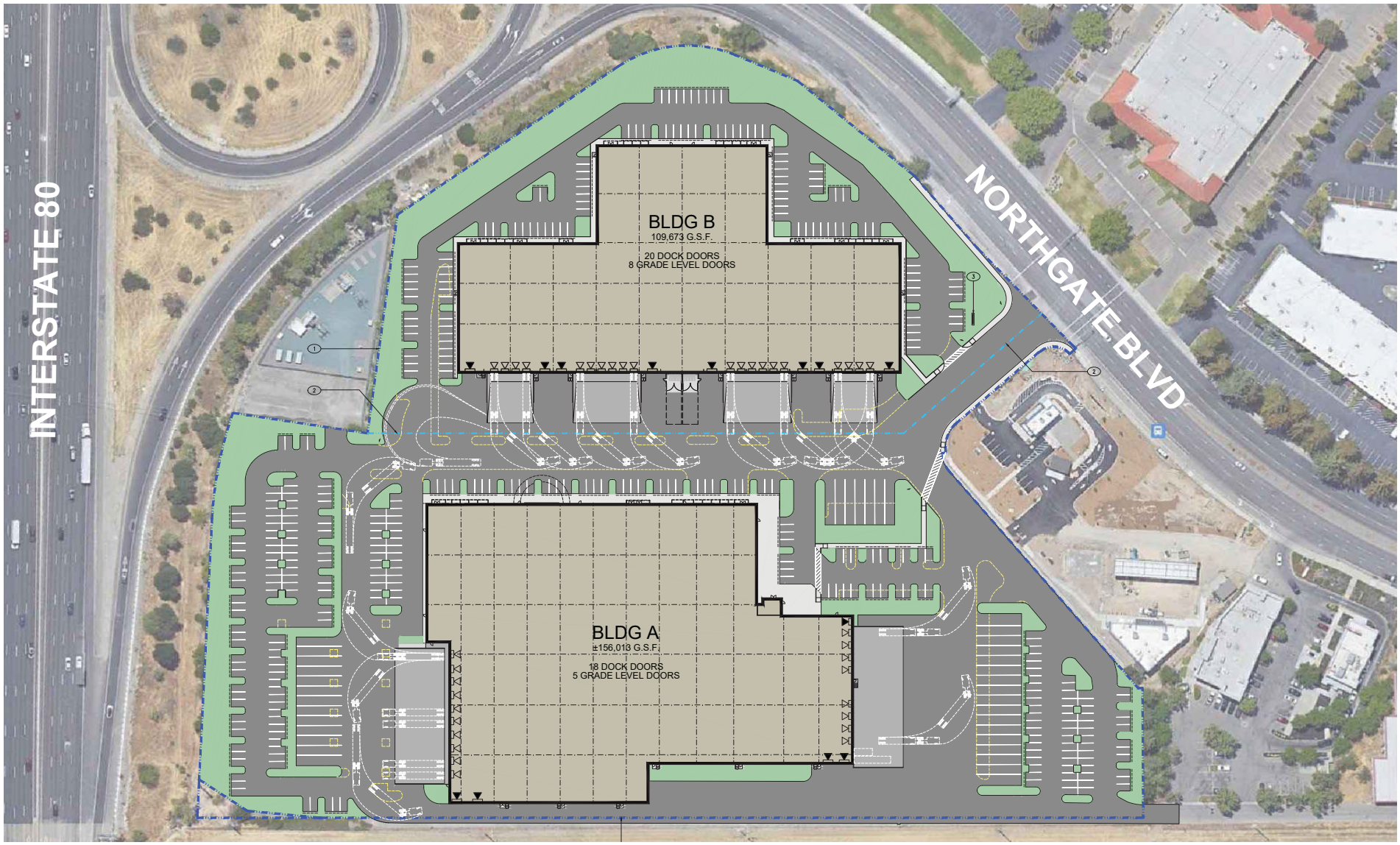
N:\3563 - Northgate Industrial\Figures

Figure 1

Project Area

Northgate Industrial



Source: 4100 Northgate Blvd Preliminary Master Site Plan

NTS

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N:\3563 - Northgate Industrial\Figures

Figure 2

Preliminary Site Plan

Northgate Industrial

ATTACHMENT A

Electronics Superstore
(863)

Vehicle Trip Ends vs: **1000 Sq. Ft. GFA**
On a: **Weekday**

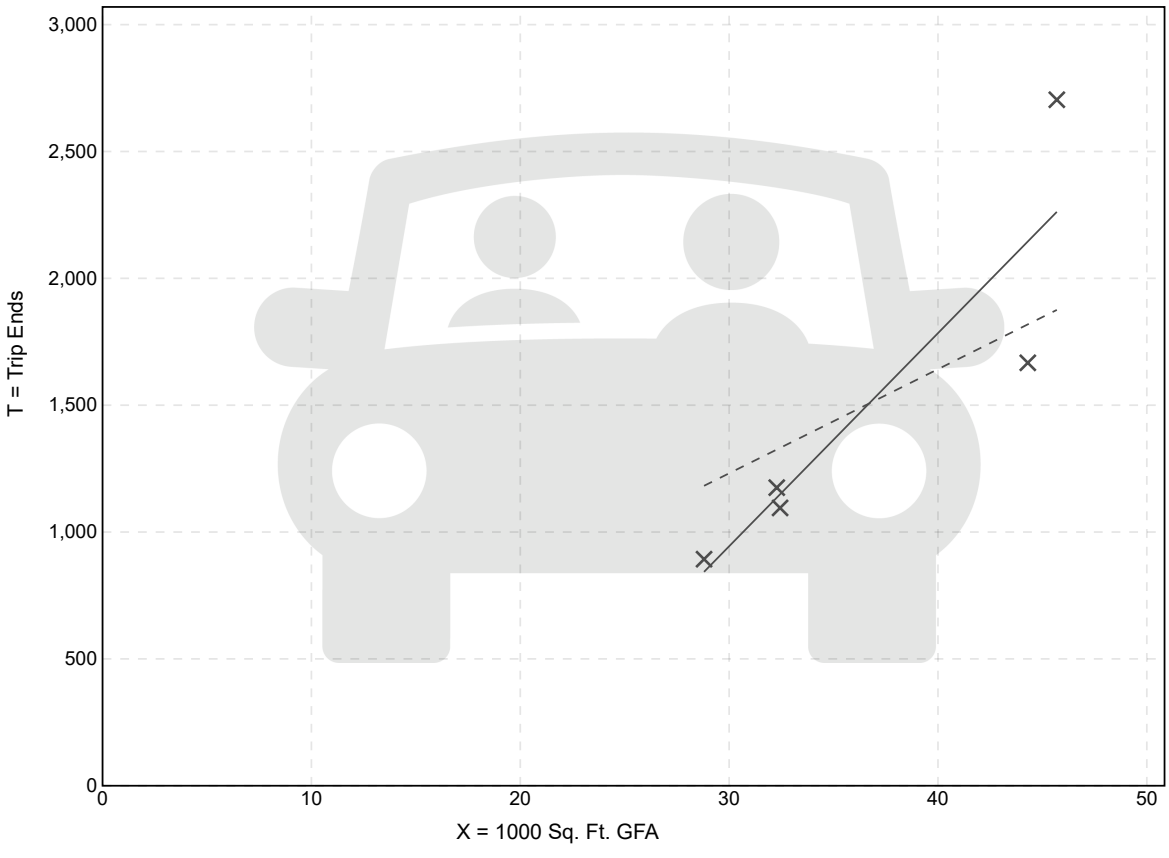
Setting/Location: **General Urban/Suburban**
Number of Studies: 5
Avg. 1000 Sq. Ft. GFA: 37
Directional Distribution: 50% entering, 50% exiting

