

TRANSPORTATION PLANNING & TRAFFIC ENGINEERING

W.M. Lyles Co.
c/o: Youngren Construction Inc.
443 East Alvarado St
Fallbrook, CA. 92028

Subject: Traffic Scoping Agreement for the Proposed 11,706 square foot Office Building and a 4,980 square foot Industrial Warehouse Building, located at 26501 Madison Avenue in the City of Murrieta. Case No: PRE-2019-1875

We have reanalyzed the trip generation of your proposed project to respond to the City comment to calculate trip generation, based on the fitted curve for the office use to determine if additional traffic analysis is required. Figure 1 is a vicinity map showing the location of your project and Figure 2 presents a copy of the proposed project site plan. The project proposes the development of a 11,706 square foot office building and a 4,970 square foot warehouse building. Access to the project is located at the northwest corner of your project site. The purpose of this analysis is to determine and identify the traffic analysis needed to satisfy the City of Murrieta Traffic Impact Analysis Preparation Guidelines.

Trip Generation

We have re-estimated project trip generation using the Institute of Transportation Engineers Trip Generation Manual, 10th Edition and use of the fitted curve process. Table 1 summarizes the Trip Generation Rates, Land Use and Density, and Daily, AM and PM peak hour trips generated by the project. Copies of the ITE Trip Generation Rates are presented in Attachment A.

Table 1 – Trip Generation Rates and Calculations Summary									
Trip Generation Rates									
Land Use	ITE Code	Daily	AM Peak Hour			PM Peak Hour			
			Rate	In: Out Ratio		Rate	In: Out Ratio		
Office	710	See footnote (2)	See footnote (2)	88:12		See footnote (2)	16:84		
Warehouse	150	1.74 Trips/ KSF	0.17/KSF	77:23		0.19/KSF	27:73		
Trip Generation Calculations									
Land Use	ITE Code	Density	ADT	AM Peak Hour			PM Peak Hour		
				In	Out	Total	In	Out	Total
Office	710	11,706 S.F.	132	34	4	38	3	12	15
Warehouse	150	4,970 S.F.	9	1	0	1	1	0	1
Total:			141	35	4	39	4	12	16
Note: KSF= 1,000 square feet,									
1) The trip rates for the project’s land uses are based on the Institute of Transportation Engineers (ITE)s Trip Generation Manual 10 th Edition Publication,									
2) The fitted curve equations for a general office building are $\text{Ln}(\text{T}) = 0.97\text{Ln}(\text{x}) + 2.50$ for daily trips, $\text{T} = 0.94(\text{x}) + 26.49$ for AM peak hour trips, and $\text{Ln}(\text{T}) = 0.95\text{Ln}(\text{x}) + 0.36$ for PM peak hour trips.									

LEVEL OF SERVICE ASSESSMENT

The next step in the analysis process, we compared the project trip generation shown on Table 1 to the City of Murrieta Traffic Impact Analysis Preparation Guide to determine if Level of Service (LOS) Analysis is required. The City of Murrieta Traffic Impact Analysis (TIA) Preparation Guidelines identifies a TIA is not required to include LOS (Level of Service) analysis if a project generates 100 or less peak hour trips to be distributed to the local roadway network. As shown on Table 1 the proposed project will generate 141 daily, 39 AM peak hour trips and 16 PM peak hour trips.

Comparison of the Table 1 Project Trip Generation for the project to the 100 peak hour criteria, it can be concluded the projects 39 AM and 16 PM peak hour trips are less than the 100 peak hour vehicle trips identified. Therefore, no additional traffic impact analysis is required.

VMT ANALYSIS

The City of Murrieta Traffic Impact Analysis Preparation Guidelines identifies that the City's General Plan Update and/or the Technical Advisory supporting SB 743 implementations concluded that projects that are local serving, which by definition would decrease the number of trips and/or the distance these trips travel to access the development are therefore VMT- Reducing projects.

The proposed land uses are consistent with the City of Murrieta 2040 General Plan. The project proposes employment opportunities in the City, that will reduce Vehicle Miles Traveled in the region to be consistent with SB743 adopted by the State of California in July 1,2020. The project site is located on a 5.8-acre site within the City of Murrieta Traffic Analysis Zone (TAZ) 43410401

Review of TAZ 43410401 identifies in 2016 the area total employment was 52 with 8 retail and 44 non-retail employees. The existing employment is located in the south easterly quadrant to the TAZ representing approximately 25 percent of the TAZ 43410401. The remainder of the TAZ is undeveloped and forecast in 2040 to have 512 additional employees to be added to the TAZ. Discussions with the applicant estimates opportunity for 25 employees will be generated with the proposed project to increase employees generated in the TAZ to 77 employees (52+25). This leaves the remainder of the TAZ to be undeveloped and add an additional 475 employees to assist in reducing the VMT.


In summary the project is consistent with the City of Murrieta 2040 General Plan and will provide employment opportunities in the City of Murrieta to reduce Vehicle Miles Traveled in the region. Therefore, no additional VMT analysis is required.

The projects 141 daily, 39 AM and 16 PM peak hour trips satisfy's the City of Murrieta Traffic Impact Analysis Exemptions to not require any additional traffic impact analysis and will provide local serving uses to be screen out of the need to provide additional VMT analysis.

Please call if you have any questions or need additional information.

