



JMD ENGINEERING, INC.

## **TRAFFIC IMPACT ANALYSIS**

**LENNY'S CARWASH  
2210 N FEDERAL HIGHWAY  
DELRAY BEACH, FLORIDA**

**PCN: 12-43-46-04-35-000-0010**

**OCTOBER 22, 2025**  
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Certificate of Authorization  
Number 00009514

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John M. Donaldson, P.E.  
Florida Registration Number 40568

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## ***INTRODUCTION***

This is a traffic impact analysis for the proposed Lenny's Carwash with one tunnel at 2210 N. Federal Highway in Delray Beach, Florida. The Parcel Control Number (PCN) for the site is 12-43-46-04-35-000-0010. This proposed plan will replace the existing 5 bay carwash. The location of the site is illustrated in Figure 1.

JMD Engineering, Inc. (JMD) was retained to prepare a traffic impact analysis for the project. This document presents the methodology used and the findings of the traffic impact analysis. The analysis was conducted in accordance with the requirements of the Countywide Traffic Performance Standards Ordinance (TPSO) of Palm Beach County. The analysis used current data available from Palm Beach County. The project is expected to be built by December 2029.

## ***INVENTORY AND PLANNING DATA***

The data used in this analysis were obtained from Palm Beach County and collected in the field. The data included:

- 2024 peak hour traffic volumes
- Historic traffic count data
- Approved un-built projects from TPS database
- Roadway geometrics

Steve Siebert Architecture and JC Planning Solutions provided project development information. According to the Palm Beach County Appraisers office, the existing site has been in operation within the last five years. Therefore, in accordance with the provisions of the TPSO, the existing site use was considered vested for concurrency purposes.

# ***PROJECT TRAFFIC***

## ***Traffic Generation***

The daily and peak hour traffic generation for the development was based on trip generation rates published and accepted by Palm Beach County. As ITE has limited trip generation information on manual and automatic car washes and the PBC trip generation rates for car washes are not current, a hybrid trip generation was utilized based on discussions with and approved by the Palm Beach County Traffic Division. Daily and PM rates for ITE land use 947 (based on a total of 5 bays) with the AM peak rate prorated using the PBC rate. For the proposed one tunnel automatic carwash, ITE 948 was used and the prorated PBC rate was used to determine Daily and AM peak hour traffic. Per county staff, a 28% pass-by was assumed (same as tire store).

Table 1 presents the trip generation potential from the proposed development of the site. Trip generation rates as outlined above were used. The proposed development will generate a “net” increase of 290 daily trips, 31 additional AM peak hour trips, and 36 additional PM peak hour trips that must be analyzed for TPSO purposes.

There is a net increase of 402 daily driveway trips, 44 AM peak hour driveway trips and 50 PM peak hour driveway trips over the current use.

## ***Traffic Distribution***

Traffic distribution was determined from a review of the roadway network, previous TPS approved projects listed on the TPS database map, and travel time characteristics along with the various attractions. The distribution according to the cardinal directions is:

NORTH – 50%

SOUTH – 50%

## ***Traffic Assignment***

The net trips for the project were assigned to the surrounding roadway network in terms of a.m. and p.m. peak hour external trips. Figure 2 illustrates the project assignment. Based on the net traffic generation, it was determined that there is no significant traffic and therefore no Test 1 or Test 2 analysis is required as shown in Table 2 and Table 3.

Please note that access to N. Federal Highway is via NW 22<sup>nd</sup> Lane and NW 22<sup>nd</sup> Lane is limited to right in/right out/left in only. 80% assignment is shown to N Federal Highway with 40% NB after U-turn and 40% continuing SB.

## ***ASSURED AND PROGRAMMED CONSTRUCTION***

A review of the Five-Year Plans of Palm Beach County and FDOT, as well as those improvements committed by the developers of projects in the area was made. No significant roadway construction is funded for the area.

# ***PBC PERFORMANCE STANDARDS TEST***

## **PART ONE – INTERSECTION EVALUATION**

### ***Intersections on Project Access Links***

As the project has insignificant impact on all links within 1/2 mile, no intersection analysis is required.

