



Home of the Tualatin River National Wildlife Refuge

Case No. CUP 13-01
Fee _____
Receipt # _____
Date _____
TYPE _____

City of Sherwood Application for Land Use Action

Type of Land Use Action Requested: (check all that apply)

- Annexation
- Plan Amendment (Proposed Zone _____)
- Variance (list standard(s) to be varied in description)
- Site Plan (Sq. footage of building and parking area)
- Planned Unit Development
- Conditional Use
- Partition (# of lots _____)
- Subdivision (# of lots _____)
- Other: _____

By submitting this form the Owner, or Owner's authorized agent/ representative, acknowledges and agrees that City of Sherwood employees, and appointed or elected City Officials, have authority to enter the project site at all reasonable times for the purpose of inspecting project site conditions and gathering information related specifically to the project site.

Note: See City of Sherwood current Fee Schedule, which includes the "Publication/Distribution of Notice" fee, at www.sherwoodoregon.gov. Click on Departments/Planning/Fee Schedule.

Owner/Applicant Information:

Applicant: Rothsport Road & Race, Inc. Phone: 503-885-9626
 Applicant Address: 19870 SW 129th Ave, Tual OR Email: Lgamroth@frontier.com
 Owner: Gamroth Properties, LLC Phone: 503-515-5387
 Owner Address: 21380 SW Chapman Rd Email: same as above
 Contact for Additional Information: Lori Gamroth

Property Information:

Street Location: 14015 SW Galbreath DR., Sherwood
 Tax Lot and Map No: 25128BC00500
 Existing Structures/Use: 18,900 sq ft Metal bldg, prev owned by Shields Manu.
 Existing Plan/Zone Designation: General Industrial
 Size of Property(ies) 1.9 acres

Proposed Action:

Purpose and Description of Proposed Action: Applying for a conditional use permit to operate our automotive operations. We manufacture, install, and upgrade parts, including engines and transmissions.

Proposed Use: Conditional Use Permit

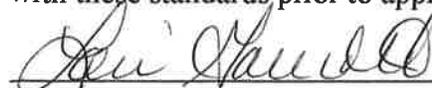
Proposed No. of Phases (one year each): 1

LAND USE APPLICATION FORM

Authorizing Signatures:

I am the owner/authorized agent of the owner empowered to submit this application and affirm that the information submitted with this application is correct to the best of my knowledge.

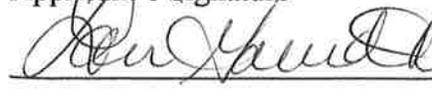
I further acknowledge that I have read the applicable standards for review of the land use action I am requesting and understand that I must demonstrate to the City review authorities compliance with these standards prior to approval of my request.



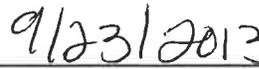
Applicant's Signature



Date



Owner's Signature



Date

The following materials must be submitted with your application or it will not be accepted at the counter. Once taken at the counter, the City has up to 30 days to review the materials submitted to determine if we have everything we need to complete the review.

- 3 * copies of Application Form** completely filled out and signed by the property owner (or person with authority to make decisions on the property).
- Copy of Deed** to verify ownership, easements, etc.
- At least 3 * folded** sets of plans
- At least 3 * sets** of narrative addressing application criteria
- Fee** (along with calculations utilized to determine fee if applicable)
- Neighborhood Meeting Verification** including affidavit, sign-in sheet and meeting summary (required for Type III, IV and V projects)
- Signed checklist** verifying submittal includes specific materials necessary for the application process

* **Note** that the required numbers of copies identified on the checklist are required for completeness; however, upon initial submittal applicants are encouraged to submit only 3 copies for completeness review. Prior to completeness, the required number of copies identified on the checklist and one full electronic copy will be required to be submitted.

Gamroth Properties, LLC

21380 SW Chapman Rd.
Sherwood, OR 97140

T 503-515-5387

F 503-885-8926

gamroth,lori@gmail.com

September 5, 2013

Conditional Use Permit Narrative

Applicant

Rothsport Road & Race, Inc.
19870 SW 129th Ave.
Tualatin, Or 97062
Contact - Jeff Gamroth, president 503-885-9626

Property Information

Address: 14015 SW Galbreath Dr., Sherwood Or
Tax Lot: 2S128BC00500, Lot 5 Sherwood Industrial Park
Owners: Gamroth Properties, LLC
Jeff and Lori Gamroth, managers
21380 SW Chapman Rd.
Sherwood, OR 97140
503-515-5387

Overview:

Rothsport Road & Race, Inc. (Rothsport) is applying for a conditional use permit for the property located at 14015 SW Galbreath Dr., Sherwood, Oregon. Rothsport specializes in designing and manufacturing high performance engine parts as well as in specialized engine and transmission upgrades and repairs. In the proposed location, they will use approximately 5,000 square feet for upgrades and repairs, 3,000 square feet for engine testing and building, 5,000 square feet for storage, 2,000 square feet for office, and the remaining approximately 4,500 square feet for warehouse.

Due to the upgrade and repair portion of the business, they are considered "conditional use" in Sherwood's general industrial zone.

14015 SW Galbreath Dr. is an existing 18,900 square foot building that is already constructed and meets previously approved development and building codes. The building was previously owned and operated by Shields Manufacturing, Inc. No new construction or change of the existing construction will be made for Rothsport to use the building. The property has an existing 40 designated parking spaces.

Gamroth Properties, LLC

Findings of Fact**16.82 Conditional Uses****16.82.020 Permit Approval:****C. Use Criteria, Finding of Fact:**

1. All public facilities and services have been inspected and are sufficient for the proposed conditional use.
2. The proposed use conforms to other standards of the applicable zone, including the manufacturing component, and is compatible with the surrounding land uses in regard to noise generation and public safety. The addition of the proposed use will not cause any detrimental effects to noise, vibration, air quality, odors, heat, glare, or water quality for the site, or the surrounding uses of adjacent land.
3. The proposed use meets the overall needs of the community and achievement of the goals and/or policies of a comprehensive plan of the adoptive City of Sherwood transportation system plan and this code.
4. The addition of the proposed automotive use will not cause any detrimental effect to noise, vibration, air quality, odors, heat, glare, or water quality for the site, or the surrounding uses of adjacent land. Rothsport intends to do all repairs/upgrades and manufacturing within the subject property, keeping noise to a minimum.
5. The proposed use of the site can be accommodating considering size, shape, location, topography and natural features.
6. This proposed use does not pose likely significant adverse impacts to sensitive wildlife species or the natural environment.
7. The proposed conditional use is in the general industrial zone and satisfies the requirements of Section 16.108.080.