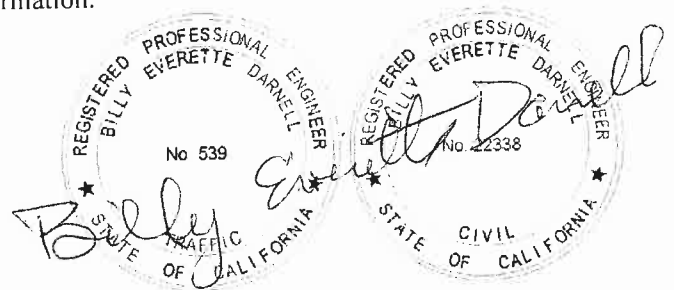
Sincerely,

DARNELL & ASSOCIATES,


Bill E. Darnell, P.E.
RCE: 22338

BED/jam

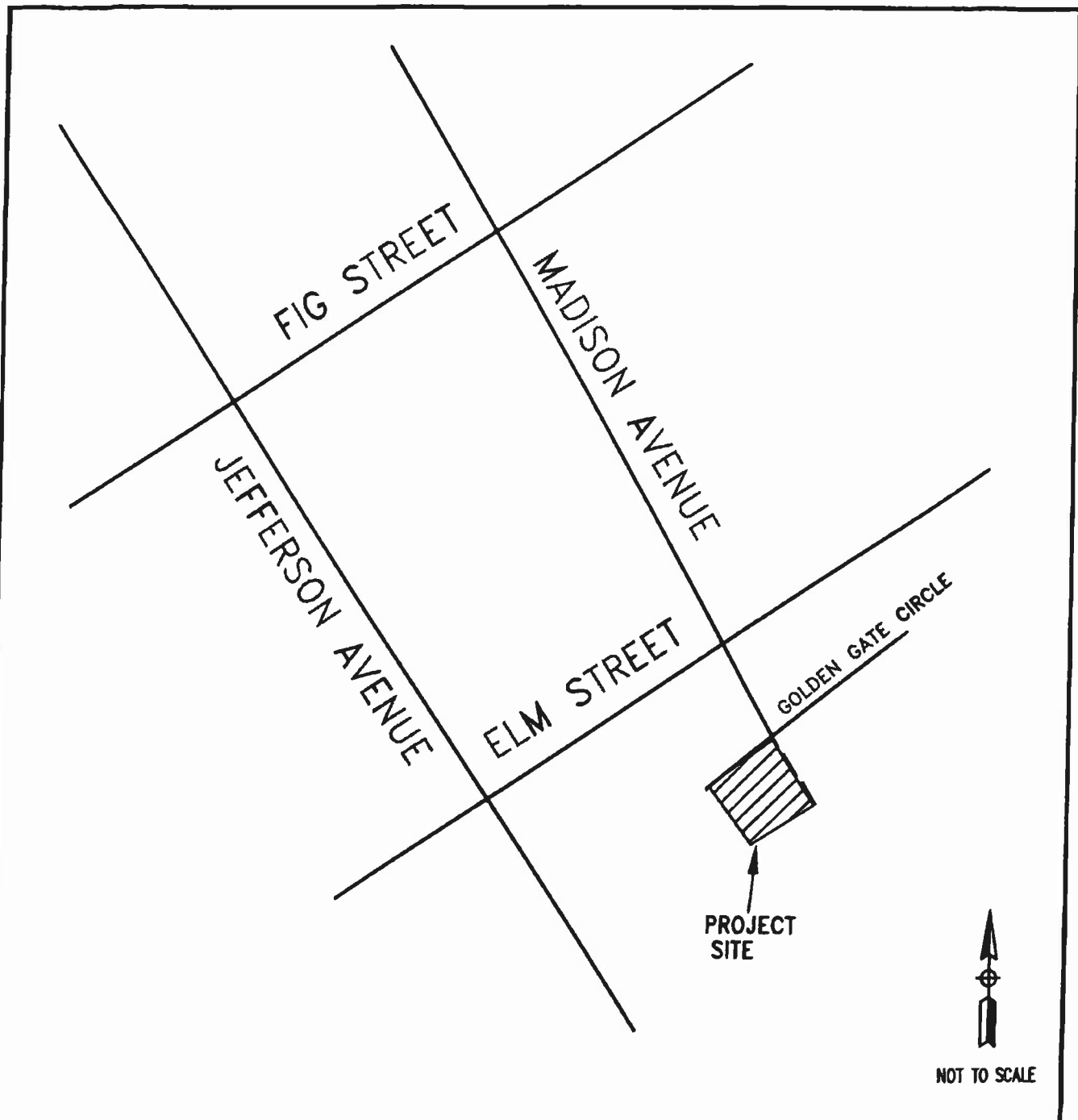
200204 - Traffic Scoping Agreement Analysis for the W M Lyles Project_ Jan 12, 2021.doc



1/12/2021
(Date)

Attachment A

- ITE Code 150 Warehousing Trip Generation Rates
 - ITE Code 710 Office Trip Generation Rates



LEGEND

 - PROJECT SITE

Darnell & ASSOCIATES

200204-oo.dwg 2-20-20

JAM

FIGURE 1
STUDY AREA INTERSECTIONS

2019 GREEN BUILDING CODE REQUIREMENTS

INDOOR WATER USE
SHOW COMPLIANCE WITH THE FOLLOWING TABLE FOR NEW/REPLACED FIXTURES, PER CGC 4.303.1.

FIXTURE TYPE	MAXIMUM FLOW RATE
WATER CLOSETS	1.28 GPM @ 80 PSI
SHOWERS/HEADS	1.8 GPM @ 80 PSI
LAVATORY FAUCETS	1.2 GPM @ 80 PSI
KITCHEN FAUCETS	1.8 GPM @ 80 PSI
METERING FAUCETS	0.25 GALLONS PER CYCLE

WHEN A SHOWER IS PROVIDED WITH MULTIPLE SHOWER HEADS, THE SUM OF FLOW TO ALL THE HEADS SHALL NOT EXCEED 2.0 GPM @ 80 PSI, OR THE SHOWER SHALL BE DESIGNED SO THAT ONLY ONE HEAD IS ON AT A TIME. CGC 4.303.1.3.2.

LANDSCAPE IRRIGATION
WATER USE SHALL HAVE WEATHER OR SOIL BASED CONTROLLERS. CGC 4.304.1.

RECYCLING
A MINIMUM OF 65% OF CONSTRUCTION WASTE IS TO BE RECYCLED. CGC 4.408.1.

THE CONTRACTOR SHALL SUBMIT A CONSTRUCTION WASTE MANAGEMENT PLAN TO THE JURISDICTION AGENCY THAT REGULATES WASTE MANAGEMENT, PER CGC 4.408.2.

OPERATION AND MAINTENANCE MANUAL
THE BUILDER IS TO PROVIDE AN OPERATION MANUAL (CONTAINING INFORMATION FOR MAINTAINING APPLIANCES, ETC.) FOR THE OWNER AT THE TIME OF FINAL INSPECTION. CGC 4.410.1.

POLLUTANT CONTROL
DURING CONSTRUCTION, ENDS OF DUCT OPENINGS ARE TO BE SEALED, AND MECHANICAL EQUIPMENT IS TO BE COVERED. CGC 4.504.1.

VOC'S MUST COMPLY WITH THE LIMITATIONS LISTED IN SECTION 4.504.3 AND TABLES 4.504.1, 4.504.2, 4.504.3 AND 4.504.3 FOR: ADHESIVES, PAINTS AND COATINGS, CARPET AND COMPOSITION WOOD PRODUCTS. CGC 4.504.2

INTERIOR MOISTURE CONTROL
CONCRETE SLABS WILL BE PROVIDED WITH A CAPILLARY BREAK. CGC 4.505.2.1.

THE MOISTURE CONTENT OF WOOD SHALL NOT EXCEED 10% BEFORE IT IS ENCLOSED IN CONSTRUCTION. THE MOISTURE CONTENT NEEDS TO BE CERTIFIED BY ONE OF 3 METHODS SPECIFIED IN SECTION 4.505.3. BUILDING MATERIALS WITH VISIBLE SIGNS OF WATER DAMAGE SHOULD NOT BE USED IN CONSTRUCTION. THE MOISTURE CONTENT MUST BE DETERMINED BY THE CONTRACTOR BY ONE OF THE METHODS LISTED IN CGC 4.505.3.

