



LOS Engineering, Inc.
Traffic and Transportation

11622 El Camino Real, Suite 100, San Diego, CA 92130
 Phone 619-890-1253, Fax 619-374-7247, Email: justin@losengineering.com

May 13, 2015

Mr. Nick Ortiz
 County of San Diego, Dept. of Public Works
 5510 Overland Avenue
 San Diego, CA 92123

Subject: MPA15-006 Rezone and Specific Plan Amendment Trip Generation Letter
 (RiverWay Planning Areas 8 and 9)

Dear Mr. Ortiz:

LOS Engineering, Inc. is pleased to present this trip generation analysis to determine if the proposed Rezone for storage and manufacturing purposes will not increase the traffic generation over what was analyzed in the Upper San Diego River Improvement Project (USD RIP) EIR for RiverWay Planning Areas 8 (VII) and 9 (IX) identified with Industrial land uses as shown in **Figure 1**.

Figure 1: RiverWay Planning Areas 8 (VII) and 9 (IX)

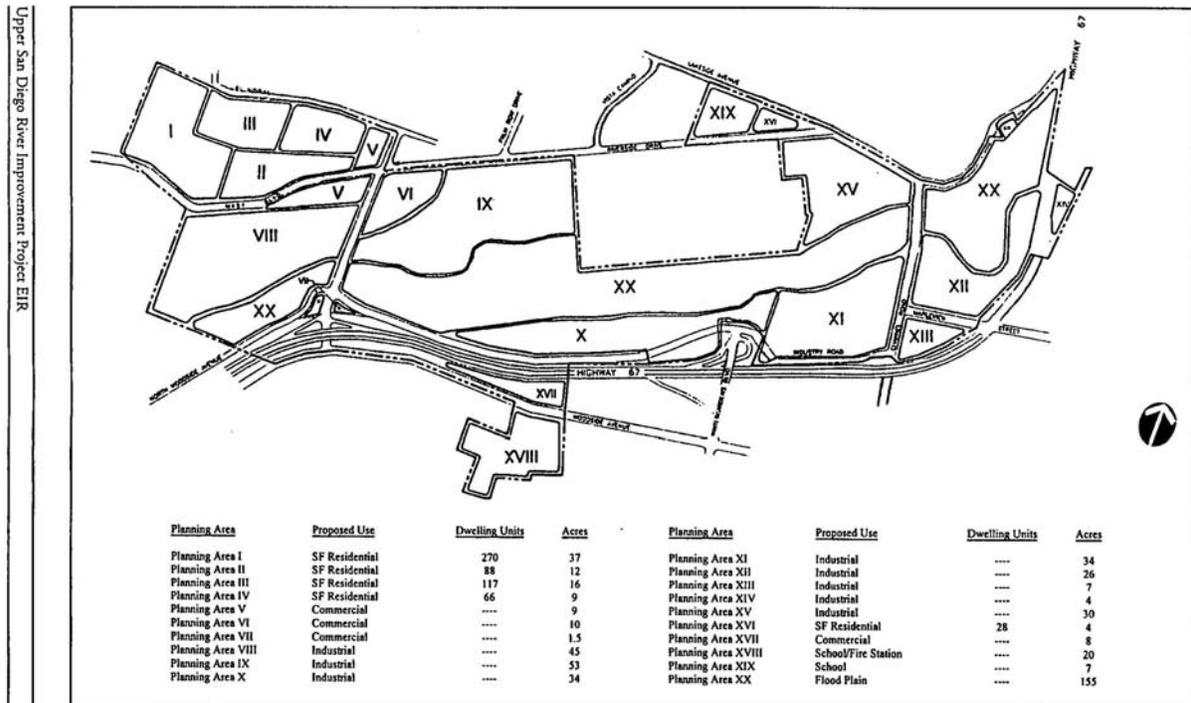


Fig. 1-5
RiverWay Specific Plan

not to scale
 Source: Brian F. Mooney Associates

PROJECT DESCRIPTION AND TRIP GENERATION

The proposed rezone would change the height designator from 35 feet with a two story maximum to 45 feet with no story limit. The land use of Industrial would remain unchanged.