D. Additional Conditions, Finding of Fact:

1. The conditional use of this site will not effect water quality due to the fact that all work will be done indoors. In the subject premises there are no floor drains that any spillage could seep into and cause and degradation of water quality.
2. This site complies with previously approved improvements of public facilities including sanitary services, storm drainage, water lines, fire hydrants, street improvements, including curb and sidewalks, and other above and underground utilities are in place and are approved for the proposed conditional use.

3. This conditional use does not adversely impact this requirement because it does not require an increase in required lot sizes, yard dimensions, street width and off street parking and loading facilities.
4. This conditional use does not adversely impact this requirement because it does not require any additional access points or changes to the access points, nor does it effect any changes to the previously approved landscaping or building height.
5. This conditional use will not change the previously submitted file site plans, land dedications or money in lieu of parks or improvements and suitable security guarantee conditional use requirement.
6. This conditional use does not request, nor does it change, the number, size, location, height and lighting or signs.
7. This conditional use does not alter the previously approved requirement for the protection and preservation of existing trees, soils, vegetation, water courses, habitat area and drainage areas.
8. This conditional use does not require any changes to the previously approved design features which minimize potentially harmful environmental impact, such as noise, vibration, air pollution, glare, odor, dust, or water quality.

Preliminary Development Plans: No changes will be made to previously approved structure or property for this use.

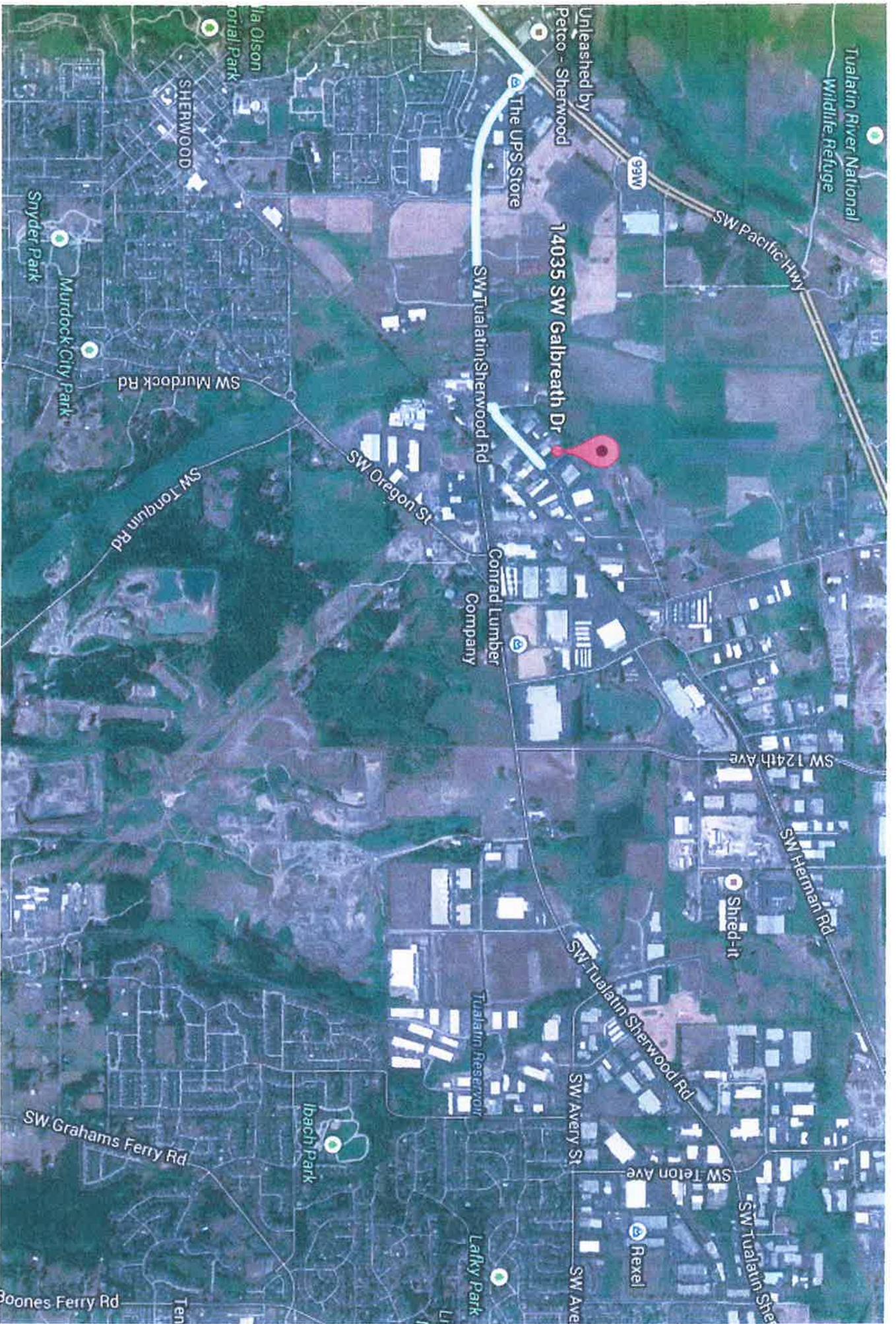
Lighting Plans: No changes will be made to the previously approved exterior of the building.

Architectural Exterior: No changes will be made to the previously approved exterior of the building.

Parking: No additional parking or changes to the previously approved parking area will be necessary.

Questions -

1. For the Neighborhood Meeting, how many days in advance of the meeting to we send out notice?
2. We are not building a new development, do we need to fulfill the **III. Required Plans** information section for a conditional use permit review? Nothing is changing in the existing building structure, parking, lighting, or landscaping.
3. We are not fronting HWY 99, do we need a Trip Analysis? We have already obtained written verification from Washington County that an access report is not required.



Vicinity Map

Subject: 2S128BC00500 TIS not required
From: Naomi Vogel (Naomi_Vogel@co.washington.or.us)
To: KilbyB@SherwoodOregon.gov;
Cc: lgamroth@frontier.com;
Date: Thursday, August 29, 2013 2:22 PM

Hi Brad

The county would not required the above noted project site to submit a TIS or Traffic Study as part of their application. The intersection is already signalized.

Thank you

*Naomi Vogel, Associate Planner
Washington Co. - Dept. of Land Use & Transportation
Operations & Maintenance Division
1400 SW Walnut Street, MS 51
Hillsboro, OR 97123
(503) 846-7639 - Direct
(503) 846-7620 - Fax*

October 16, 2013

Lori Gamroth
Rothsport Road and Race
21380 SW Chapman Road
Sherwood, OR 97140



**LANCASTER
ENGINEERING**

321 SW 4th Ave., Suite 400
Portland, OR 97204
phone: 503.248.0313
fax: 503.248.9251
lancasterengineering.com

RE: Rothsport Road and Race – Trip CAP Analysis

Dear Lori:

The City of Sherwood's Zoning and Development Code 6.306 requires developments impacting Highway 99W to obtain a Trip Allocation Certificate before development. This letter discusses the trip generation for the proposed Rothsport Road and Race facility located at 14015 SW Galbreath Drive in Sherwood. It also serves as a request for the required Trip Allocation Certificate.