INDOOR AIR QUALITY
BATHROOM FANS SHALL BE ENERGY STAR RATED, VENTED DIRECTLY TO THE OUTSIDE AND CONTROLLED BY A HUMIDISTAT. CGC 4.506.1.

WRITTEN VERIFICATION
PRIOR TO FINAL INSPECTION THE LICENSED CONTRACTOR, ARCHITECT OR ENGINEER IN RESPONSIBLE CHARGE OF THE OVERALL CONSTRUCTION MUST PROVIDE TO THE BUILDING DEPARTMENT OFFICIAL WRITTEN VERIFICATION THAT ALL APPLICABLE PROVISIONS FROM THE GREEN BUILDING STANDARDS CODE HAVE BEEN IMPLEMENTED AS PART OF THE CONSTRUCTION. CGC 102.3.

MADISON AVE

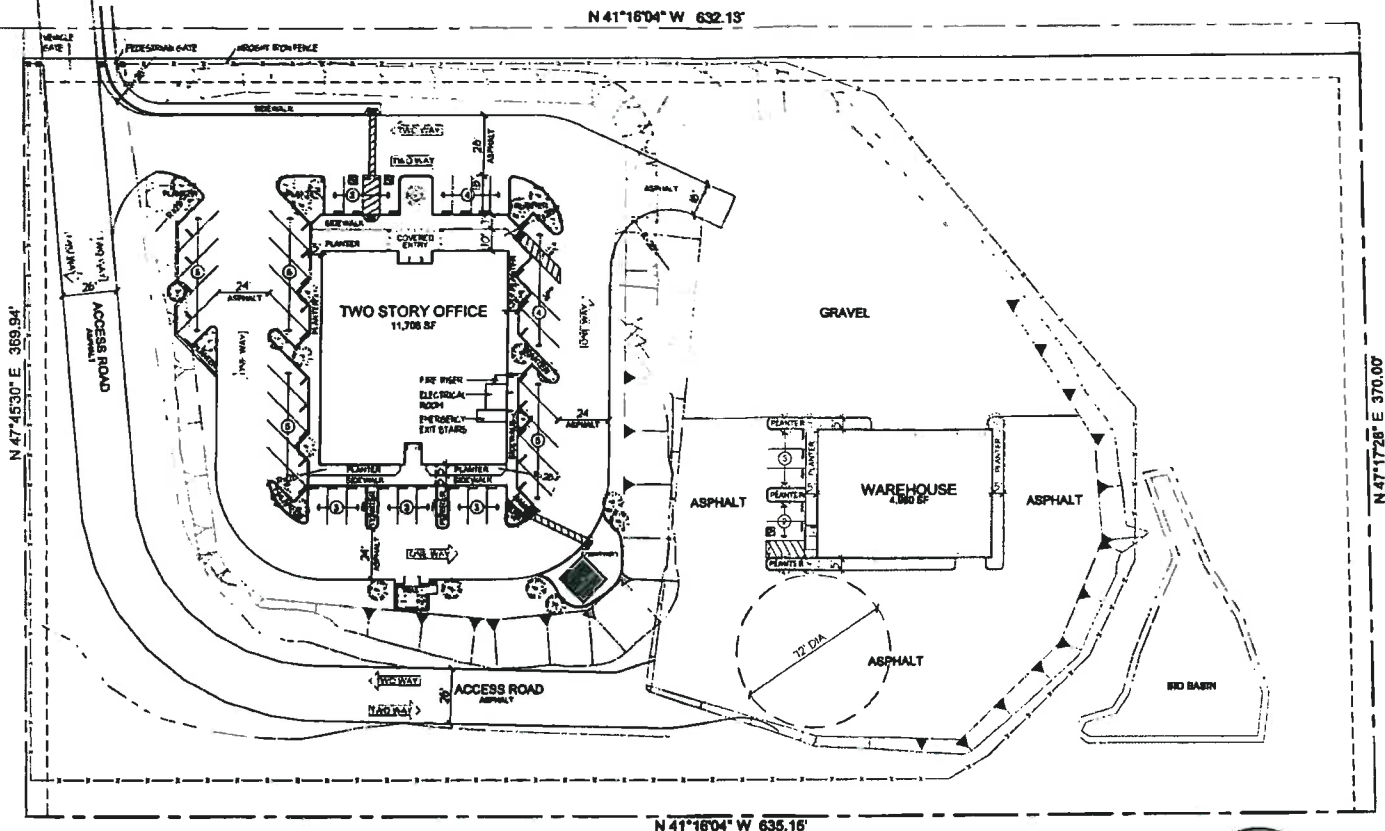


FIGURE - 2 PROPOSED PROJECT SITE PLAN



SITE PLAN
SCALE = 1"=40'-0"

HAZARDOUS MATERIALS

THERE SHALL BE NO HAZARDOUS MATERIALS STORED OR USED WITHIN THE BUILDING WHICH WOULD EXCEED THE QUANTITIES LISTED IN IBC TABLES 907.11 AND 907.12.

DEFERRED SUBMITTALS

DEFERRED SUBMITTAL AND SEPARATE PERMITS ARE REQUIRED FOR THE FOLLOWING:

- FIRE SPRINKLERS
- FIRE ALARMS
- HIGH PILE STORAGE

SUBMITTAL DOCUMENTS FOR DEFERRED SUBMITTAL ITEMS SHALL BE SUBMITTED TO THE REGISTERED DESIGN PROFESSIONAL IN RESPONSIBLE CHARGE WHO SHALL REVIEW THEM AND FORWARD THEM TO THE BUILDING OFFICIAL WITH A NOTATION INDICATING THAT THE DEFERRED SUBMITTAL DOCUMENTS HAVE BEEN REVIEWED AND THAT THEY HAVE BEEN FOUND TO BE IN GENERAL CONFORMANCE WITH THE DESIGN OF THE BUILDING. THE DEFERRED SUBMITTAL ITEMS SHALL NOT BE INSTALLED UNTIL THEIR DESIGN AND SUBMITTAL DOCUMENTS HAVE BEEN APPROVED BY THE BUILDING OFFICIAL.