Vehicle Trip Generation per 1000 Sq. Ft. GFA

Average Rate	Range of Rates	Standard Deviation
41.05	31.01 - 59.18	11.92

Data Plot and Equation

Caution – Small Sample Size



Trip Gen Manual, 11th Edition ● Institute of Transportation Engineers

Electronics Superstore
(863)

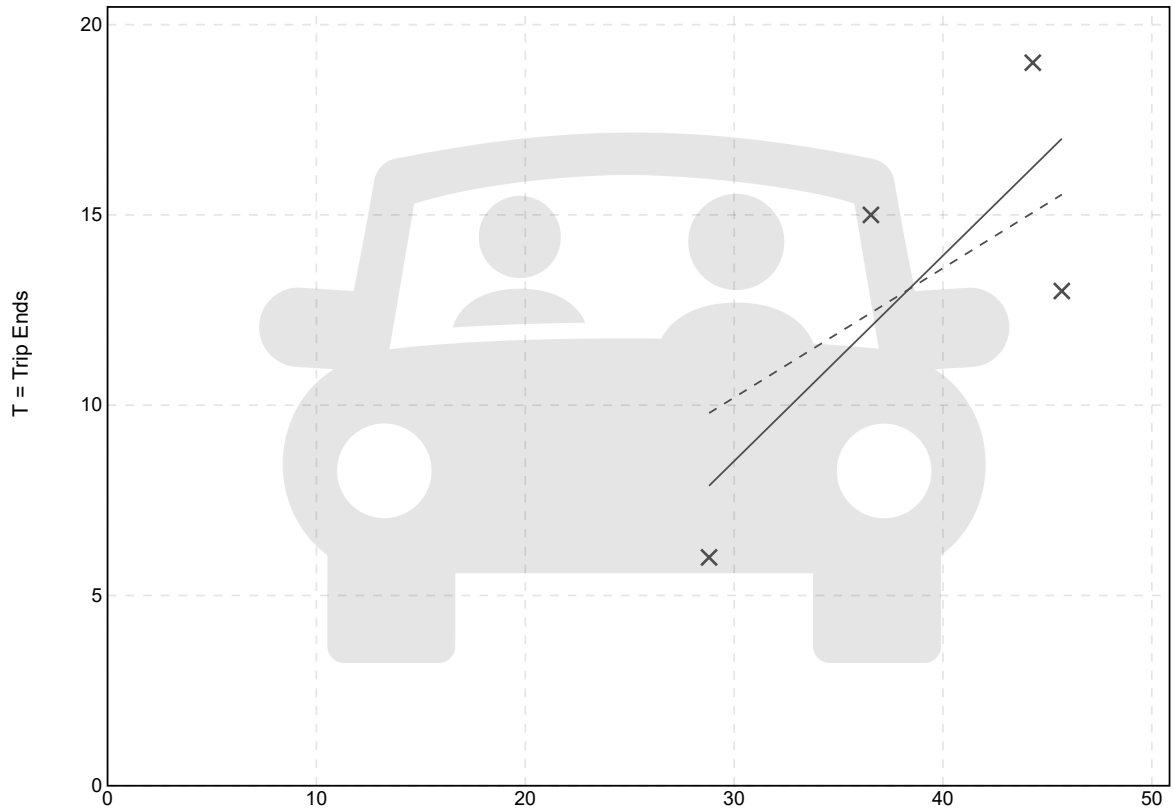
Vehicle Trip Ends vs: **1000 Sq. Ft. GFA**
On a: **Weekday,**
Peak Hour of Adjacent Street Traffic,
One Hour Between 7 and 9 a.m.
Setting/Location: **General Urban/Suburban**
Number of Studies: 4
Avg. 1000 Sq. Ft. GFA: 39
Directional Distribution: 73% entering, 27% exiting

Vehicle Trip Generation per 1000 Sq. Ft. GFA

Average Rate	Range of Rates	Standard Deviation
0.34	0.21 - 0.43	0.10

Data Plot and Equation

Caution – Small Sample Size



Fitted Curve Equation: T = 0.54(X) - 7.67

R^2= 0.60

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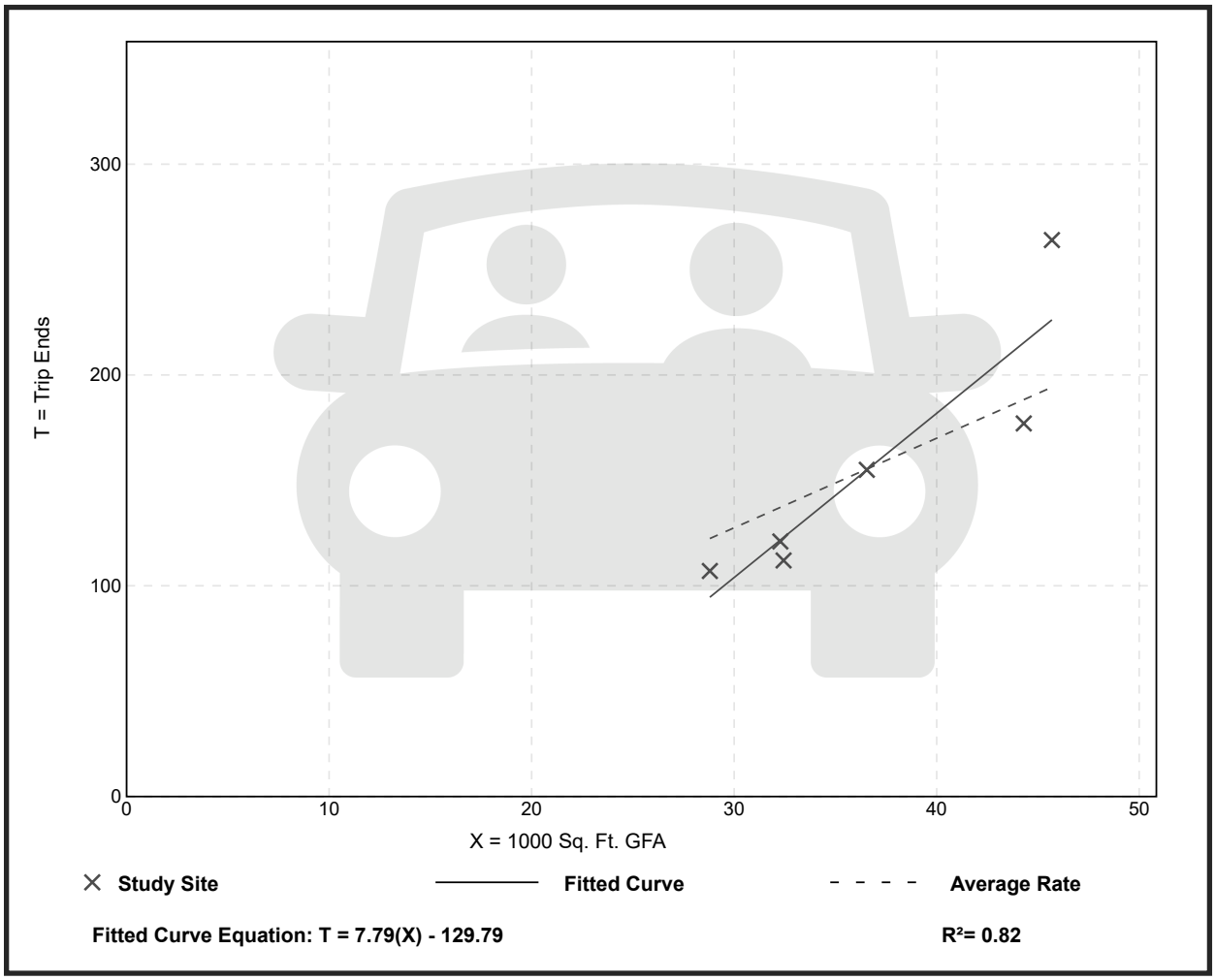
Electronics Superstore
(863)