## ***PART TWO - LINK EVALUATION***

### ***Test 1***

As no links are significantly impacted; no additional analysis is required.

### ***Test 2 - Five Year Analysis***

As no links are significantly impacted; no additional analysis is required.

## ***SITE CIRCULATION AND TURN LANE REQUIREMENTS***

The site currently has three driveways. The N. Federal Highway driveway is being closed. Dixie Highway driveway will be ingress only with NB right in/SB left in only. Similarly, the NW 22<sup>nd</sup> Lane driveway will be egress only with SB right out/SB left out only movements. A site plan is included in Appendix B to help demonstrate the access points for the subject site for concurrency purposes. The proposed project driveway traffic is shown in Figure 3.

### ***Driveway Classification***

According to the Palm Beach County “Guide to Parking Lot and Street Access Design Criteria and Standards”, it is necessary to classify project entrances as minor, intermediate, or major according to the following criteria:

1. Minor - Provides for a maximum average daily traffic of 500 vehicles.
2. Intermediate - Provides services for a maximum average daily traffic from 501 to 2,000 vehicles.
3. Major - Provides service for a maximum average daily traffic greater than 2,000 vehicles.

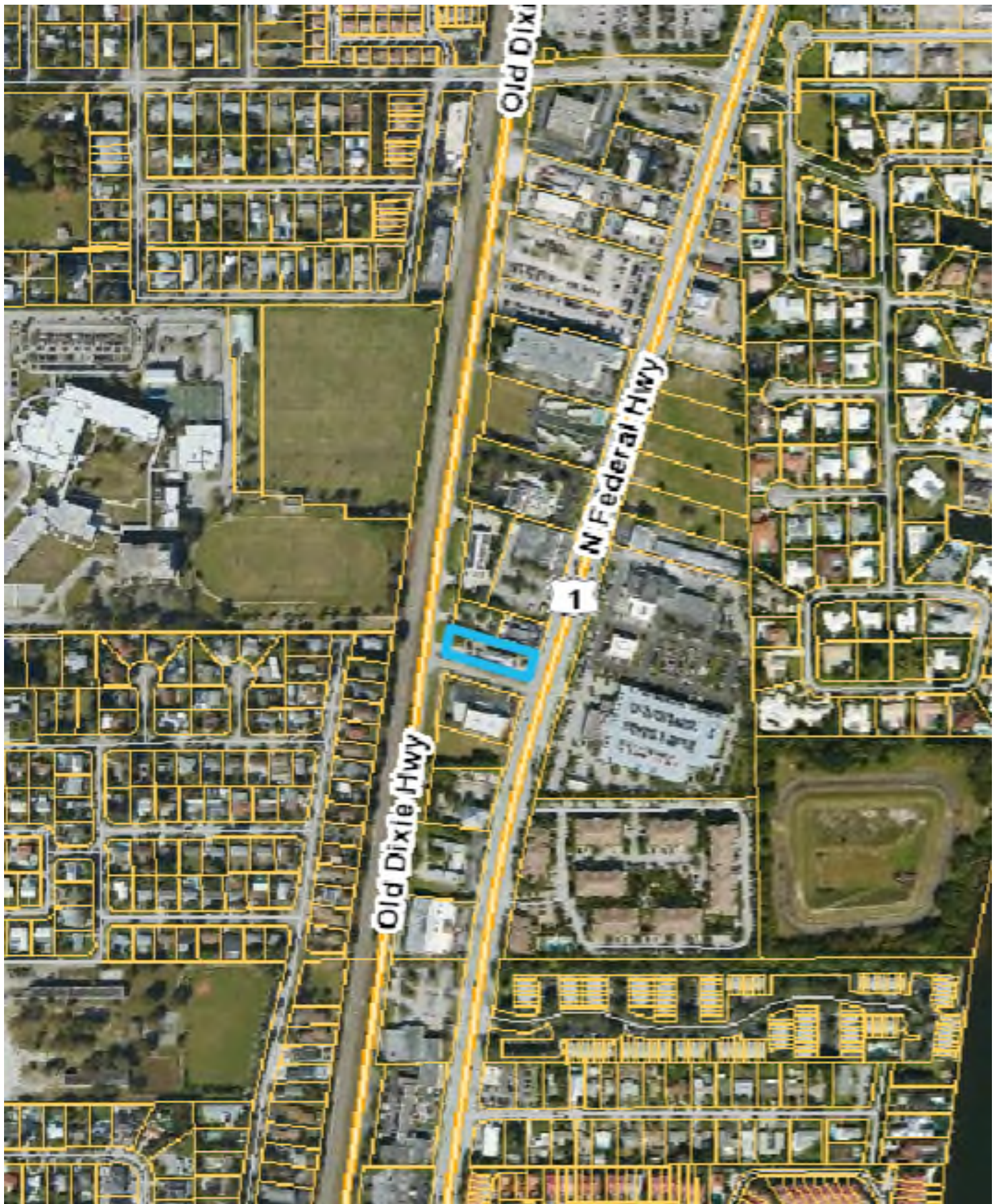
Using these criteria and evaluating project traffic from the entire site, both driveways are classified as a minor driveway.