ALLOWABLE AREA ANALYSIS

OPEN YARDS 4 SIDES	MIN YARD WIDTH 80 FT	AREA INCREASE UNLIMITED	S.F. P. B
BASIC AREA SPT IBC TABLE 506.2	A	A	8000
AREA INCREASE FOR OPEN YARDS IBC 506.3	B	12'	11000
AREA INCREASE FOR SPRINKLERS	C	12'	84000
AREA INCREASE FOR MULTI-STORY	D	12'	88000
MAXIMUM BUILDING AREA SPT IBC 506.2			UNLIMITED IBC 506.2
MAXIMUM STORES IBC TABLE 504.4	F	F	3
STORES INCREASE FOR SPRINKLERS IBC 505.3	G	12'	2
NUMBER OF BUILDING STORES (N)			2
MAXIMUM BUILDING HEIGHT IBC TABLE 504.5			4C

OCCUPANT LOAD

OCCUPANCY	sq.ft.	100 sq.ft.	1000
(N) OFFICES (B)	11706	100	117
(N) WAREHOUSE (B)	4,880	100	10
TOTAL OCCUPANT LOAD	16,586 SF		127

SITE PARKING REQUIRED

OFFICES	12,000 SF	20 SPACES
1 FIRST 5,000 SF	5,000 SF / 250	20 SPACES
1 ABOVE 5,000 SF	1,000 SF / 500	20 SPACES
WAREHOUSE	2,000 SF / 1,000	5 SPACES

REQUIRED TOTAL PARKING SPACES	45 SPACES
PROVIDED TOTAL PARKING SPACES	45 SPACES

ACCESSIBLE PARKING (1 VAN ACCESSIBLE)

REQUIRED SPACES	2 SPACES
PROVIDED SPACES	3 SPACES

CLEAN AIR VAN POOL - ELECTRIC VEHICLE PARKING (1 VAN ACCESSIBLE)

REQUIRED SPACES	2 SPACES
PROVIDED SPACES	2 SPACES

TOTAL SITE PARKING PROVIDED

STANDARD STALLS (N=10)	40 SPACES
ACCESSIBLE (IN CLING 1 VAN ACCESSIBLE)	3 SPACES
CLEAN AIR VAN POOL, EV	2 SPACES
TOTAL	45 SPACES

MINIMUM PLUMBING FIXTURES

OFFICE OCCUPANT LOAD = 117 (B) (84 sq ft M/F)	OCCUPANCY B
WATER CLOSETS REQUIRED	
MALE 1 FOR 100 OCCUPANTS	
FEMALE 1 FOR 100 OCCUPANTS	
URINALS REQUIRED	
MALE 1 FOR 100 OCCUPANTS	
FEMALE 1 FOR 100 OCCUPANTS	
WATER CLOSETS REQUIRED	
MALE 1 FOR 100 OCCUPANTS	
FEMALE 1 FOR 100 OCCUPANTS	
URINALS REQUIRED	
MALE 1 FOR 100 OCCUPANTS	
FEMALE 1 FOR 100 OCCUPANTS	
WATER CLOSETS REQUIRED	
MALE 1 FOR 100 OCCUPANTS	
FEMALE 1 FOR 100 OCCUPANTS	
URINALS REQUIRED	
MALE 1 FOR 100 OCCUPANTS	
FEMALE 1 FOR 100 OCCUPANTS	

WAREHOUSE OCCUPANT LOAD = 10 (B) (84 sq ft M/F)

WATER CLOSETS REQUIRED	OCCUPANCY S
MALE 1 FOR 100 OCCUPANTS	
FEMALE 1 FOR 100 OCCUPANTS	
URINALS REQUIRED	
MALE 1 FOR 100 OCCUPANTS	
FEMALE 1 FOR 100 OCCUPANTS	
WATER CLOSETS REQUIRED	
MALE 1 FOR 100 OCCUPANTS	
FEMALE 1 FOR 100 OCCUPANTS	
URINALS REQUIRED	
MALE 1 FOR 100 OCCUPANTS	
FEMALE 1 FOR 100 OCCUPANTS	

STRUCTURAL ENGINEER

DAVE HENRIKSON	26439 RANCHO PKWY S SUITE 120	LAKE FOREST, CA 92650	(949) 267-4045
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MECHANICAL ENGINEER

DAVE HENRIKSON	26439 RANCHO PKWY S SUITE 120	LAKE FOREST, CA 92650	(949) 267-4045
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CODE COMPLIANCE

THIS PROJECT SHALL COMPLY WITH TITLE 24, AND 2019 CALIFORNIA BUILDING CODE AS APPLICABLE
2019 CALIFORNIA GREEN BUILDING CODE
2019 CALIFORNIA ELECTRICAL CODE
2019 CALIFORNIA PLUMBING CODE
2019 CALIFORNIA MECHANICAL CODE
2019 CALIFORNIA FIRE CODE
2019 CALIFORNIA BUILDING ENERGY EFFICIENCY STANDARDS
THESE PLANS AND ALL WORK SHALL COMPLY WITH THE CALIFORNIA BUILDING STANDARD CODE FOUND IN THE STATE OF CALIFORNIA TITLE 24 CCR AS AMENDED AND ADOPTED BY THE CITY OF MURRIETA.

SCOPE OF WORK

- CONSTRUCT A NEW 11,706 SF TWO STORY OFFICE STRUCTURE
- CONSTRUCT A NEW 4,880 SF SINGLE STORY WAREHOUSE STRUCTURE
- CONSTRUCT A NEW 50' OUTDOOR COURTYARD
- CONSTRUCT A NEW 50' TRASH ENCLOSURE

PROJECT DIRECTORY

OWNER/APPLICANT M LYLES CO 42142 ROCK DR TEMECULA, CA 92590 (951) 728-1943	GENERAL CONTRACTOR YOUNGER CONSTRUCTION 443 E ALVARADO ST FALLBROOK, CA 92028 (949) 472-1943	ELECTRICAL ENGINEER GMEP ENGINEERS 26439 RANCHO PKWY S SUITE 120 LAKE FOREST, CA 92650 (949) 267-4045	PLUMBING ENGINEER GMEP ENGINEERS 26439 RANCHO PKWY S SUITE 120 LAKE FOREST, CA 92650 (949) 267-4045
ARCHITECT SHAUN O'BRIEN 254 N CLEMENS LANE #20 FALLBROOK, CA 92028 (949) 401-0950	MECHANICAL ENGINEER GMEP ENGINEERS 26439 RANCHO PKWY S SUITE 120 LAKE FOREST, CA 92650 (949) 267-4045	TITLE 24 ENGINEER GMEP ENGINEERS 26439 RANCHO PKWY S SUITE 120 LAKE FOREST, CA 92650 (949) 267-4045	

PROJECT DATA

SITE ADDRESS

26501 MADISON AVE
MURRIETA, CA 92562

OWNER

M LYLES CO
42142 ROCK DR
TEMECULA, CA 92590
(951) 728-1943

AGENT FOR APPLICANT

DAVE HENRIKSON
HENRIKSON BUILDING DESIGN
35175 TEMECULA PARKWAY #A20
TEMECULA, CA 92592
(951) 728-1943

LEGAL DESCRIPTION

APN: 610-250-003
RIG BOOK/PAGE PM 2090
SUBDIVISION PM 1065
LOT 2

BUILDING DATA

DEVELOPMENT PERMIT NO

ZONING DESIGNATION
GENERAL PLAN DESIGNATION
EXISTING LAND USE

TOTAL SITE AREA (GROSS)
TOTAL BUILDING AREA (PROPOSED)