The USDRIP EIR traffic analysis was based on the San Diego Association of Governments (SANDAG) Trip Generation rate for Industrial land use with 90 daily trips per acre (excerpts included in **Attachment A**). The SANDAG trip generation does not include details on the height associated with the Industrial land use.

The latest Institute of Transportation Engineers (ITE) 9th Edition *Trip Generation* includes a newer Industrial land use of “High-Cube Warehouse/Distribution Center”. The ITE trip rate is 1.68 daily trips per 1,000 square feet (**Attachment B**). ITE does not provide a trip rate per acre. ITE does identify a minimum ceiling height of at least 24 feet for this type of industrial land use, but no upper limit.

The SANDAG 90 daily trips per acre is the equivalent of 8 daily trips per 1,000 square feet (**Attachment C**); therefore, the comparison can be made between building size and not acreage. As shown in **Table 1**, an increase in building height using the ITE trip rates would result in a lower trip generation as compared to using SANDAG trip rates.

Table 1: SANDAG vs. ITE Trip Generation Comparison

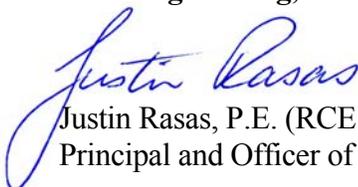
SANDAG Trip Rate	ITE Trip Rate	Trip Rate Delta
8 daily trips per 1,000 sf	1.68 daily trips per 1,000 sf	-6.32 daily trips per 1,000 sf

CONCLUSION

The proposed rezone with a height designator from 35 feet to 45 feet would not increase the trip generation rate for the industrial land uses within RiverWay Planning Areas 8 and 9. Rather, an increase in building height for industrial uses would reduce the 8 daily trips per 1,000 sf (SANDAG) to 1.68 daily trips per 1,000 sf (ITE), a reduction of 6.32 daily trips per 1,000 sf. Therefore, the USDRIP EIR traffic findings would either remain unchanged or possibility be reduced with implementation of the lower ITE trip rate associated with a High Cube Warehouse Industrial type of land use.

Please call me at 619-890-1253 if you have any questions.

Sincerely,
LOS Engineering, Inc.



Justin Rasas, P.E. (RCE 60690), PTOE
Principal and Officer of LOS Engineering, Inc.

Attachments

ATTACHMENT A

USD RIP EIR TRIP GENERATION RATE EXCERPTS

Upper San Diego River Improvement Project Final Programmatic Environmental Impact Report



July 2000, Revised August 2000

LOG NO. 98-10-014
SCH# 98041146

Prepared for:

County of San Diego
Department of Planning and Land Use
5201 Ruffin Road, Suite B
San Diego, CA 92123-1666

Contact: Kiersten Rydbeck Joseph DeStefano II
(858) 694-3016 (858) 694-3692

Prepared by:



P&D Environmental Services
401 West A Street, Suite 2500
San Diego, California 92101

**TABLE 2.1-5
COUNTY THRESHOLDS OF SIGNIFICANCE**

Level of Service With Project	Allowable Increase Due to Project Traffic	
	Intersections	Roadway Segments
	Delay (seconds)	Volume/Capacity
A	15	0.15
B	10	0.10
C	5	0.05
D	3	0.03
E	2	0.02
F	2	0.02

Source: County of San Diego Department of Public Works.