### ***Turn Lane Requirements***

Palm Beach County code requires a right-turn lane when inbound peak hour right-turning traffic is 75 vehicles or more and a left-turn lane when inbound peak hour left-turning traffic is greater than 30 vehicles. Figure 3 illustrates the proposed project a.m. and p.m. peak hour total volumes assigned to the project's access location and show that no additional turn lanes are required. Please note a northbound left turn lane currently exists on N. Federal Highway and NW 22<sup>nd</sup> Lane.

## ***CONCLUSION***

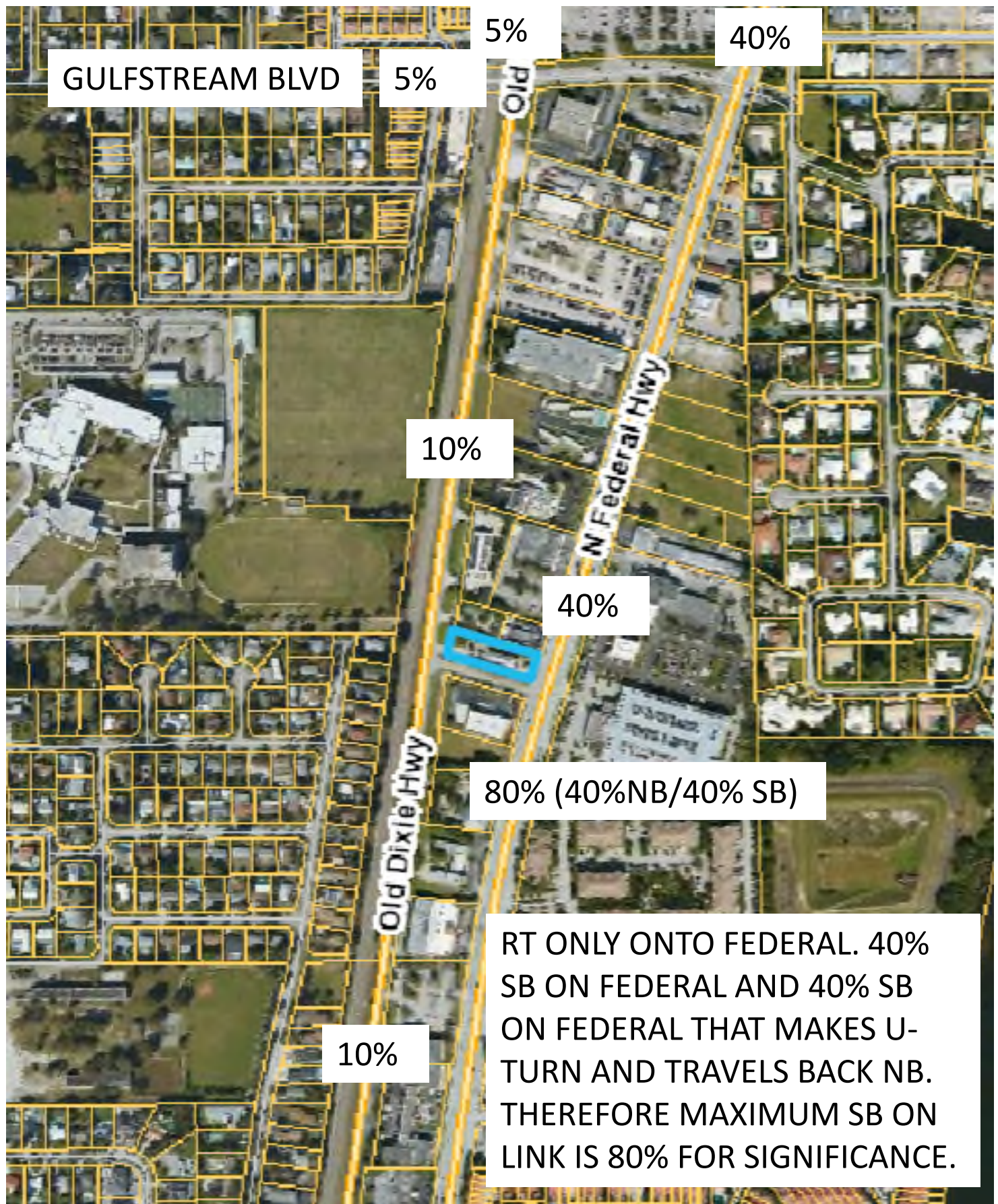
The applicant is proposing a one tunnel automatic car wash at 2210 N. Federal Highway in Delray Beach, Florida to replace the existing 5 bay carwash. Based on the traffic impact analysis prepared for the proposed project development, the proposed development meets the requirements of the Countywide Traffic Performance Standards of Palm Beach County.