The 1.89-acre site contains an existing building with an area of 23,000 square feet that was previously used for manufacturing. The proposed business manufactures engine, chassis and transmission parts for Porsche vehicles in addition to providing high-performance modifications for racing and street vehicles.

To determine the number of trips that were generated by the prior site use and will be generated by the proposed use, trip rates from land-use codes 140, *Manufacturing*, and 942 *Automobile Care Center* from *TRIP GENERATION*, Ninth Edition, were used. The trip rates are based on the square footage and were calculated for a 23,000-square-foot building.

Under existing conditions, the full 23,000 square-foot building is used for manufacturing. Based on the trip analysis, the site currently generates 17 trips during the evening peak hour, with 6 entering and 11 exiting the site.

The proposed Rothsport Road and Race facility does not precisely correlate with a single ITE land use category. Rothsport sells high-performance parts primarily via the internet, so most customers do not visit the site. Rothsport accepts customer vehicles for restoration and upgrades, however the typical turn-around time for these vehicles is six weeks to nine months, which is significantly longer than is typical for auto repair and service functions. Accordingly, it is anticipated that traffic volumes from the proposed site use will be substantially lower than for typical auto-care related land uses.

In order to provide a reasonable projection of site traffic volumes, the uses within the building were categorized as a mix of Warehousing, Auto Care Center and Manufacturing land uses. Based on detailed information provided by Rothsport, it is anticipated that 11,500



square feet of space will be allocated to Auto Care Center uses, 10,500 square feet will be allocated to warehousing uses, and 2,000 square feet will be allocated to manufacturing uses, including a lathe and performance testing equipment. This mix of uses was analyzed to determine the resulting traffic volumes. It is acknowledged that the Auto Care Center portion of the proposed development will likely generate far fewer trips than the average for this land use category, however for a conservative analysis the standard trip generation rates were used for this land use.

The closest category is "Automobile Care Center", however this land use description is typically associated with general repair and maintenance services rather than high performance tuning. Additionally, the Rothsport Road and Race facility does on-site manufacturing of high-performance parts, which aligns with the description of the "Manufacturing" land use.

A summary of the existing and proposed trip generation is contained in the table below. Detailed trip generation worksheets are included in the attached technical appendix.

TRIP GENERATION SUMMARY			
Rothsport Road and Race			
	<u>Entering</u> <u>Trips</u>	<u>Exiting</u> <u>Trips</u>	<u>Total</u> <u>Trips</u>
<i>Existing Manufacturing (23,000 sq ft)</i>			
PM Peak Hour	6	11	17
<i>Proposed Auto Care Center (11,500 sq ft)</i>			
PM Peak Hour	17	19	36
<i>Proposed Warehousing (10,500 sq ft)</i>			
PM Peak Hour	1	2	3
<i>Proposed manufacturing (2,000 sq ft)</i>			
PM Peak Hour	0	1	1
<i>Net Increase in Site Trips</i>			
PM Peak Hour	12	11	23



Lori Gamroth
October 16, 2013
Page 3 of 3

Based on the analysis, the subject property is projected to generate a total of 40 trips during the evening peak hour, which equates to 21.2 trips per net acre. A CAP Trip Analysis Worksheet is attached.

Notably, even if the entire 23,000 square foot building was used for an Automobile Care Center and the development generated trips at a rate typical for this land use category, the resulting trip generation would remain within the 43 trips per net acre limit established by the City of Sherwood.

Based on the analysis, a net increase of 23 site trips is projected for the proposed development. Of these trips, it is expected that 50 percent will travel to and from the east via Tualatin-Sherwood Road and Herman Road, 25 percent will travel to and from the north on Highway 99W, 15 percent will travel to and from the south on Highway 99W, and 10 percent will travel to and from the northwest on Roy Rogers Road. Using this distribution it is anticipated that the intersection of SW Galbreath Drive at SW Cipole Road will experience an increase of 14 site trips during the evening peak hour. The intersections of SW Galbreath Drive at SW Gerda Lane, SW Gerda Lane at SW Tualatin Sherwood Road, and SW Cipole Road at SW Herman Road are projected to experience an increase of 8 to 9 site trips during the evening peak hour. No other intersections are projected to experience an increase of 10 or more site trips during the evening peak hour.

We trust the information and analysis contained here will be sufficient to allow the issuance of a Trip Allocation Certificate. If you have any questions, please don't hesitate to call us.

Sincerely,



Michael Ard, PE
Senior Transportation Engineer

CAP TRIP ANALYSIS WORKSHEET

Trip Analysis conducted by:	Michael Ard, PE
Project Description:	Rothsport Road and Race
Land Use Application File No:	
Project Name:	Rothsport Road and Race

The CAP Trip Analysis Worksheet is meant to summarize the detailed information contained in the Traffic Study prepared by a professional engineer registered in the State of Oregon with expertise in traffic or transportation engineering and attached with the CAP Trip Analysis.

Net Trips means the number of trips generated by a regulated activity during the p.m. peak hour. Net trips equal new trips, diverted trips, and trips from existing activities on a site that will remain. Net trips do not include: pass-by trips, internal trips, trips from existing facilities that will be removed, and trips reduced due to implementation of transportation demand strategies.

The following types of projects and activities are specifically excluded from the provisions of the CAP: (1) churches; (2) elementary, middle, and high schools; (3) residential; and (4) changes in use that do not increase the number of trips generated by the current use.

1. Net Trips

- a 17 Existing Site Net Trips
- b 40 Proposed Development Net Trips (proposed development includes existing sites that will remain)
- c 0 Future (Full-Build-Out) Development Net Trips
- d 40 Proposed and Future Development Net Trips (1b+1c)*

2. Acreage

Tax Lot Number	Total Acreage	Net Acreage (Total Minus 100-Year Flood plain)	Proposed Development Net Acreage	Future Development Net Acreage (2b-2c)
00500	1.89	1.89	1.89	0
TOTAL	a 1.89	b 1.89	c 1.89	d 0

3. Net Trips Per Acre

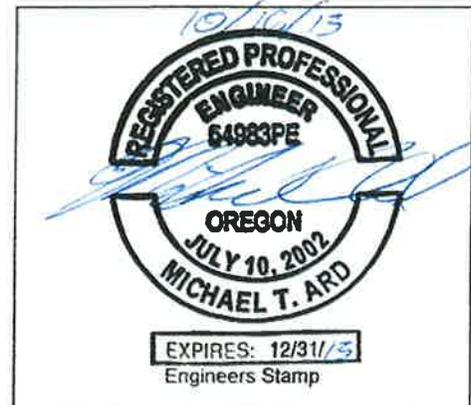
- a 9.0 Existing Net Trips per Net Acre (1a/2b)
- b 21.2 Proposed Development Net Trips per Net Acre (1b/2c)
- c 21.2 Proposed & Future Development Net Trips per Net Acre (1d/2b)
- d 43 Net Trips per Net Acre Allowed (**City of Sherwood Trip Limit**)

4. Proposed Mitigation:

*If proposed and future net trips per net acre (3c) are less than the existing net trips per net acre (3a) then the application is EXEMPT from CAP Ordinance requirements.