Vehicle Trip Ends vs: **1000 Sq. Ft. GFA**
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: 6
Avg. 1000 Sq. Ft. GFA: 37
Directional Distribution: 50% entering, 50% exiting

Vehicle Trip Generation per 1000 Sq. Ft. GFA

Average Rate	Range of Rates	Standard Deviation
4.25	3.45 - 5.78	0.89

Data Plot and Equation



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Industrial Park
(130)

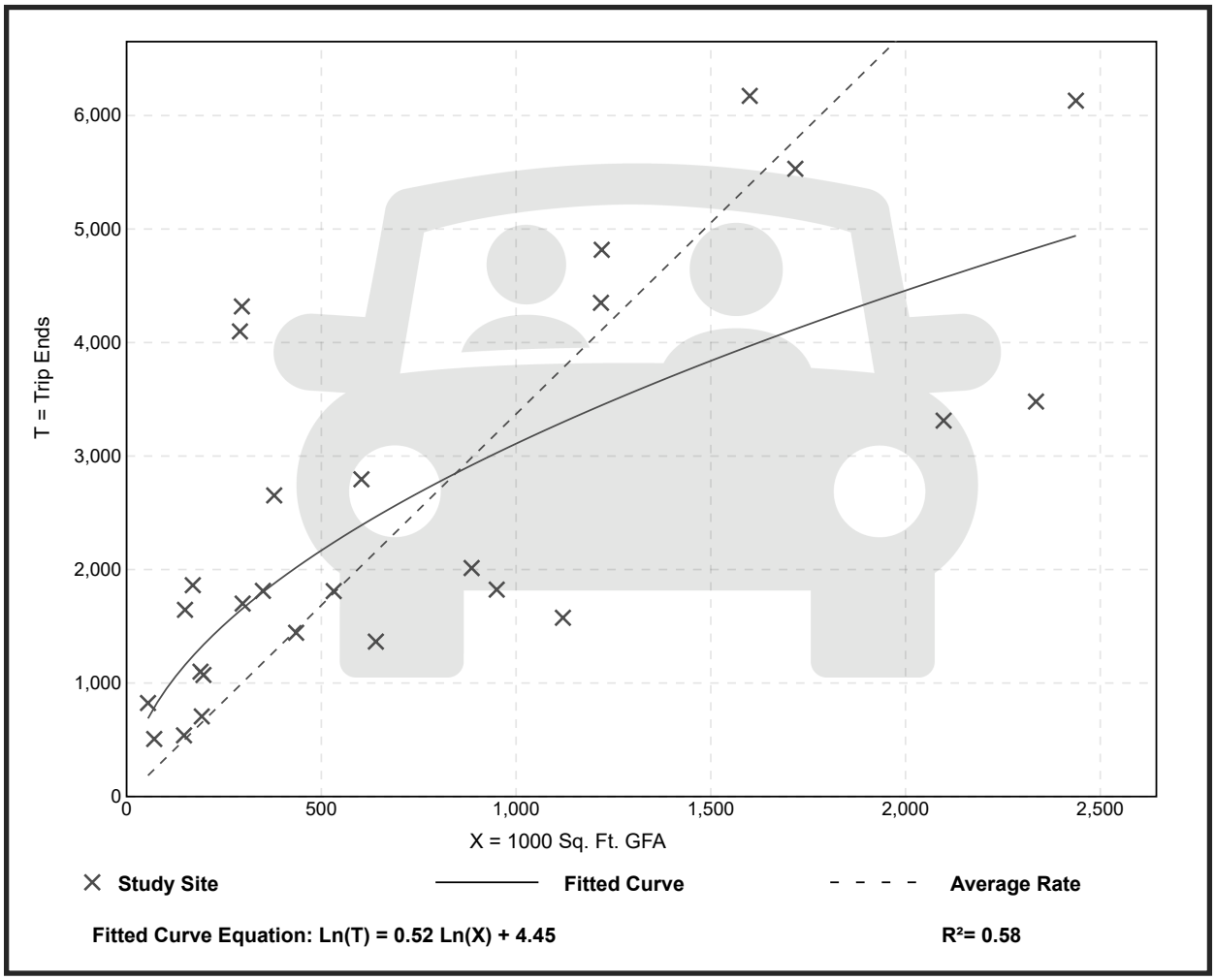
Vehicle Trip Ends vs: **1000 Sq. Ft. GFA**
On a: **Weekday**

Setting/Location: **General Urban/Suburban**
Number of Studies: 27
Avg. 1000 Sq. Ft. GFA: 762
Directional Distribution: 50% entering, 50% exiting