OFFICE BUILDING
WAREHOUSE
TOTAL

11,706 SF
4,880 SF
16,586 SF

FLOOR AREA RATIO (FAR)
FLOOR AREA RATIO ALLOWED

0.01
0

LANDSCAPED AREA
LANDSCAPE AREA REQUIRED

36,000 SF
(15%) 35,150 SF

NUMBER OF STORES
BUILDING HEIGHT

2 ABOVE GRADE
37'-0" MAX

BUILDING HEIGHT ALLOWED
TYPE OF CONSTRUCTION

30'-0" MAX
TYPE V-MR FULLY SPRINKLED

OCCUPANCY CLASSIFICATION

B (BUSINESS)
S1 (WAREHOUSE)

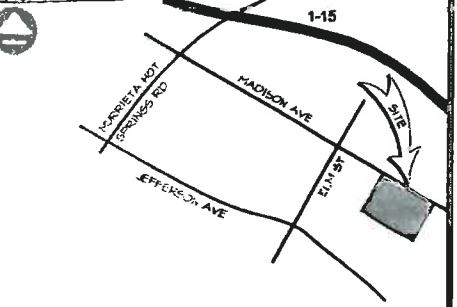
FIRE SPRINKLERS

YES, SPRINKLERS ARE MONITORED

SHEET INDEX

NO.	DESCRIPTION
A01	SITE PLAN / PROJECT INFORMATION
A02	SITE DETAILS / TRASH ENCLOSURE
A03	OFFICE FIRST FLOOR PLAN AND KEY NOTES
A04	OFFICE FIRST FLOOR DIMENSION PLAN
A05	OFFICE SECOND FLOOR PLAN AND KEY NOTES
A06	OFFICE SECOND FLOOR DIMENSION PLAN
A07	WAREHOUSE FLOOR PLAN
A08	OFFICE ROOF PLAN
A09	OFFICE ELEVATIONS
A10	OFFICE ELEVATIONS
A11	WAREHOUSE ELEVATIONS

VICINITY MAP



REVISIONS

NO.	DESCRIPTION
1	ISSUED FOR PERMIT



HENRIKSON BUILDING DESIGN
DAVE HENRIKSON, PRINCIPAL DESIGNER
35175 TEMECULA PARKWAY #A20
TEMECULA, CA 92592
(951) 728-1943
e-mail: davehenriksn@hdd.com

YOUNGER CONSTRUCTION INC.
General Construction, Design, Remodeling
443 East Alvarado Street, Fallbrook, CA 92028
760.728.1943 office 760.728.0258 fax 760.750.5556
www.youngconstruction.com

REQUEST NAME
M LYLES
26501 MADISON
MURRIETA, CA 92562

JOB NO: M-12

DATE: 2/19/2020

DESIGNER: DVM

CHECKED: DVM

SCALE: 1"=40'-0"

SHEET TITLE

SITE PLAN

SHEET NO.

A0.1

Land Use: 150 Warehousing

Description

A warehouse is primarily devoted to the storage of materials, but it may also include office and maintenance areas. High-cube transload and short-term storage warehouse (Land Use 154), high-cube fulfillment center warehouse (Land Use 155), high-cube parcel hub warehouse (Land Use 156), and high-cube cold storage warehouse (Land Use 157) are related uses.

Additional Data

Time-of-day distribution data for this land use are presented in Appendix A. For the 13 general urban/suburban sites with data, the overall highest vehicle volumes during the AM and PM on a weekday were counted between 11:30 a.m. and 12:30 p.m. and 3:00 and 4:00 p.m., respectively.

The sites were surveyed in the 1980s, the 1990s, the 2000s, and the 2010s in California, Connecticut, Minnesota, New Jersey, New York, Ohio, Oregon, Pennsylvania, and Texas.

Source Numbers

184, 331, 406, 411, 443, 579, 583, 596, 598, 611, 619, 642, 752, 869, 875, 876, 914, 940

Warehousing (150)

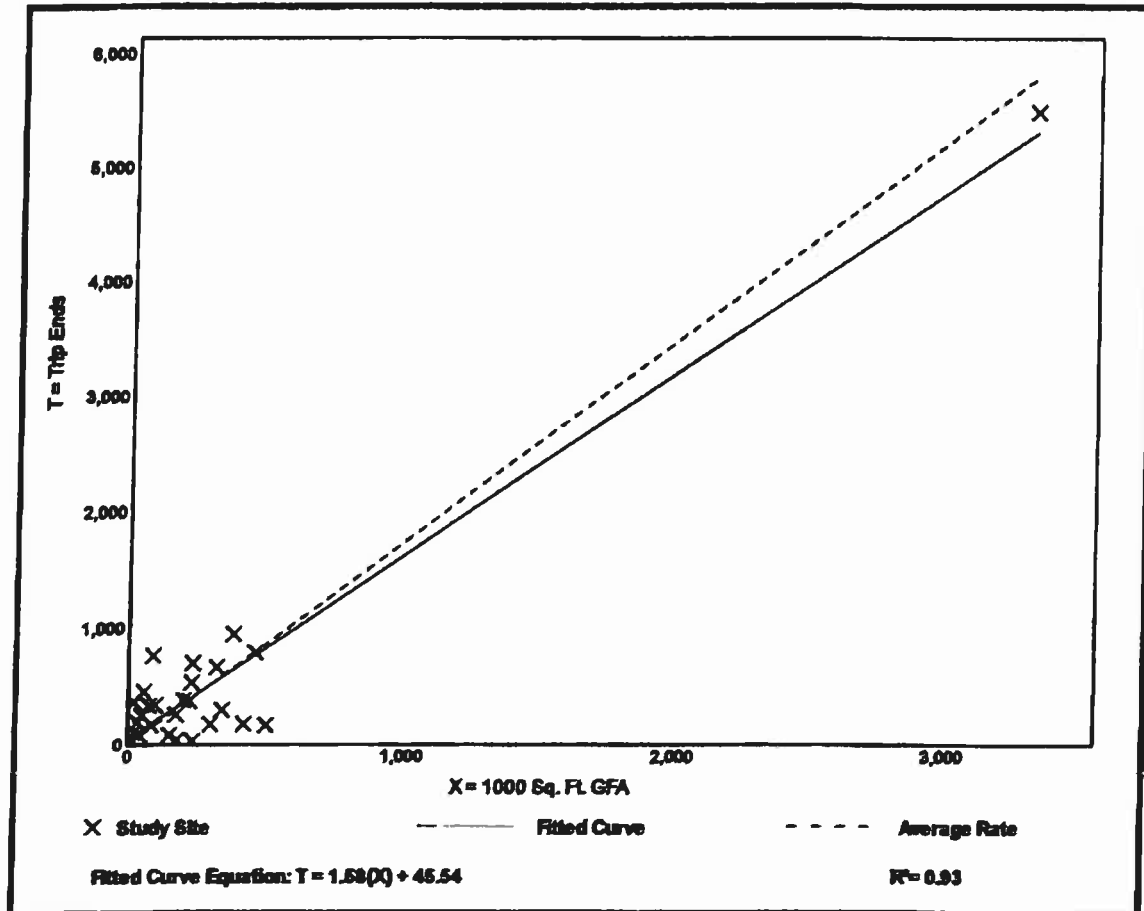
Vehicle Trip Ends vs: 1000 Sq. Ft. GFA
On a: Weekday