If any changes are proposed for the regulated activity (i.e. type of activity, acreage, etc.) the trip analysis worksheet shall be resubmitted with the original for comparative purposes and approval.

Comments:

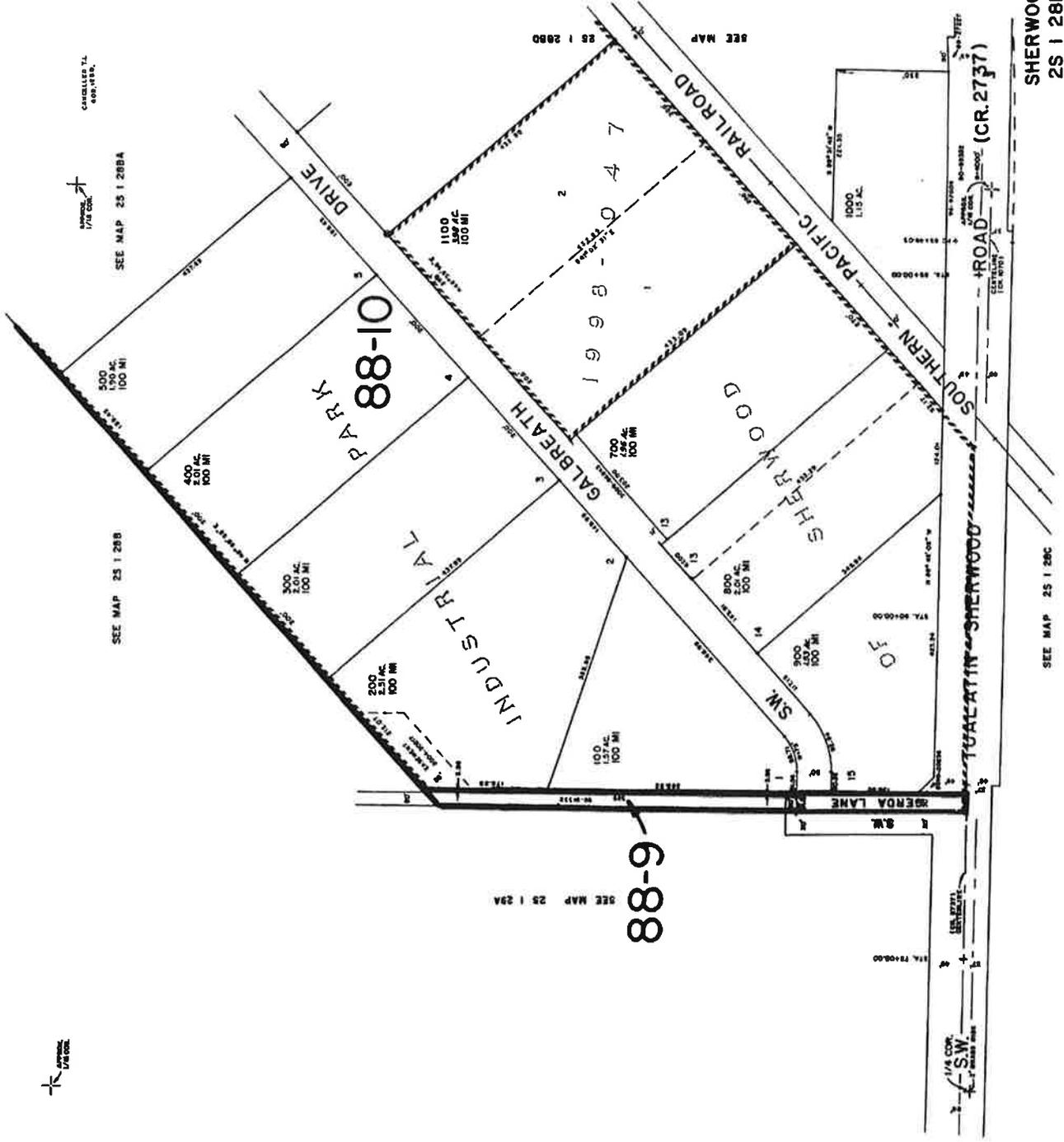


FOR ASSESSMENT PURPOSES ONLY. DO NOT RELY ON FOR ANY OTHER USE.

SW 1/4 NW 1/4 SECTION 28 T 2 S R 1 W W.M.
WASHINGTON COUNTY

SCALE 1"=100'

2S 1 28BC
SHERWOOD



SHERWOOD
2S 1 28BC

2e

TRIP GENERATION CALCULATIONS

Land Use: Manufacturing
Land Use Code: 140
Variable: 1,000 Square Feet
Variable Quantity: 23

AM PEAK HOUR

Trip Rate: 0.73

	Enter	Exit	Total
Directional Distribution	78%	22%	
Trip Ends	13	4	17

PM PEAK HOUR

Trip Rate: 0.73

	Enter	Exit	Total
Directional Distribution	36%	64%	
Trip Ends	6	11	17

WEEKDAY

Trip Rate: 3.82

	Enter	Exit	Total
Directional Distribution	50%	50%	
Trip Ends	44	44	88

SATURDAY

Trip Rate: 1.49

	Enter	Exit	Total
Directional Distribution	50%	50%	
Trip Ends	17	17	34

TRIP GENERATION CALCULATIONS

Land Use: Automobile Care Center
Land Use Code: 942
Variable: 1000 Sq Feet Gross Leasable Area
Variable Quantity: 11.5

AM PEAK HOUR

Trip Rate: 2.25

	Enter	Exit	Total
Directional Distribution	66%	34%	
Trip Ends	17	9	26

PM PEAK HOUR

Trip Rate: 3.11

	Enter	Exit	Total
Directional Distribution	48%	52%	
Trip Ends	17	19	36

SATURDAY

Trip Rate: 23.72

	Enter	Exit	Total
Directional Distribution	50%	50%	
Trip Ends	136	136	272

SUNDAY

Trip Rate: 11.88

	Enter	Exit	Total
Directional Distribution	50%	50%	
Trip Ends	68	68	136

1e

TRIP GENERATION CALCULATIONS

Land Use: Warehousing
Land Use Code: 150
Variable: 1,000 Square Feet
Variable Quantity: 10.5