Vehicle Trip Generation per 1000 Sq. Ft. GFA

Average Rate	Range of Rates	Standard Deviation
3.37	1.41 - 14.98	2.60

Data Plot and Equation



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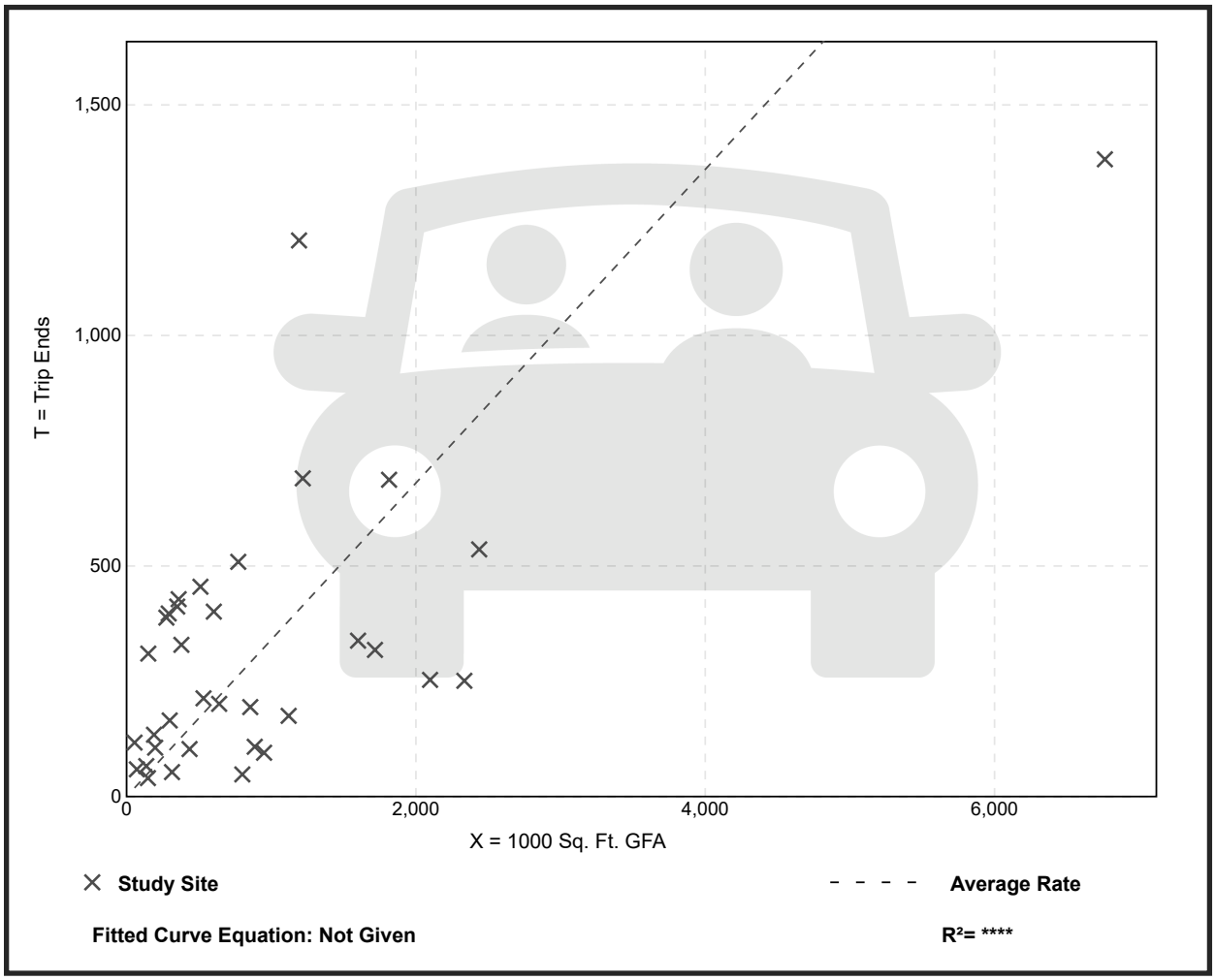
Industrial Park
(130)

Vehicle Trip Ends vs: **1000 Sq. Ft. GFA**
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: 34
Avg. 1000 Sq. Ft. GFA: 956
Directional Distribution: 81% entering, 19% exiting

Vehicle Trip Generation per 1000 Sq. Ft. GFA

Average Rate	Range of Rates	Standard Deviation
0.34	0.06 - 2.13	0.33

Data Plot and Equation



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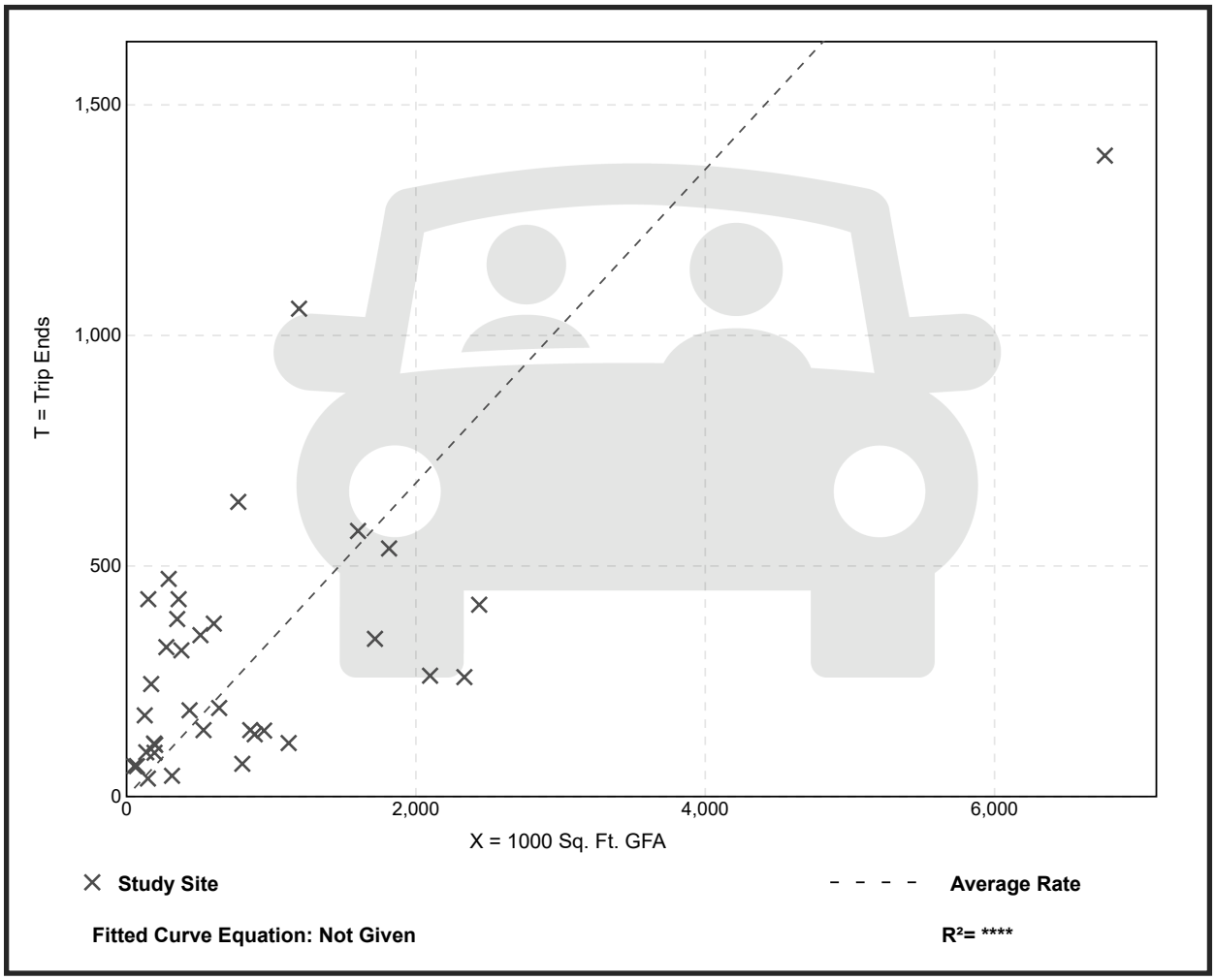
Industrial Park
(130)

Vehicle Trip Ends vs: **1000 Sq. Ft. GFA**
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: 35
Avg. 1000 Sq. Ft. GFA: 899
Directional Distribution: 22% entering, 78% exiting

Vehicle Trip Generation per 1000 Sq. Ft. GFA

Average Rate	Range of Rates	Standard Deviation
0.34	0.09 - 2.85	0.36

Data Plot and Equation



Trip Gen Manual, 11th Edition ● Institute of Transportation Engineers

ATTACHMENT B

(NOT SO)