**TABLE 2.1-6
PROJECT TRAFFIC GENERATION**

LAND USE	SIZE	DAILY TRIP ENDS (ADT)		PM PEAK HOUR			
		RATE	VOLUME	% OF ADT	IN:OUT SPLIT	VOLUME	
						IN	OUT
Industrial	250 AC	90/AC	22,500	12%	20:80	500	3,075
Single Family	509 DU	10/DU	5,090	10%	70:30	360	150
Commercial	17.5 AC	500/AC	8,750	9%	50:50	395	395
Neighborhood Commercial	1.5 AC	1,200/AC	1,800	11%	50:50	100	100
Middle School	19.5 AC	40/AC	780	7%	30:70	165	380
Fire Station	0.5 AC	60/AC	30	10%	50:50	45	45
Elementary School	7.0 AC	60/AC	420	5%	30:70	5	15
TOTAL			39,370			1,570	3,075

Notes:

- 1) Source: Generation factors derived from the SANDAG Brief Guide, December 1996.
- 2) Rate is a trip end per dwelling unit (DU) or acre (AC).
- 3) Trip ends are one-way traffic movements, entering or leaving.
- 4) All ADTs are rounded to the nearest 10 and peak hour volumes are rounded to the nearest 5.

ATTACHMENT B

ITE TRIP RATES

Trip Generation Manual, 9th Edition

Volume 2: Data

The Institute of Transportation Engineers is an international educational and scientific association of transportation professionals who are responsible for meeting mobility and safety needs. ITE facilitates the application of technology and scientific principles to research, planning, functional design, implementation, operation, policy development and management for any mode of ground transportation. Through its products and services, ITE promotes professional development of its members, supports and encourages education, stimulates research, develops public awareness programs and serves as a conduit for the exchange of professional information.

Founded in 1930, ITE is a community of transportation professionals including, but not limited to transportation engineers, transportation planners, consultants, educators and researchers. Through meetings, seminars, publications and a network of nearly 17,000 members, working in more than 90 countries, ITE is your source for expertise, knowledge and ideas.



Institute of Transportation Engineers
1627 Eye Street, NW, Suite 600
Washington, DC 20006 USA
Telephone: +1 202-785-0060
Fax: +1 202-785-0609
www.ite.org

Copyright 2012 Institute of Transportation Engineers. Use of the *Trip Generation Manual* is governed by the license agreement that is bound with the three volumes of the *Trip Generation Manual* and is also available at [www.ite.org/Trip Generation Manual License Agreement](http://www.ite.org/Trip%20Generation%20Manual%20License%20Agreement).

Publication No. IR-016G
1200/BH/AGS/0912
First Printing

ISBN-13: 978-1-933452-64-7
ISBN-10: 1-933452-64-1
Printed in the United States of America

Land Use: 152

High-Cube Warehouse/Distribution Center

Description

High-cube warehouses/distribution centers are used for the storage of materials, goods and merchandise prior to their distribution to retail outlets, distribution centers or other warehouses. These facilities are typically characterized by ceiling heights of at least 24 feet with small employment counts due to a high level of mechanization. High-cube warehouses/distribution centers generally consist of large steel or masonry shell buildings and may be occupied by single or multiple tenants. A small ancillary office use component may be included and some limited assembly and repackaging may occur within these facilities.

High-cube warehouses/distribution centers may be located in industrial parks or be free-standing. Intermodal truck terminal (Land Use 030), industrial park (Land Use 130), manufacturing (Land Use 140) and warehousing (Land Use 150) are related uses.

Additional Data

Caution should be exercised when using the trip generation rates provided for this land use. The operational characteristics of the facilities contained in this land use may vary widely. The studies contained in this land use did not provide specific information on duration of storage, hours of operation or turnover rates. It is anticipated that facilities serving primarily a distribution function with high inventory turnover rates and very short-term storage functions would result in higher trip generation rates than facilities with longer term storage and lower turnover rates. **To assist in the future analysis and potential stratification of this land use, it is important that this information be collected and provided to ITE.**

Peak truck activities typically occur outside the peak hour of adjacent street traffic.

Truck trips accounted for 9 to 29 percent of the peak hour traffic at the sites that provided truck trip information.