AM PEAK HOUR

Trip Rate: 0.30

	Enter	Exit	Total
Directional Distribution	79%	21%	
Trip Ends	2	1	3

PM PEAK HOUR

Trip Rate: 0.32

	Enter	Exit	Total
Directional Distribution	25%	75%	
Trip Ends	1	2	3

WEEKDAY

Trip Rate: 3.56

	Enter	Exit	Total
Directional Distribution	50%	50%	
Trip Ends	19	19	38

SATURDAY

Trip Rate: 1.23

	Enter	Exit	Total
Directional Distribution	50%	50%	
Trip Ends	6	6	12

Source: TRIP GENERATION, Ninth Edition

1e

TRIP GENERATION CALCULATIONS

Land Use: Manufacturing
Land Use Code: 140
Variable: 1,000 Square Feet
Variable Quantity: 2

AM PEAK HOUR

Trip Rate: 0.73

	Enter	Exit	Total
Directional Distribution	78%	22%	
Trip Ends	1	0	1

PM PEAK HOUR

Trip Rate: 0.73

	Enter	Exit	Total
Directional Distribution	36%	64%	
Trip Ends	0	1	1

WEEKDAY

Trip Rate: 3.82

	Enter	Exit	Total
Directional Distribution	50%	50%	
Trip Ends	4	4	8

SATURDAY

Trip Rate: 1.49

	Enter	Exit	Total
Directional Distribution	50%	50%	
Trip Ends	1	1	2

TRIP GENERATION CALCULATIONS

Land Use: Automobile Care Center
Land Use Code: 942
Variable: 1000 Sq Feet Gross Leasable Area
Variable Quantity: 23

AM PEAK HOUR

Trip Rate: 2.25

	Enter	Exit	Total
Directional Distribution	66%	34%	
Trip Ends	34	18	52

PM PEAK HOUR

Trip Equation: $T = 2.41(X) + 11.79$

	Enter	Exit	Total
Directional Distribution	48%	52%	
Trip Ends	32	35	67

SATURDAY

Trip Rate: 23.72

	Enter	Exit	Total
Directional Distribution	50%	50%	
Trip Ends	273	273	546

SUNDAY

Trip Rate: 11.88

	Enter	Exit	Total
Directional Distribution	50%	50%	
Trip Ends	137	137	274

Source: TRIP GENERATION, Eighth Edition

Land Use: 140

Manufacturing

Description

Manufacturing facilities are areas where the primary activity is the conversion of raw materials or parts into finished products. Size and type of activity may vary substantially from one facility to another. In addition to the actual production of goods, manufacturing facilities generally also have office, warehouse, research and associated functions. General light industrial (Land Use 110), general heavy industrial (Land Use 120), industrial park (Land Use 130) and high-cube warehouse/distribution center (Land Use 152) are related uses.

Additional Data

Average weekday transit trip ends:

- 0.09 per employee
- 0.08 per 1,000 square feet gross floor area
- 1.25 per acre

Vehicle occupancy ranged from 1.2 to 1.3 persons per automobile on an average weekday.

The peak hour of the generator typically coincided with the peak hour of the adjacent street traffic.

Facilities with employees on shift work may peak at other hours.

The sites were surveyed in the late 1960s, the early 1970s, the mid-1980s, the 1990s and the 2000s throughout the United States.

Source Numbers

3, 7, 10, 15, 17, 74, 85, 88, 177, 184, 241, 357, 384, 418, 443, 583, 598, 611, 728

Manufacturing (140)

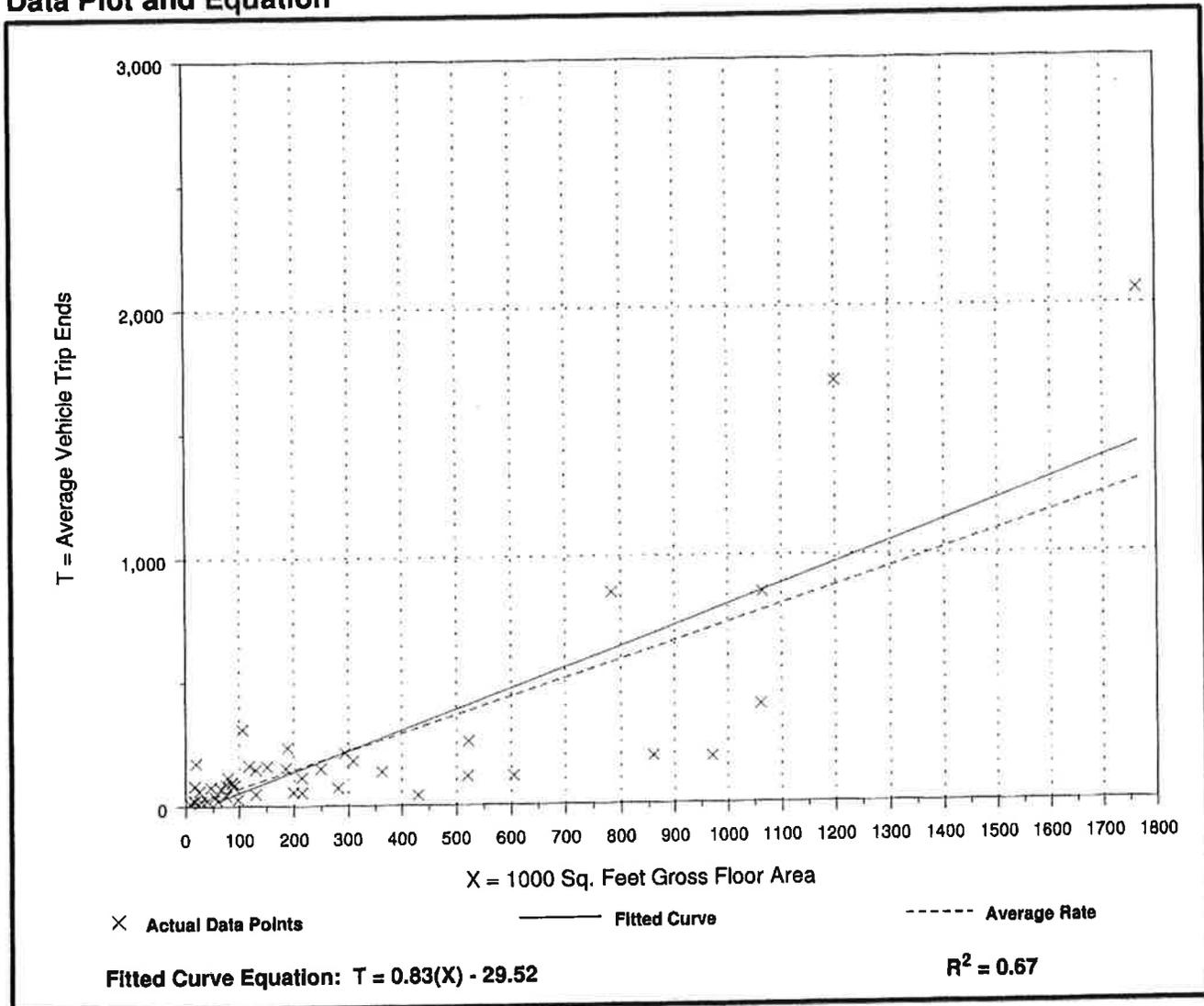
Average Vehicle Trip Ends vs: 1000 Sq. Feet Gross Floor Area
On a: Weekday,
Peak Hour of Adjacent Street Traffic,
One Hour Between 7 and 9 a.m.