BRIEF GUIDE OF VEHICULAR TRAFFIC GENERATION RATES FOR THE SAN DIEGO REGION

APRIL 2002

401 B Street, Suite 800
San Diego, California 92101
(619) 699-1900 • Fax (619) 699-1950

NOTE: This listing only represents a ***guide*** of average, or estimated, traffic generation "driveway" rates and some very general trip data for land uses (emphasis on acreage and building square footage) in the San Diego region. These rates (both local and national) are subject to change as future documentation becomes available, or as regional sources are updated. For more specific information regarding traffic data and trip rates, please refer to the San Diego Traffic Generators manual. ***Always check with local jurisdictions for their preferred or applicable rates.***

LAND USE	TRIP CATEGORIES [PRIMARY:DIVERTED:PASS-BY][P]	ESTIMATED WEEKDAY VEHICLE TRIP GENERATION RATE (DRIVEWAY)	HIGHEST PEAK HOUR % (plus IN:OUT ratio) Between 6:00-9:30 A.M.		Between 3:00-6:30 P.M.		TRIP LENGTH (Miles)[L]
AGRICULTURE (Open Space)	[80:18:2]	2/acre**					10.8
AIRPORT	[78:20:2]						12.5
Commercial		60/acre, 100/flight, 70/1000 sq. ft.* **	5%	(6:4)	6%	(5:5)	
General Aviation		6/acre, 2/flight, 6/based aircraft* **	9%	(7:3)	15%	(5:5)	
Heliports		100/acre**					
AUTOMOBILE[S]							
Car Wash							
Automatic		900/site, 600/acre**	4%	(5:5)	9%	(5:5)	
Self-serve		100/wash stall**	4%	(5:5)	8%	(5:5)	
Gasoline	[21:51:28]						2.8
with/Food Mart		160/vehicle fueling space**	7%	(5:5)	8%	(5:5)	
with/Food Mart & Car Wash		155/vehicle fueling space**	8%	(5:5)	9%	(5:5)	
Older Service Station Design		150/vehicle fueling space, 900/station**	7%	(5:5)	9%	(5:5)	
Sales (Dealer & Repair)		50/1000 sq. ft., 300/acre, 60/service stall* **	5%	(7:3)	8%	(4:6)	
Auto Repair Center		20/1000 sq. ft., 400/acre, 20/service stall*	8%	(7:3)	11%	(4:6)	
Auto Parts Sales		60/1000 sq. ft. **	4%		10%		
Quick Lube		40/service stall**	7%	(6:4)	10%	(5:5)	
Tire Store		25/1000 sq. ft., 30/service stall**	7%	(6:4)	11%	(5:5)	
CEMETERY		5/acre*					
CHURCH (or Synagogue)	[64:25:11]	9/1000 sq. ft., 30/acre** (quadruple rates for Sunday, or days of assembly)	5%	(6:4)	8%	(5:5)	5.1
COMMERCIAL/RETAIL[S]							
Super Regional Shopping Center (More than 80 acres, more than 800,000 sq. ft., w/usually 3 + major stores)		35/1000 sq. ft.,[C] 400/acre*	4%	(7:3)	10%	(5:5)	
Regional Shopping Center (40-80acres, 400,000-800,000 sq. ft., w/usually 2 + major stores)	[54:35:11]	50/1000 sq. ft.,[C] 500/acre*	4%	(7:3)	9%	(5:5)	5.2
Community Shopping Center (15-40 acres, 125,000-400,000 sq. ft., w/usually 1 major store, detached restaurant(s), grocery and drugstore)	[47:31:22]	80/1000 sq. ft., 700/acre* **	4%	(6:4)	10%	(5:5)	3.6
Neighborhood Shopping Center (Less than 15 acres, less than 125,000 sq. ft., w/usually grocery & drugstore, cleaners, beauty & barber shop, & fast food services)		120/1000 sq. ft., 1200/acre* **	4%	(6:4)	10%	(5:5)	
Commercial Shops	[45:40:15]						
Specialty Retail/Strip Commercial		40/1000 sq. ft., 400/acre*	3%	(6:4)	9%	(5:5)	4.3
Electronics Superstore		50/1000 sq. ft**			10%	(5:5)	
Factory Outlet		40/1000 sq. ft.**	3%	(7:3)	9%	(5:5)	
Supermarket		150/1000 sq. ft., 2000/acre* **	4%	(7:3)	10%	(5:5)	
Drugstore		90/1000 sq. ft.**	4%	(6:4)	10%	(5:5)	
Convenience Market (15-16 hours)		500/1000 sq. ft.**	8%	(5:5)	8%	(5:5)	
Convenience Market (24 hours)		700/1000 sq. ft.**	9%	(5:5)	7%	(5:5)	
Convenience Market (w/gasoline pumps)		850/1000 sq. ft., 550/vehicle fueling space**	6%	(5:5)	7%	(5:5)	
Discount Club		60/1000 sq. ft., 600/acre* **	1%	(7:3)	9%	(5:5)	
Discount Store		60/1000 sq. ft., 600/acre**	3%	(6:4)	8%	(5:5)	
Furniture Store		6/1000 sq. ft., 100/acre**	4%	(7:3)	9%	(5:5)	
Lumber Store		30/1000 sq. ft., 150/acre**	7%	(6:4)	9%	(5:5)	
Home Improvement Superstore		40/1000 sq. ft.**	5%	(6:4)	8%	(5:5)	
Hardware/Paint Store		60/1000 sq. ft., 600/acre**	2%	(6:4)	9%	(5:5)	
Garden Nursery		40/1000 sq. ft., 90/acre**	3%	(6:4)	10%	(5:5)	
Mixed Use: Commercial (w/supermarket)/Residential		110/1000 sq. ft., 2000/acre* (commercial only) 5/dwelling unit, 200/acre* (residential only)	3% 9%	(6:4) (3:7)	9% 13%	(5:5) (6:4)	
EDUCATION							
University (4 years)	[91:9:0]	2.4/student, 100 acre*	10%	(8:2)	9%	(3:7)	8.9
Junior College (2 years)	[92:7:1]	1.2/student, 24/1000 sq. ft., 120/acre* **	12%	(8:2)	9%	(6:4)	9.0
High School	[75:19:6]	1.3/student, 15/1000 sq. ft., 60/acre* **	20%	(7:3)	10%	(4:6)	4.8
Middle/Junior High	[63:25:12]	1.4/student, 12/1000 sq. ft. 50/acre**	30%	(6:4)	9%	(4:6)	5.0
Elementary	[57:25:10]	1.6/student, 14/1000 sq. ft., 90/acre* **	32%	(6:4)	9%	(4:6)	3.4
Day Care	[28:58:14]	5/child, 80/1000 sq. ft.**	17%	(5:5)	18%	(5:5)	3.7
FINANCIAL[S]	[35:42:23]						3.4
Bank (Walk-In only)		150/1000 sq. ft., 1000/acre* **	4%	(7:3)	8%	(4:6)	
with Drive-Through		200/1000 sq. ft., 1500/acre*	5%	(6:4)	10%	(5:5)	
Drive-Through only		250 (125 one-way)/lane*	3%	(5:5)	13%	(5:5)	
Savings & Loan		60/1000 sq. ft., 600/acre**	2%		9%		
Drive-Through only		100 (50 one-way)/lane**	4%		15%		
HOSPITAL	[73:25:2]						8.3
General		20/bed, 25/1000 sq. ft., 250/acre*	8%	(7:3)	10%	(4:6)	
Convalescent/Nursing		3/bed**	7%	(6:4)	7%	(4:6)	
INDUSTRIAL							
Industrial/Business Park (commercial included)	[79:19:2]	16/1000 sq. ft., 200/acre* **	12%	(8:2)	12%	(2:8)	9.0
Industrial Park (no commercial)		8/1000 sq. ft., 90/acre**	11%	(9:1)	12%	(2:8)	
Industrial Plant (multiple shifts)	[92:5:3]	10/1000 sq. ft., 120/acre*	14%	(8:2)	15%	(3:7)	11.7
Manufacturing/Assembly		4/1000 sq. ft., 50/acre**	19%	(9:1)	20%	(2:8)	
Warehousing		5/1000 sq. ft., 60/acre**	13%	(7:3)	15%	(4:6)	
Storage		2/1000 sq. ft., 0.2/vault, 30/acre*	6%	(5:5)	9%	(5:5)	
Science Research & Development		8/1000 sq. ft., 80/acre*	16%	(9:1)	14%	(1:9)	
Landfill & Recycling Center		6/acre	11%	(5:5)	10%	(4:6)	