Average truck trip generation rates for five sites are summarized in the table below. The average gross floor area of these facilities is 1,020,238 square feet. These sites are located in a rural area.

High-Cube Warehouse/Distribution Center (152)

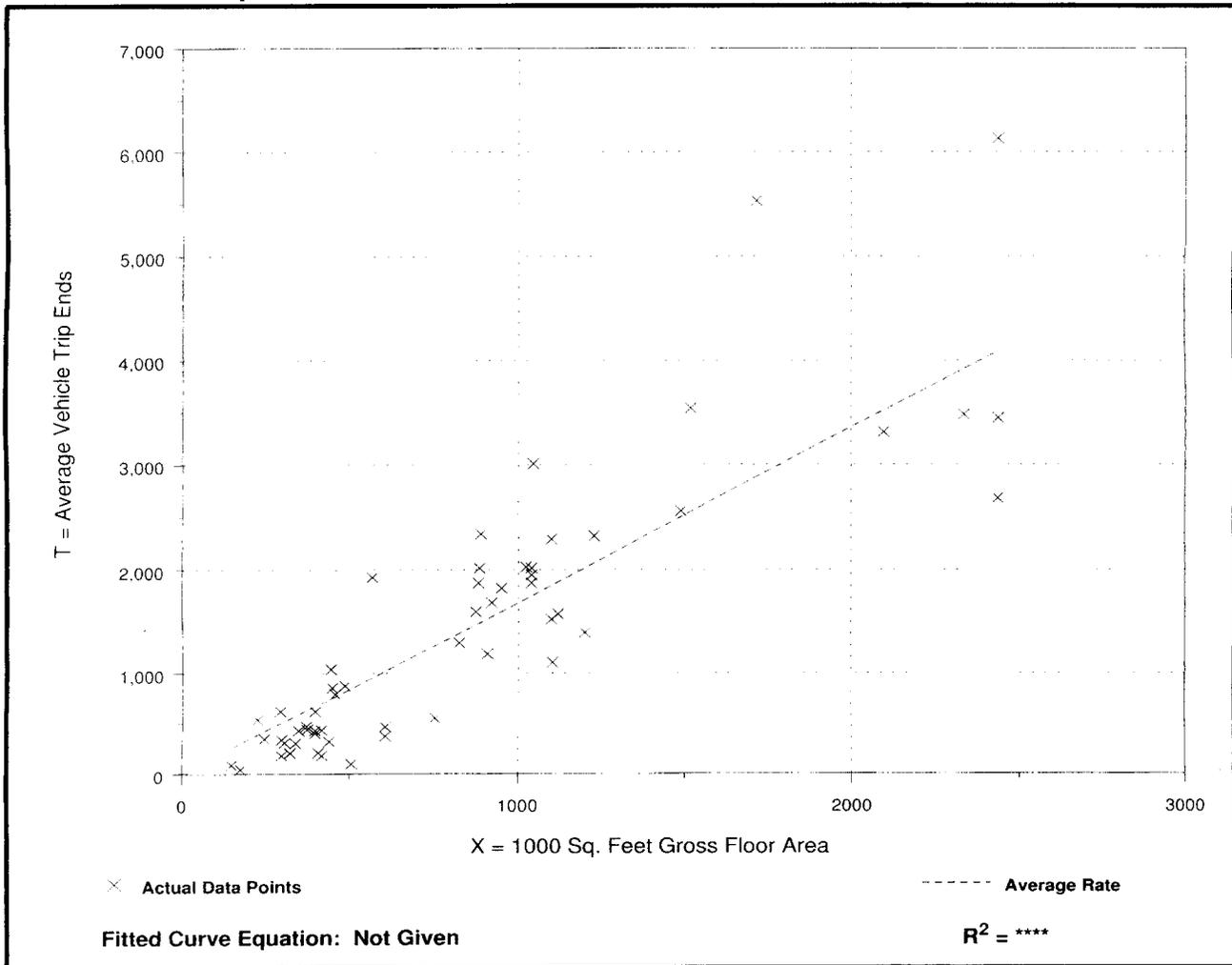
**Average Vehicle Trip Ends vs: 1000 Sq. Feet Gross Floor Area
On a: Weekday**