Number of Studies: 51
 Average 1000 Sq. Feet GFA: 293
 Directional Distribution: 78% entering, 22% exiting

Trip Generation per 1000 Sq. Feet Gross Floor Area

Average Rate	Range of Rates	Standard Deviation
0.73	0.10 - 8.75	1.04

Data Plot and Equation



Manufacturing (140)

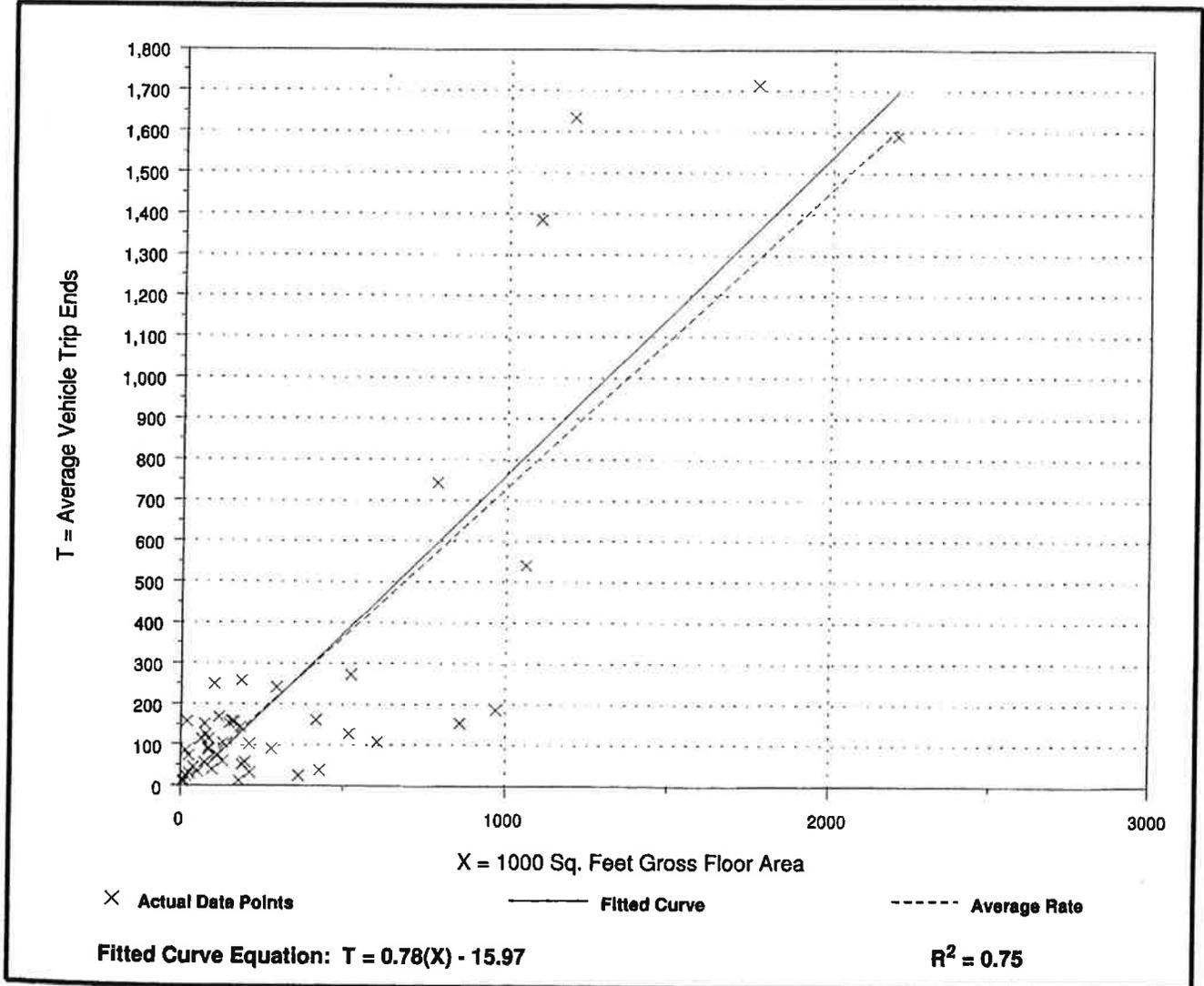
Average Vehicle Trip Ends vs: 1000 Sq. Feet Gross Floor Area
On a: Weekday,
Peak Hour of Adjacent Street Traffic,
One Hour Between 4 and 6 p.m.

Number of Studies: 56
 Average 1000 Sq. Feet GFA: 318
 Directional Distribution: 36% entering, 64% exiting

Trip Generation per 1000 Sq. Feet Gross Floor Area

Average Rate	Range of Rates	Standard Deviation
0.73	0.07 - 7.85	1.01

Data Plot and Equation



Land Use: 942 Automobile Care Center

Description

An automobile care center houses numerous businesses that provide automobile-related services, such as repair and servicing, stereo installation and seat cover upholstery. Quick lubrication vehicle shop (Land Use 941) and automobile parts and service center (Land Use 943) are related uses.

Additional Data

The P.M. peak hour of the generator typically coincided with the peak hour of the adjacent street traffic.

The sites were surveyed in 1988, 1989 and 1994 in California, Maryland and Florida.

Source Numbers

267, 273, 439, 715

Automobile Care Center (942)