(OVER)

LAND USE	TRIP CATEGORIES [PRIMARY:DIVERTED:PASS-BY][P]	ESTIMATED WEEKDAY VEHICLE TRIP GENERATION RATE (DRIVEWAY)	HIGHEST PEAK HOUR % (plus IN:OUT ratio) Between 6:00-9:30 A.M.		Between 3:00-6:30 P.M.		TRIP LENGTH (Miles)[L]
LIBRARY	[44:44:12]	50/1000 sq. ft., 400/acre**	2%	(7:3)	10%	(5:5)	3.9
LODGING	[58:38:4]						7.6
Hotel (w/convention facilities/restaurant)		10/occupied room, 300/acre	6%	(6:4)	8%	(6:4)	
Motel		9/occupied room, 200/acre*	8%	(4:6)	9%	(6:4)	
Resort Hotel		8/occupied room, 100/acre*	5%	(6:4)	7%	(4:6)	
Business Hotel		7/occupied room**	8%	(4:6)	9%	(6:4)	
MILITARY	[82:16:2]	2.5/military & civilian personnel*	9%	(9:1)	10%	(2:8)	11.2
OFFICE							
Standard Commercial Office (less than 100,000 sq. ft.)	[77:19:4]	20/1000 sq. ft.,[O] 300/acre*	14%	(9:1)	13%	(2:8)	8.8
Large (High-Rise) Commercial Office (more than 100,000 sq. ft., 6 + stories)	[82:15:3]	17/1000 sq. ft.,[O] 600/acre*	13%	(9:1)	14%	(2:8)	10.0
Office Park (400,000 + sq. ft.)		12/1000 sq.ft., 200/acre* **	13%	(9:1)	13%	(2:8)	
Single Tenant Office		14/1000 sq. ft., 180/acre*	15%	(9:1)	15%	(2:8)	8.8
Corporate Headquarters		7/1000 sq. ft., 110/acre*	17%	(9:1)	16%	(1:9)	
Government (Civic Center)	[50:34:16]	30/1000 sq. ft.**	9%	(9:1)	12%	(3:7)	6.0
Post Office							
Central/Walk-In Only		90/1000 sq. ft.**	5%		7%		
Community (not including mail drop lane)		200/1000 sq. ft., 1300/acre*	6%	(6:4)	9%	(5:5)	
Community (w/mail drop lane)		300/1000 sq. ft., 2000/acre*	7%	(5:5)	10%	(5:5)	
Mail Drop Lane only		1500 (750 one-way)/lane*	7%	(5:5)	12%	(5:5)	
Department of Motor Vehicles		180/1000 sq. ft., 900/acre**	6%	(6:4)	10%	(4:6)	
Medical-Dental	[60:30:10]	50/1000 sq. ft., 500/acre*	6%	(8:2)	11%	(3:7)	6.4
PARKS	[66:28:6]		4%		8%		5.4
City (developed w/meeting rooms and sports facilities)		50/acre*	13%	(5:5)	9%	(5:5)	
Regional (developed)		20/acre*					
Neighborhood/County (undeveloped)		5/acre (add for specific sport uses), 6/picnic site* **					
State (average 1000 acres)		1/acre, 10/picnic site**					
Amusement (Theme)		80/acre, 130/acre (summer only)**			6%	(6:4)	
San Diego Zoo		115/acre*					
Sea World		80/acre*					
RECREATION							
Beach, Ocean or Bay	[52:39:9]	600/1000 ft. shoreline, 60/acre*					6.3
Beach, Lake (fresh water)		50/1000 ft. shoreline, 5/acre*					
Bowling Center		30/1000 sq. ft., 300/acre, 30/lane **	7%	(7:3)	11%	(4:6)	
Campground		4/campsite**	4%		8%		
Golf Course		7/acre, 40/hole, 700/course* **	7%	(8:2)	9%	(3:7)	
Driving Range only		70/acre, 14/tee box*	3%	(7:3)	9%	(5:5)	
Marinas		4/berth, 20/acre* **	3%	(3:7)	7%	(6:4)	
Multi-purpose (miniature golf, video arcade, batting cage, etc.)		90/acre	2%		6%		
Racquetball/Health Club		30/1000 sq. ft., 300/acre, 40/court*	4%	(6:4)	9%	(6:4)	
Tennis Courts		16/acre, 30/court**	5%		11%	(5:5)	
Sports Facilities							
Outdoor Stadium		50/acre, 0.2/seat*					
Indoor Arena		30/acre, 0.1/seat*					
Racetrack		40/acre, 0.6 seat*					
Theaters (multiplex w/matinee)	[66:17:17]	80/1000 sq. ft., 1.8/seat, 360/screen*	1/3%		8%	(6:4)	6.1
RESIDENTIAL	[86:11:3]						7.9
Estate, Urban or Rural (average 1-2 DU/acre)		12/dwelling unit *[R]	8%	(3:7)	10%	(7:3)	
Single Family Detached (average 3-6 DU/acre)		10/dwelling unit *[R]	8%	(3:7)	10%	(7:3)	
Condominium (or any multi-family 6-20 DU/acre)		8/dwelling unit *[R]	8%	(2:8)	10%	(7:3)	
Apartment (or any multi-family units more than 20 DU/acre)		6/dwelling unit *[R]	8%	(2:8)	9%	(7:3)	
Military Housing (off-base, multi-family)							
(less than 6 DU/acre)		8/dwelling unit	7%	(3:7)	9%	(6:4)	
(6-20 DU/acre)		6/dwelling unit	7%	(3:7)	9%	(6:4)	
Mobile Home							
Family		5/dwelling unit, 40/acre*	8%	(3:7)	11%	(6:4)	
Adults Only		3/dwelling unit, 20/acre*	9%	(3:7)	10%	(6:4)	
Retirement Community		4/dwelling unit**	5%	(4:6)	7%	(6:4)	
Congregate Care Facility		2.5/dwelling unit**	4%	(6:4)	8%	(5:5)	
RESTAURANT[S]	[51:37:12]						4.7
Quality		100/1000 sq. ft., 3/seat, 500/acre* **	1%	(6:4)	8%	(7:3)	
Sit-down, high turnover		160/1000 sq. ft., 6/seat, 1000/acre* **	8%	(5:5)	8%	(6:4)	
Fast Food (w/drive-through)		650/1000 sq. ft., 20/seat, 3000/acre* **	7%	(5:5)	7%	(5:5)	
Fast Food (without drive-through)		700/1000 sq. ft.**	5%	(6:4)	7%	(5:5)	
Delicatessen (7am-4pm)		150/1000 sq. ft., 11/seat*	9%	(6:4)	3%	(3:7)	
TRANSPORTATION							
Bus Depot		25/1000 sq. ft.**					
Truck Terminal		10/1000 sq. ft., 7/bay, 80/acre**	9%	(4:6)	8%	(5:5)	
Waterport/Marine Terminal		170/berth, 12/acre**					
Transit Station (Light Rail w/parking)		300/acre, $2^{1/2}$/parking space (4/occupied)**	14%	(7:3)	15%	(3:7)	
Park & Ride Lots		400/acre (600/paved acre), 5/parking space (8/occupied)* **	14%	(7:3)	15%	(3:7)	