Setting/Location: General Urban/Suburban
Number of Studies: 29
1000 Sq. Ft. GFA: 285
Directional Distribution: 50% entering, 50% exiting

Vehicle Trip Generation per 1000 Sq. Ft. GFA

Average Rate	Range of Rates	Standard Deviation
1.74	0.15 - 16.93	1.55

Data Plot and Equation



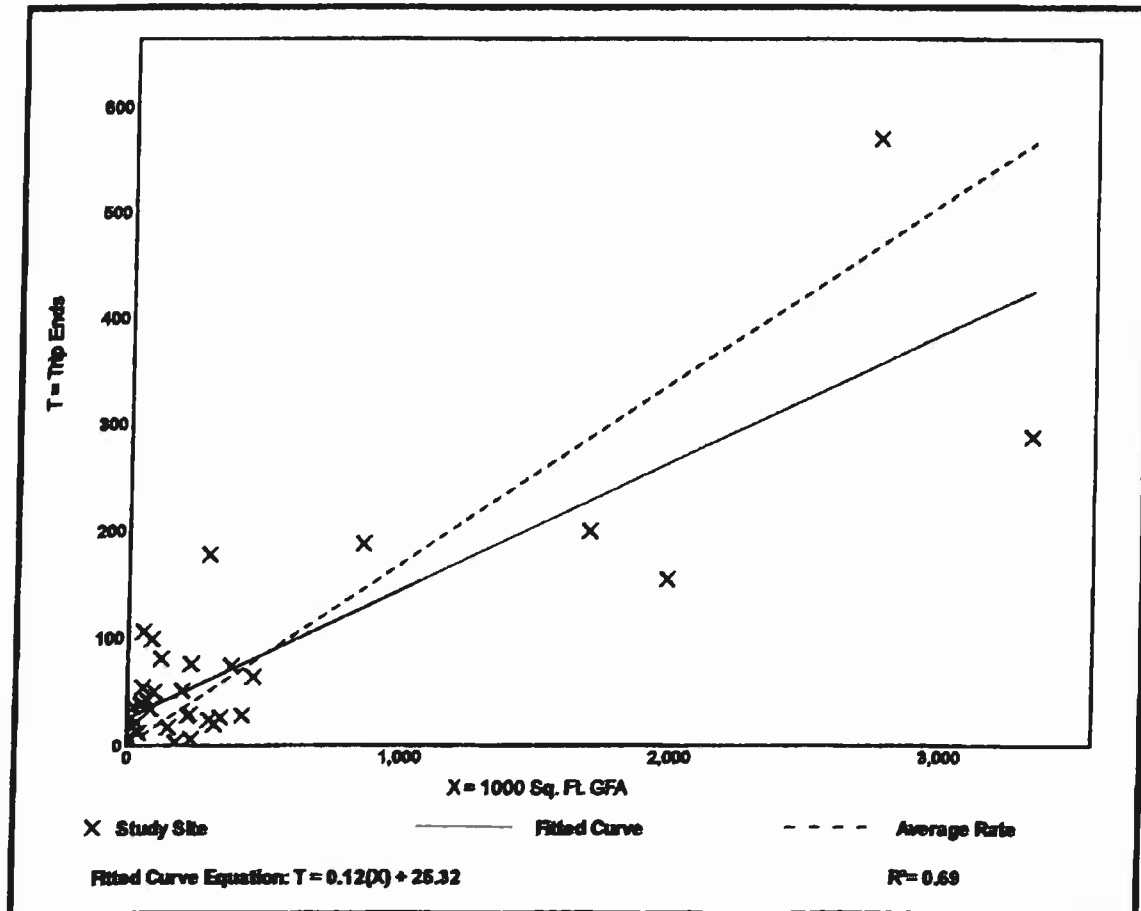
Warehousing (150)

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
1000 Sq. Ft. GFA: 451
Directional Distribution: 77% entering, 23% exiting

Vehicle Trip Generation per 1000 Sq. Ft. GFA

Average Rate	Range of Rates	Standard Deviation
0.17	0.02 - 1.93	0.20

Data Plot and Equation



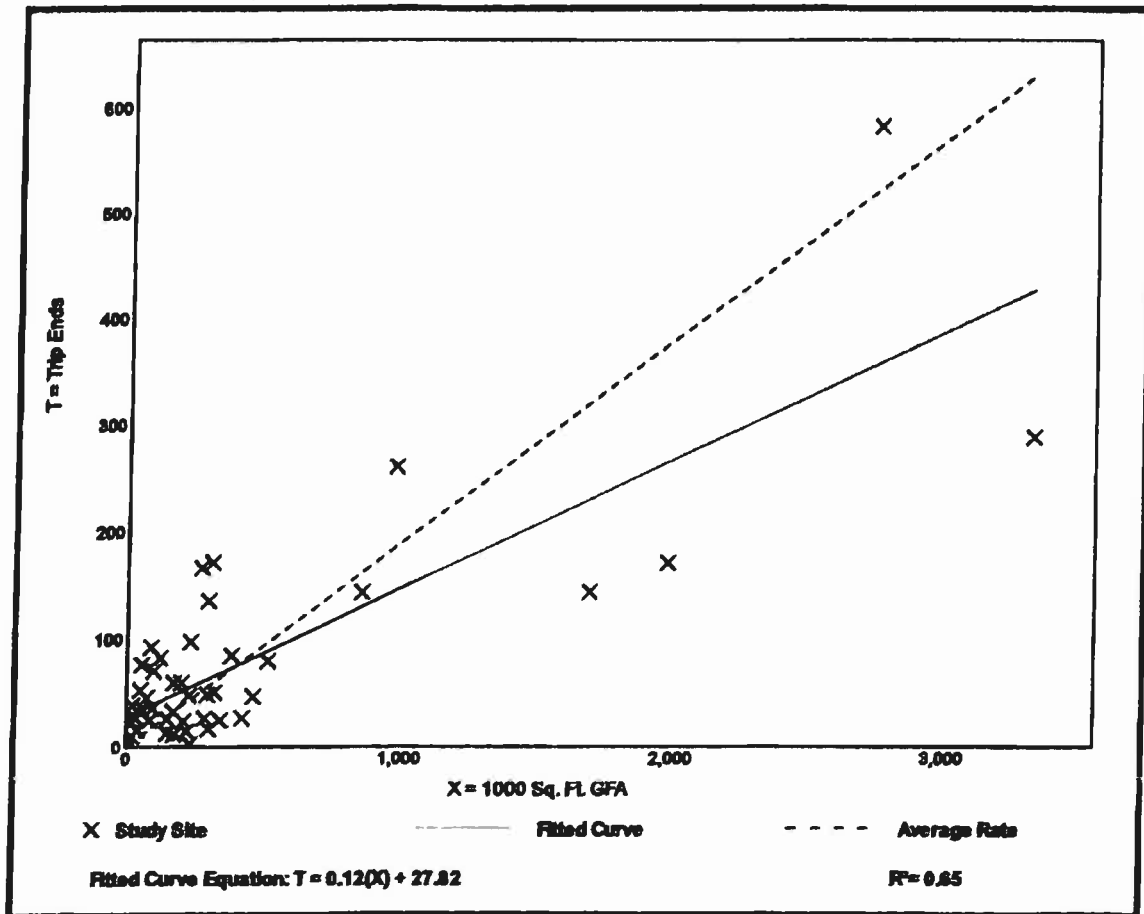
Warehousing (150)