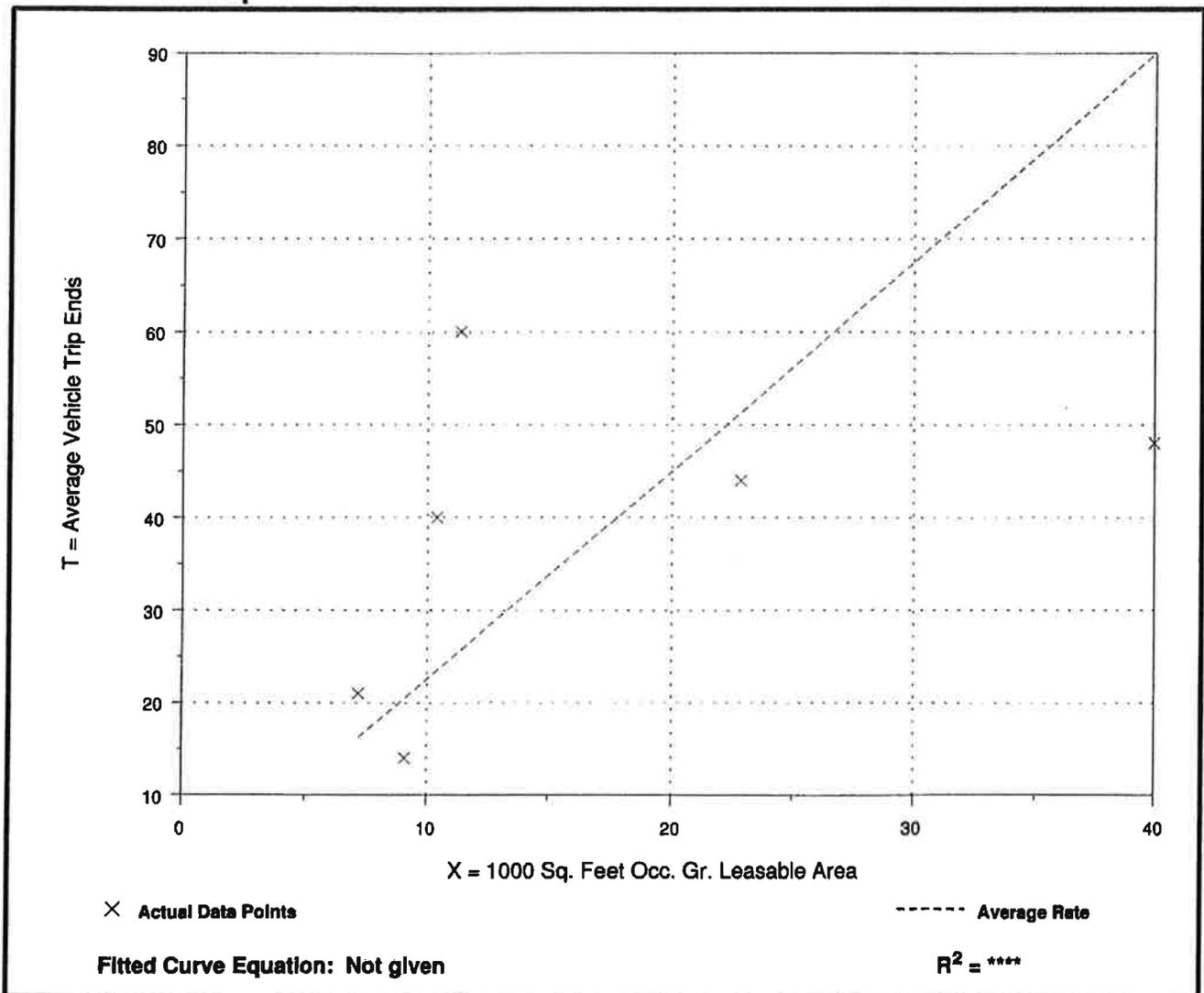
Average Vehicle Trip Ends vs: 1000 Sq. Feet Occ. Gr. Leasable Area
On a: Weekday,
Peak Hour of Adjacent Street Traffic,
One Hour Between 7 and 9 a.m.

Number of Studies: 6
 Average 1000 Sq. Feet OGLA: 17
 Directional Distribution: 66% entering, 34% exiting

Trip Generation per 1000 Sq. Feet Occ. Gr. Leasable Area

Average Rate	Range of Rates	Standard Deviation
2.25	1.20 - 5.29	1.99

Data Plot and Equation



Automobile Care Center (942)

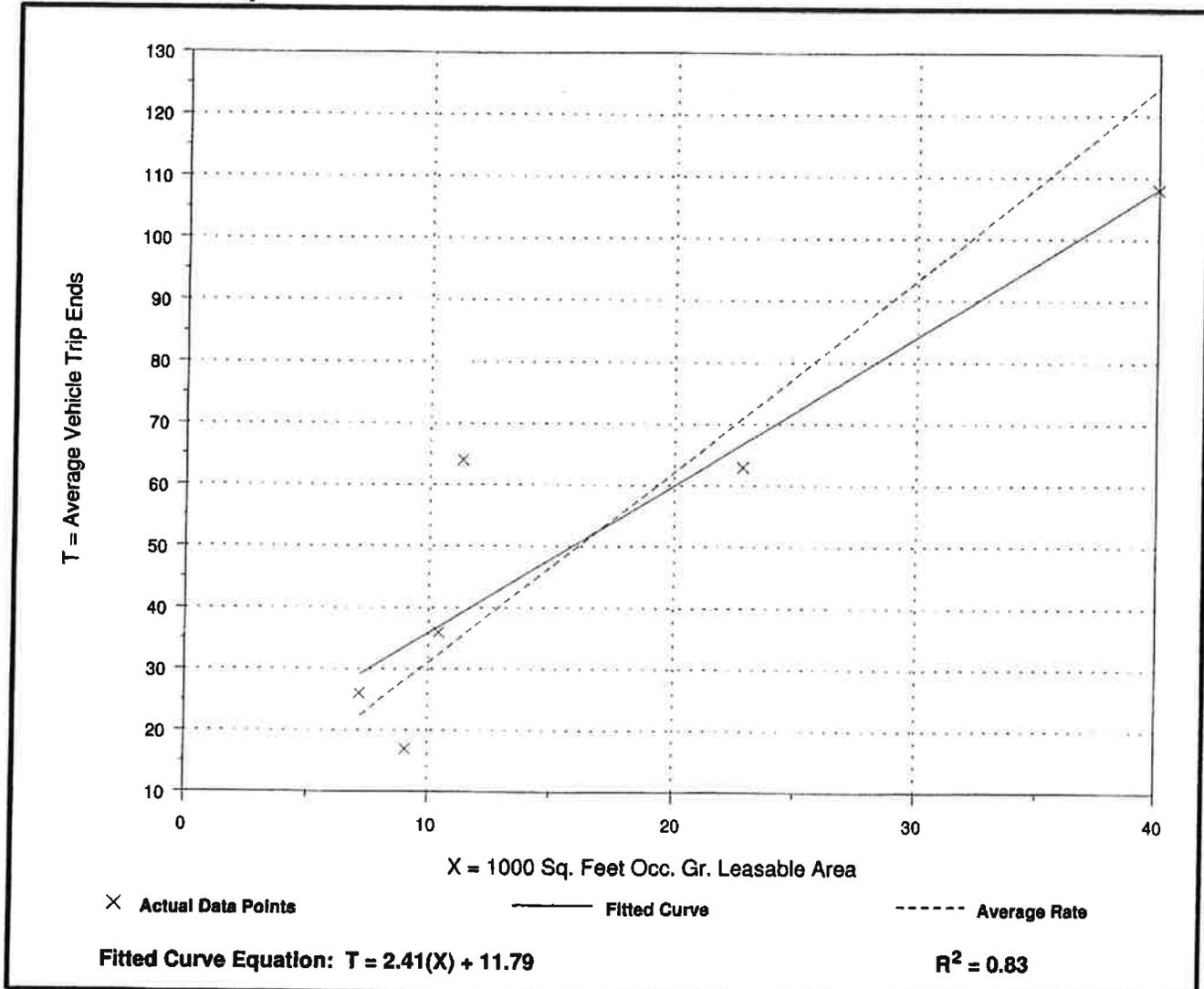
Average Vehicle Trip Ends vs: 1000 Sq. Feet Occ. Gr. Leasable Area
On a: Weekday,
Peak Hour of Adjacent Street Traffic,
One Hour Between 4 and 6 p.m.