Number of Studies: 57
Average 1000 Sq. Feet GFA: 834
Directional Distribution: 50% entering, 50% exiting

Trip Generation per 1000 Sq. Feet Gross Floor Area

Average Rate	Range of Rates	Standard Deviation
1.68	0.20 - 3.40	1.46

Data Plot and Equation



ATTACHMENT C

SANDAG TRIP RATES

(NOT SO)
**BRIEF GUIDE OF VEHICULAR TRAFFIC GENERATION RATES
 FOR THE SAN DIEGO REGION**



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

APRIL 2002

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)		TRIP LENGTH (Miles) ^L
			Between 6:00-9:30 A.M.	Between 3:00-6:30 P.M.	
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)	8% (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	[54:35:11]	50/1000 sq. ft., ^C 500/acre*	4% (7:3)	9% (5:5)	5.2
(40-80acres, 400,000-800,000 sq. ft., w/usually 2+ major stores)					
Community Shopping Center	[47:31:22]	80/1000 sq. ft., 700/acre* **	4% (6:4)	10% (5:5)	3.6
(15-40 acres, 125,000-400,000 sq. ft., w/usually 1 major store, detached restaurant(s), grocery and drugstore)					
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% (6:4) 9% (3:7)	9% (5:5) 13% (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)

MEMBER AGENCIES: Cities of Carlsbad, Chula Vista, Coronado, Del Mar, El Cajon, Encinitas, Escondido, Imperial Beach, La Mesa, Lemon Grove, National City, Oceanside, Poway, San Diego, San Marcos, Santee, Solana Beach, Vista and County of San Diego.

ADVISORY/LIAISON MEMBERS: California Department of Transportation, County Water Authority, U.S. Department of Defense, S.D. Unified Port District and Tijuana/Baja California.

LAND USE	TRIP CATEGORIES [PRIMARY:DIVERTED:PASS-BY] ^P	ESTIMATED WEEKDAY VEHICLE TRIP GENERATION RATE (DRIVEWAY)	HIGHEST PEAK HOUR % (plus IN:OUT ratio)		TRIP LENGTH (Miles) ^L		
			Between 6:00-9:30 A.M.	Between 3:00-6:30 P.M.			
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	[77:19:4]	20/1000 sq. ft., ^o 300/acre*	14%	(9:1)	13%	(2:8)	8.8
(less than 100,000 sq. ft.)							
Large (High-Rise) Commercial Office	[82:15:3]	17/1000 sq. ft., ^o 600/acre*	13%	(9:1)	14%	(2:8)	10.0
(more than 100,000 sq. ft., 6+ stories)							
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		90/1000sq. 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]						5.4
City (developed w/meeting rooms and sports facilities)		50/acre*	4%		8%		
Regional (developed)		20/acre*	13%	(5:5)	9%	(5:5)	
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		12/dwelling unit**	8%	(3:7)	10%	(7:3)	
(average 1-2 DU/acre)							
Single Family Detached		10/dwelling unit**	8%	(3:7)	10%	(7:3)	
(average 3-6 DU/acre)							
Condominium		8/dwelling unit**	8%	(2:8)	10%	(7:3)	
(or any multi-family 6-20 DU/acre)							
Apartment		6/dwelling unit**	8%	(2:8)	9%	(7:3)	
(or any multi-family units more than 20 DU/acre)							
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: $\ln(T) = 0.502 \ln(x) + 6.945$ } T = total trips, x = 1,000 sq. ft.

^o Fitted curve equation: $\ln(T) = 0.756 \ln(x) + 3.950$ }

^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).