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: 47
1000 Sq. Ft. GFA: 400
Directional Distribution: 27% entering, 73% exiting

Vehicle Trip Generation per 1000 Sq. Ft. GFA

Average Rate	Range of Rates	Standard Deviation
0.19	0.01 - 1.80	0.18

Data Plot and Equation



Land Use: 710

General Office Building

Description

A general office building houses multiple tenants; it is a location where affairs of businesses, commercial or industrial organizations, or professional persons or firms are conducted. An office building or buildings may contain a mixture of tenants including professional services, insurance companies, investment brokers, and tenant services, such as a bank or savings and loan institution, a restaurant, or cafeteria and service retail facilities. A general office building with a gross floor area of 5,000 square feet or less is classified as a small office building (Land Use 712). Corporate headquarters building (Land Use 714), single tenant office building (Land Use 715), office park (Land Use 750), research and development center (Land Use 760), and business park (Land Use 770) are additional related uses.

If information is known about individual buildings, it is suggested that the general office building category be used rather than office parks when estimating trip generation for one or more office buildings in a single development. The office park category is more general and should be used when a breakdown of individual or different uses is not known. If the general office building category is used and if additional buildings, such as banks, restaurants, or retail stores are included in the development, the development should be treated as a multiuse project. On the other hand, if the office park category is used, internal trips are already reflected in the data and do not need to be considered.

When the buildings are interrelated (defined by shared parking facilities or the ability to easily walk between buildings) or house one tenant, it is suggested that the total area or employment of all the buildings be used for calculating the trip generation. When the individual buildings are isolated and not related to one another, it is suggested that trip generation be calculated for each building separately and then summed.

Additional Data

The average building occupancy varied considerably within the studies for which occupancy data were provided. The reported occupied gross floor area was 88 for general urban/suburban sites and 96 percent for the center city core and dense multi-use urban sites.

Time-of-day distribution data for this land use for a weekday, Saturday, and Sunday are presented in Appendix A. For the 16 general urban/suburban sites with data, the overall highest vehicle volumes during the AM and PM on a weekday were counted between 7:30 and 8:30 a.m. and 4:30 and 5:30 p.m., respectively.

For the three general urban/suburban sites with person trip data, the overall highest volumes during the AM and PM on a weekday were counted between 8:45 and 9:45 a.m. and 12:45 and 1:45 p.m., respectively. For the three dense multi-use urban sites with person trip data, the overall highest volumes during the AM and PM on a weekday were counted between 8:30 and 9:30 a.m. and 4:45 and 5:45 p.m., respectively. For the four center city core sites with person trip data, the overall highest volumes during the AM and PM on a weekday were counted between 9:00 and 10:00 a.m. and 12:45 and 1:45 p.m., respectively.

The average numbers of person trips per vehicle trip at the eight center city core sites at which both person trip and vehicle trip data were collected were as follows:

- 2.76 during Weekday, Peak Hour of Adjacent Street Traffic, one hour between 7 and 9 a.m.
- 2.90 during Weekday, AM Peak Hour of Generator
- 2.91 during Weekday, Peak Hour of Adjacent Street Traffic, one hour between 4 and 6 p.m.
- 3.02 during Weekday, PM Peak Hour of Generator

The average numbers of person trips per vehicle trip at the 18 dense multi-use urban sites at which both person trip and vehicle trip data were collected were as follows:

- 1.47 during Weekday, Peak Hour of Adjacent Street Traffic, one hour between 7 and 9 a.m.
- 1.47 during Weekday, AM Peak Hour of Generator
- 1.46 during Weekday, Peak Hour of Adjacent Street Traffic, one hour between 4 and 6 p.m.
- 1.53 during Weekday, PM Peak Hour of Generator

The average numbers of person trips per vehicle trip at the 23 general urban/suburban sites at which both person trip and vehicle trip data were collected were as follows:

- 1.30 during Weekday, Peak Hour of Adjacent Street Traffic, one hour between 7 and 9 a.m.
- 1.34 during Weekday, AM Peak Hour of Generator
- 1.32 during Weekday, Peak Hour of Adjacent Street Traffic, one hour between 4 and 6 p.m.
- 1.41 during Weekday, PM Peak Hour of Generator

The sites were surveyed in the 1980s, the 1990s, the 2000s, and the 2010s in Alberta (CAN), California, Colorado, Connecticut, Georgia, Illinois, Indiana, Kansas, Kentucky, Maine, Maryland, Michigan, Minnesota, Missouri, Montana, New Hampshire, New Jersey, New York, Pennsylvania, Texas, Utah, Virginia, and Washington.

Source Numbers

161, 175, 183, 184, 185, 207, 212, 217, 247, 253, 257, 260, 262, 273, 279, 297, 298, 300, 301, 302, 303, 304, 321, 322, 323, 324, 327, 404, 407, 408, 418, 419, 423, 562, 734, 850, 859, 862, 867, 869, 883, 884, 890, 891, 904, 940, 944, 946, 964, 985, 972

General Office Building (710)