Number of Studies: 6
 Average 1000 Sq. Feet OGLA: 17
 Directional Distribution: 48% entering, 52% exiting

Trip Generation per 1000 Sq. Feet Occ. Gr. Leasable Area

Average Rate	Range of Rates	Standard Deviation
3.11	1.87 - 5.64	1.98

Data Plot and Equation



Land Use: 150 Warehousing

Description

Warehouses are primarily devoted to the storage of materials, but they may also include office and maintenance areas. High-cube warehouse/distribution center (Land Use 152) and business park (Land Use 770) are related uses.

Additional Data

Truck trips accounted for 20 percent of the weekday traffic at one of the sites surveyed.

No vehicle occupancy data were available specifically for warehousing, but the average was approximately 1.3 persons per automobile for all industrial uses.

The peak hour of the generator typically coincided with the peak hour of the adjacent street traffic.

Facilities with employees on shift work may peak at other hours.

Two sources indicated that the warehousing sites comprised multiple buildings.

The sites were surveyed from between the late 1960s and the 2000s throughout the United States and Canada.

Source Numbers

6, 7, 12, 13, 15, 17, 74, 184, 192, 390, 406, 411, 436, 443, 571, 579, 583, 596, 598, 611

Warehousing (150)

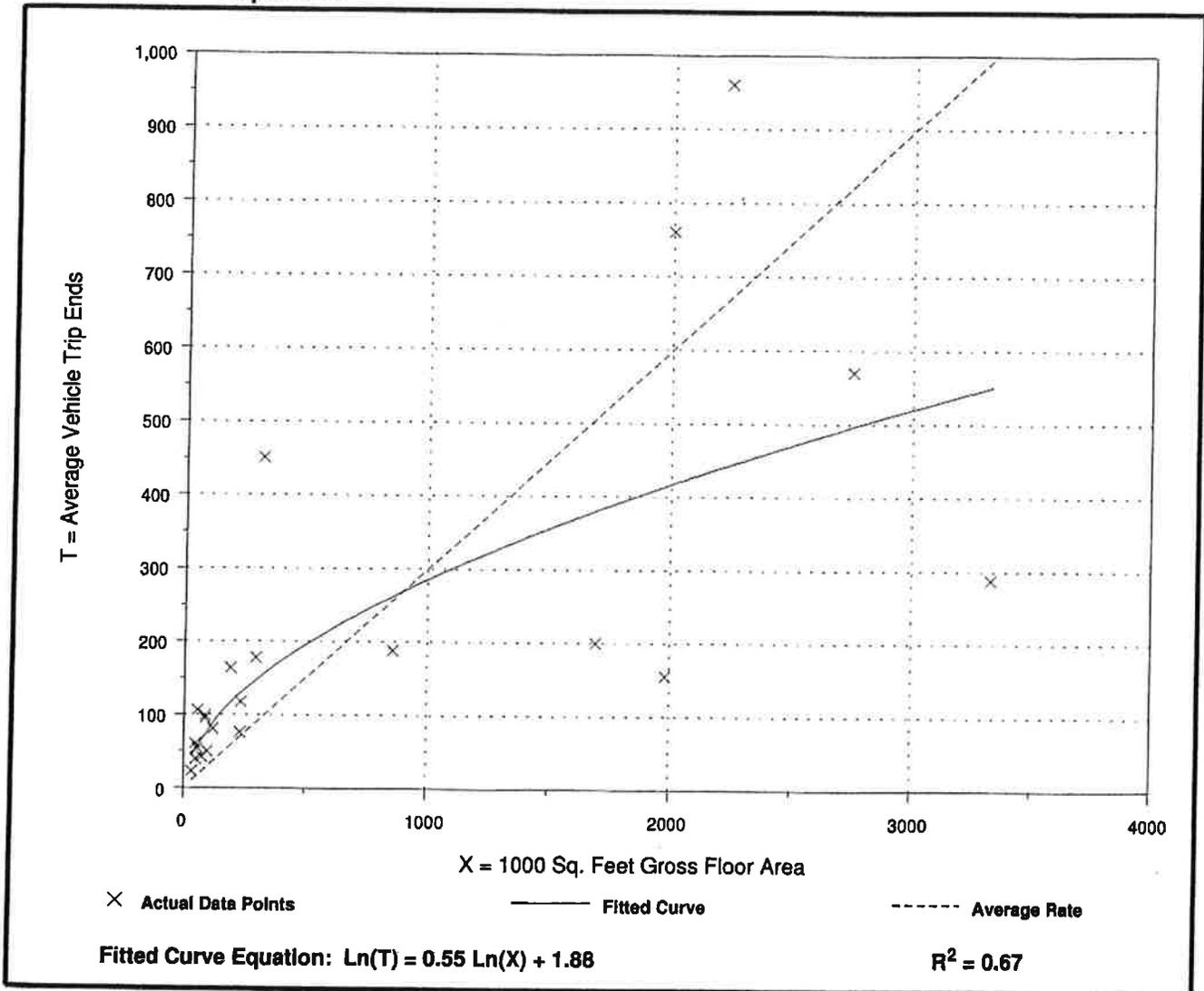
Average Vehicle Trip Ends vs: 1000 Sq. Feet Gross Floor Area
On a: Weekday,
Peak Hour of Adjacent Street Traffic,
One Hour Between 7 and 9 a.m.

Number of Studies: 23
 Average 1000 Sq. Feet GFA: 745
 Directional Distribution: 79% entering, 21% exiting

Trip Generation per 1000 Sq. Feet Gross Floor Area

Average Rate	Range of Rates	Standard Deviation
0.30	0.08 - 1.93	0.63

Data Plot and Equation



Warehousing (150)

Average Vehicle Trip Ends vs: 1000 Sq. Feet Gross Floor Area
On a: Weekday,
Peak Hour of Adjacent Street Traffic,
One Hour Between 4 and 6 p.m.

Number of Studies: 31
 Average 1000 Sq. Feet GFA: 572
 Directional Distribution: 25% entering, 75% exiting

Trip Generation per 1000 Sq. Feet Gross Floor Area

Average Rate	Range of Rates	Standard Deviation
0.32	0.09 - 1.66	0.67

Data Plot and Equation