* Primary source: *San Diego Traffic Generators.*

* Other sources: *ITE Trip Generation Report [6th Edition]*, Trip Generation Rates (other agencies and publications), various SANDAG & CALTRANS studies, reports and estimates.

[P] Trip category percentage ratios are daily from local household surveys, often cannot be applied to very specific land uses, and do not include non-resident drivers (draft SANDAG *Analysis of Trip Diversion*, revised November, 1990):
PRIMARY - one trip directly between origin and primary destination.
DIVERTED - linked trip (having one or more stops along the way to a primary destination) whose distance compared to direct distance ≥ 1 mile.
PASS-BY - undiverted or diverted < 1 mile.

[L] Trip lengths are average weighted for all trips to and from general land use site. (All trips system-wide average length = 6.9 miles)

[C] Fitted curve equation: $Ln(T) = 0.502\ Ln(x) + 6.945$
[O] Fitted curve equation: $Ln(T) = 0.756\ Ln(x) + 3.950$
T = total trips, x = 1,000 sq. ft.

[R] Fitted curve equation: $t = -2.169\ Ln(d) + 12.85$ t = trips/DU, d = density (DU/acre), DU = dwelling unit

[S] Suggested PASS-BY [undiverted or diverted < 1 mile] percentages for trip rate reductions only during P.M. peak period (based on combination of local data/review and Other sources**):

COMMERCIAL/RETAIL	
Regional Shopping Center	20%
Community " "	30%
Neighborhood " "	40%
Specialty Retail/Strip Commercial (other)	10%
Supermarket	40%
Convenience Market	50%
Discount Club/Store	30%
FINANCIAL	
Bank	25%
AUTOMOBILE	
Gasoline Station	50%
RESTAURANT	
Quality	10%
Sit-down high turnover	20%
Fast Food	40%

[T] Trip Reductions - In order to help promote regional "smart growth" policies, and acknowledge San Diego's expanding mass transit system, consider vehicle trip rate reductions (with proper documentation and necessary adjustments for peak periods). The following are some examples:

[1] A 5% daily trip reduction for land uses with transit access or near transit stations accessible within 1/4 mile.

[2] Up to 10% daily trip reduction for mixed-use developments where residential and commercial retail are combined (demonstrate mode split of walking trips to replace vehicular trips).

ATTACHMENT C

Table A Vehicle Miles Traveled (SANDAG Source[a])			
Land Use	**Daily Trip Ends (ADT)**	**Trip Length (miles)**	**Vehicle Miles Traveled (VMT)**
Existing: Electronic Superstore (ITE 863)	(6405)	5.2	(33306)
Proposed: Industrial Park (ITE 130)	896	9.0	8064
Delta			(25242)

Footnotes:

a. SANDAG's *(Not So) Brief Guide of Vehicular Traffic Generation Rates for the San Diego Region* .

Table B Vehicle Miles Traveled (CalEEmod Source[a])			
Land Use	**Daily Trip Ends (ADT)**	**Trip Length (miles)**	**Vehicle Miles Traveled (VMT)**
Existing: Electronic Superstore (ITE 863)	(6405)	5.0	(32025)
Proposed: Industrial Park (ITE 130)	896	10.0	8960
Delta			(23065)

Footnotes:

a. Appendix D of the CalEEMod Version 2020.4.0 User Guide

Table C NHTS Vehicle Miles Traveled (NHTS Source[a])			
Land Use	**Daily Trip Ends (ADT)**	**Trip Length (miles)**	**Vehicle Miles Traveled (VMT)**
Existing: Electronic Superstore (ITE 863)	(6405)	7.9	(50599.5)
Proposed: Industrial Park (ITE 130)	896	12.8	11468.8
Delta			(39130.7)

Footnotes:

a. FHWA's *Summary of Travel Trends: 2017 National Household Travel Survey*

Table 4.2 Mobile Trip Characteristics Dependent on Location

Location Type	Name	Rural Trip Length (miles)						Urban Trip Length (miles)						Residential Trip Type Percentage		
		C-C	C-NW	C-W	H-O	H-S	H-W	C-C	C-NW	C-W	H-O	H-S	H-W	H-W	H-S	H-O
Air Basin	Great Basin Valleys	6.6	6.6	14.7	7.9	7.1	16.8	7.3	7.3	9.5	7.5	7.3	10.8	42.3	19.6	38.1
	Lake County	6.6	6.6	14.7	7.9	7.1	16.8	7.3	7.3	9.5	7.5	7.3	10.8	42.3	19.6	38.1
	Lake Tahoe	6.6	6.6	14.7	7.9	7.1	16.8	7.3	7.3	9.5	7.5	7.3	10.8	42.3	19.6	38.1
	Mojave Desert	6.6	6.6	14.7	7.9	7.1	16.8	7.3	7.3	9.5	7.5	7.3	10.8	40.2	19.2	40.6
	Mountain Counties	6.6	6.6	14.7	7.9	7.1	16.8	7.3	7.3	9.5	7.5	7.3	10.8	37.3	20.7	42
	North Central Coast	6.6	6.6	14.7	13.6	9.8	17.1	7.3	7.3	9.5	7.2	6.2	12.3	23	15	62
	North Coast	6.6	6.6	14.7	7.9	7.1	16.8	7.3	7.3	9.5	7.5	7.3	10.8	42.3	19.6	38.1
	Northeast Plateau	6.6	6.6	14.7	7.9	7.1	16.8	7.3	7.3	9.5	7.5	7.3	10.8	42.3	19.6	38.1
	Sacramento Valley	6.6	6.6	14.7	7.9	7.1	16.8	7.3	7.3	9.5	7.5	7.3	10.8	32.9	18	49.1
	Salton Sea	6.2	6.2	13.8	8.1	6.9	14.6	4.2	5.4	12.5	4.5	3.5	11	40.2	19.2	40.6
	San Diego	6.6	6.6	14.7	7.9	7.1	16.8	7.3	7.3	9.5	7.5	7.3	10.8	41.6	18.8	39.6
	San Francisco Bay Area	6.6	6.6	14.7	5.7	4.8	10.8	7.3	7.3	9.5	5.7	4.8	10.8	31	15	54
	San Joaquin Valley	6.6	6.6	14.7	7.9	7.1	16.8	7.3	7.3	9.5	7.5	7.3	10.8	45.6	19	35.4
	South Central Coast	6.6	6.6	14.7	7.9	7.1	16.8	7.3	7.3	9.5	7.5	7.3	10.8	37.5	15	47.5
	South Coast	10.1	7.9	18.5	12.9	9.6	19.8	8.4	6.9	16.6	8.7	5.9	14.7	40.2	19.2	40.6
Air District	Amador County APCD	6.6	6.6	14.7	7.9	7.1	16.8	7.3	7.3	9.5	7.5	7.3	10.8	37.3	20.7	42
	Antelope Valley APCD	6.6	6.6	14.7	7.9	7.1	16.8	7.3	7.3	9.5	7.5	7.3	10.8	40.2	19.2	40.6
	Bay Area AQMD	6.6	6.6	14.7	5.7	4.8	10.8	7.3	7.3	9.5	5.7	4.8	10.8	31	15	54
	Butte County AQMD	10.5	10.5	10.5	8	4.9	11.1	6	6	6	7.9	3	7.3	35	17	48
	Calaveras County AQMD	6.6	6.6	14.7	7.9	7.1	16.8	7.3	7.3	9.5	7.5	7.3	10.8	37.3	20.7	42
	Colusa County APCD	6.6	6.6	14.7	7.9	7.1	16.8	7.3	7.3	9.5	7.5	7.3	10.8	42.3	19.6	38.1
	El Dorado County AQMD	6.6	6.6	14.7	7.9	7.1	16.8	7.3	7.3	9.5	7.5	7.3	10.8	42.6	21	36.4
	Feather River AQMD	6.6	6.6	14.7	7.9	7.1	16.8	7.3	7.3	9.5	7.5	7.3	10.8	42.6	21	36.4
	Glenn County APCD	6.6	6.6	14.7	7.9	7.1	16.8	7.3	7.3	9.5	7.5	7.3	10.8	42.3	19.6	38.1
	Great Basin UAPCD	6.6	6.6	14.7	7.9	7.1	16.8	7.3	7.3	9.5	7.5	7.3	10.8	42.3	19.6	38.1
	Imperial County APCD	9.5	11.9	16.4	8.1	11.7	10.2	5	8.9	6.7	3.7	3.9	7.3	40.2	19.2	40.6
	Kern County APCD	6.6	6.6	14.7	7.9	7.1	16.8	7.3	7.3	9.5	7.5	7.3	10.8	46.4	16.4	37.2
	Lake County AQMD	6.6	6.6	14.7	7.9	7.1	16.8	7.3	7.3	9.5	7.5	7.3	10.8	42.3	19.6	38.1
	Lassen County APCD	6.6	6.6	14.7	7.9	7.1	16.8	7.3	7.3	9.5	7.5	7.3	10.8	42.3	19.6	38.1
	Mariposa County APCD	6.6	6.6	14.7	7.9	7.1	16.8	7.3	7.3	9.5	7.5	7.3	10.8	37.3	20.7	42
	Mendocino County AQMD	6.6	6.6	14.7	7.9	7.1	16.8	7.3	7.3	9.5	7.5	7.3	10.8	42.3	19.6	38.1
	Modoc County APCD	6.6	6.6	14.7	7.9	7.1	16.8	7.3	7.3	9.5	7.5	7.3	10.8	42.3	19.6	38.1
	Mojave Desert AQMD	6.6	6.6	14.7	7.9	7.1	16.8	7.3	7.3	9.5	7.5	7.3	10.8	40.2	19.2	40.6
	Monterey Bay Unified APCD	6.6	6.6	14.7	7.9	7.1	16.8	7.3	7.3	9.5	7.5	7.3	10.8	44	18.8	37.2
	North Coast Unified APCD	6.6	6.6	14.7	7.9	7.1	16.8	7.3	7.3	9.5	7.5	7.3	10.8	42.3	19.6	38.1
	Northern Sierra AQMD	6.6	6.6	14.7	7.9	7.1	16.8	7.3	7.3	9.5	7.5	7.3	10.8	37.3	20.7	42
	Northern Sonoma County APCD	6.6	6.6	14.7	7.9	7.1	16.8	7.3	7.3	9.5	7.5	7.3	10.8	42.9	19.5	37.6
	Placer County APCD	6.6	6.6	14.7	7.9	7.1	16.8	7.3	7.3	9.5	7.5	7.3	10.8	42.6	21	36.4
	Sacramento Metropolitan AQMD	7.5	8.5	15	8.5	7.5	15	5	6.5	10	6.5	5	10	46.5	12.5	41
	San Diego County APCD	6.6	6.6	14.7	7.9	7.1	16.8	7.3	7.3	9.5	7.5	7.3	10.8	41.6	18.8	39.6
	San Joaquin Valley Unified APCD	6.6	6.6	14.7	7.9	7.1	16.8	7.3	7.3	9.5	7.5	7.3	10.8	45.6	19	35.4
	San Luis Obispo County APCD	13	13	13	13	13	13	5	5	13	5	5	13	35.8	21	43.2
	Santa Barbara County APCD	5.5	6.4	6.6	4.9	4.5	8.3	5.5	6.4	6.6	4.9	4.5	8.3	25.6	9.9	64.5
	Shasta County AQMD	6.6	6.6	14.7	7.9	7.1	16.8	7.3	7.3	9.5	7.5	7.3	10.8	41	21.2	37.8

Table 6b. Trends in the Average Trip Length by Selected Trip Purposes

Trip Purpose:	Average Vehicle Trip Length (miles)				
	All Purposes	To / From Work	Shopping	Other Family / Personal Errands	Social / Recreation
1969	8.9	9.4	4.4	6.5	13.1
1977	8.4	9.0	5.0	6.7	10.3
1983	7.9	8.6	5.3	6.7	10.6
1990	8.9	11.0	5.1	7.4	11.8
1995	9.1	11.8	5.6	6.9	11.2
2001	9.9	12.1	6.7	7.5	11.9
2009	9.7	12.2	6.4	7.1	11.2
2009 MOE	0.2	0.3	0.2	0.2	0.6
2017 Original	9.6	12.0	7.0	6.9	10.6
2017 Orig. MOE	0.4	0.4	0.8	0.4	0.4
2017 Adjusted	10.5	12.8	7.9	7.7	11.8
2017 Adj. MOE	0.4	0.4	0.8	0.4	0.4

Note:

- Totals in all tables can include cases that were not included in any table subcategory, for instance people who did not report their age are included in the total persons, but not in any age category.
- “Other Family/Personal Errands” includes trips such as to the post office, dry cleaners, or library
- 1990 NPTS data were adjusted to make them more comparable with later surveys.
- In 1995, VMT and vehicle trips with "To or From Work" as a trip purpose are believed to be overstated.
- 2001 NHTS sample included children 0 to 4 in the survey. The data shown here exclude them to be comparable with other survey years.
- 2009 NHTS sample did not include households without landlines telephones (CPO households).
- 2017 NHTS sample was address-based and included more urban and CPO households. This and other methods changes in the data series are outlined in Appendix B.