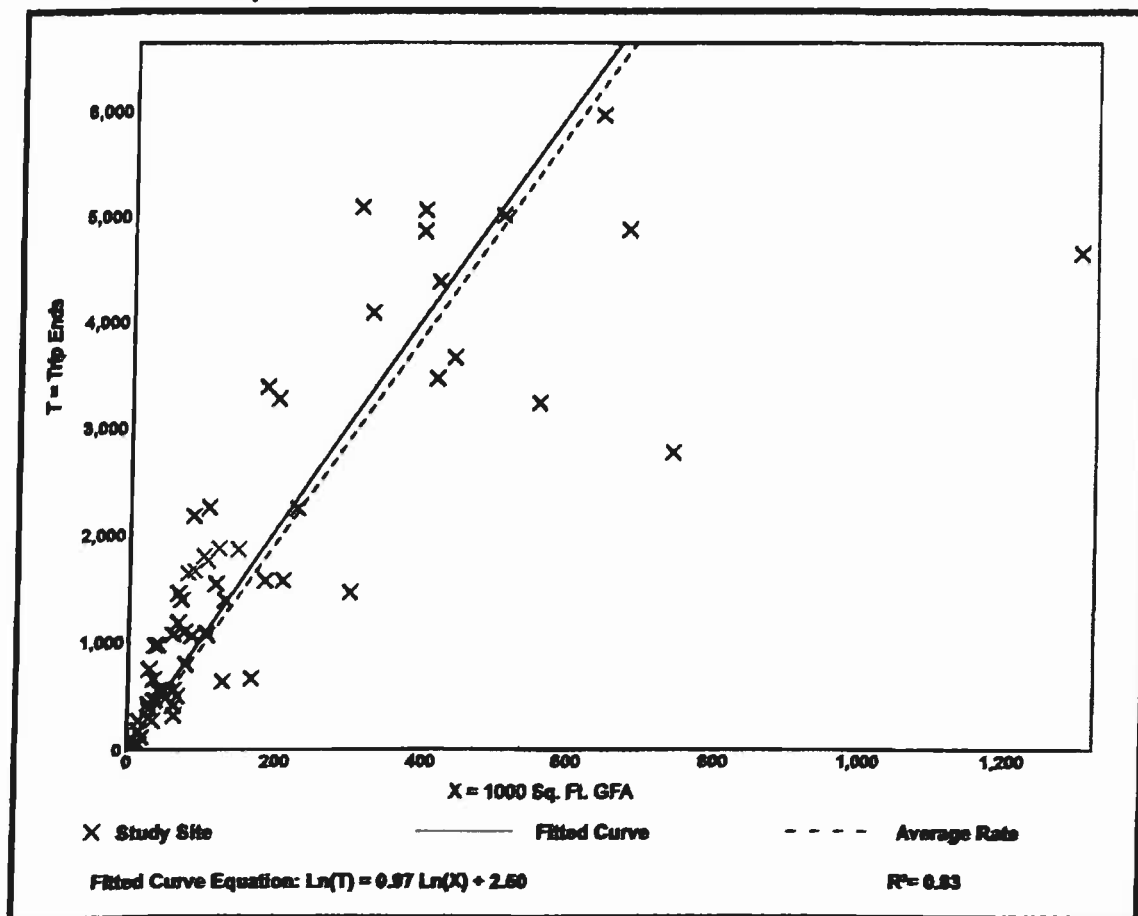
Vehicle Trip Ends vs: 1000 Sq. Ft. GFA
On a: Weekday

Setting/Location: General Urban/Suburban
Number of Studies: 66
1000 Sq. Ft. GFA: 171
Directional Distribution: 50% entering, 50% exiting

Vehicle Trip Generation per 1000 Sq. Ft. GFA

Average Rate	Range of Rates	Standard Deviation
9.74	2.71 - 27.56	5.15

Data Plot and Equation



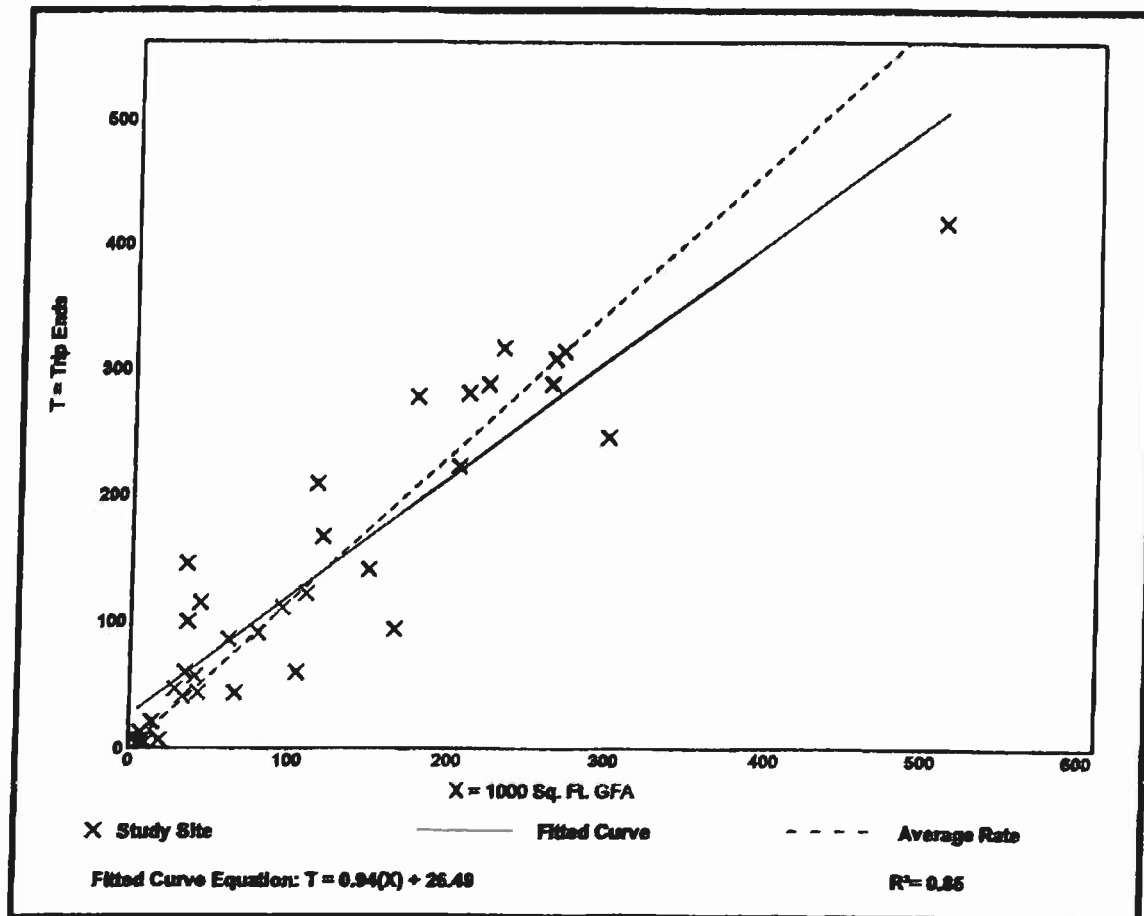
General Office Building (710)

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: 35
1000 Sq. Ft. GFA: 117
Directional Distribution: 86% entering, 14% exiting

Vehicle Trip Generation per 1000 Sq. Ft. GFA

Average Rate	Range of Rates	Standard Deviation
1.18	0.37 - 4.23	0.47

Data Plot and Equation



General Office Building (710)

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: 32
1000 Sq. Ft. GFA: 114
Directional Distribution: 16% entering, 84% exiting

Vehicle Trip Generation per 1000 Sq. Ft. GFA

Average Rate	Range of Rates	Standard Deviation
1.15	0.47 - 3.23	0.42

Data Plot and Equation