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## PROJECT LOCATION MAP

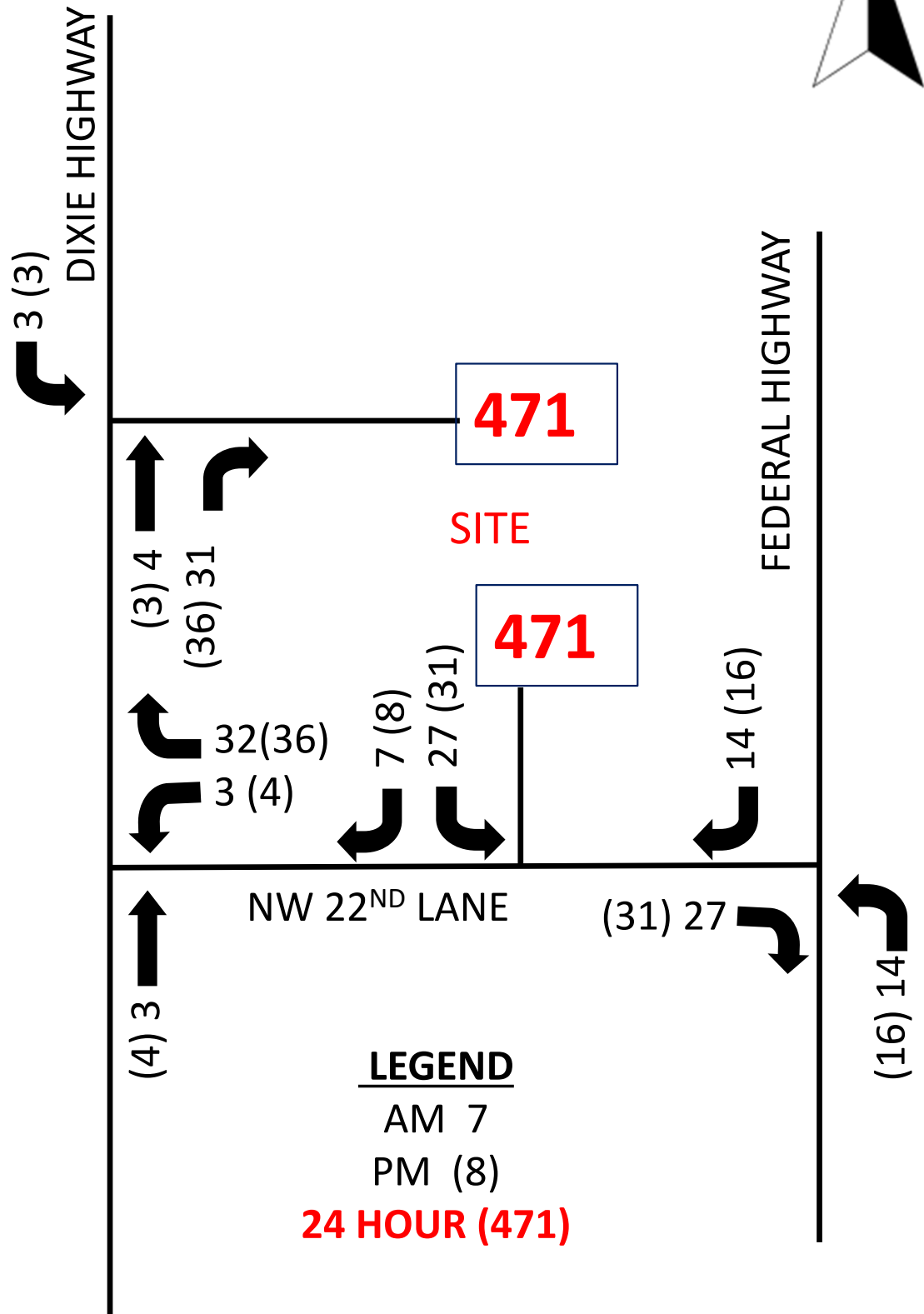
FIGURE 1  
2210 N FEDERAL  
LENNY'S CARWASH  
DELRAY BEACH, FL



ENGINEERING, INC.

## PROJECT ASSIGNMENT MAP

FIGURE 2  
2210 N FEDERAL  
LENNY'S CARWASH  
DELRAY BEACH, FL



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## PROJECT DRIVEWAY VOLUMES

FIGURE 3  
2210 N FEDERAL  
LENNY'S CARWASH  
DELRAY BEACH, FL

**TABLE 1  
TRIP GENERATION  
2210 N FEDERAL LENNY'S CARWASH**

| Land Use                       | Intensity       | Daily Trips | AM Peak Hour |    |     | PM Peak Hour |    |     |
|--------------------------------|-----------------|-------------|--------------|----|-----|--------------|----|-----|
|                                |                 |             | Total        | In | Out | Total        | In | Out |
| <b>Approved Site Traffic</b>   |                 |             |              |    |     |              |    |     |
| <u>Site Generation</u>         | 5 bays<br>28%   |             |              |    |     |              |    |     |
| Manual Car Wash                |                 | 540         | 24           | 12 | 12  | 28           | 14 | 14  |
| <u>Pass-by</u>                 |                 | 152         | 7            | 4  | 3   | 8            | 4  | 4   |
| Net Trips                      |                 | 388         | 17           | 8  | 9   | 20           | 10 | 10  |
| <b>Proposed Site Traffic</b>   |                 |             |              |    |     |              |    |     |
| <u>Site Generation</u>         | 1 Tunnel<br>28% |             |              |    |     |              |    |     |
| Automated Car Wash             |                 | 942         | 68           | 34 | 34  | 78           | 39 | 39  |
| <u>Pass-by</u>                 |                 | 264         | 20           | 10 | 10  | 22           | 11 | 11  |
| Net Trips                      |                 | 678         | 48           | 24 | 24  | 56           | 28 | 28  |
|                                |                 |             |              |    |     |              |    |     |
| Net Increase in Driveway Trips |                 | 402         | 44           | 22 | 22  | 50           | 25 | 25  |
| Net Increase in TPS Trips      |                 | 290         | 31           | 16 | 15  | 36           | 18 | 18  |

**Palm Beach County Trip Generation Rates**

| Landuse                          | ITE Code | Unit   | Daily Rate/Equation | Pass-By % | AM Peak Hour |               | PM Peak Hour |               |
|----------------------------------|----------|--------|---------------------|-----------|--------------|---------------|--------------|---------------|
|                                  |          |        |                     |           | In/Out       | Rate/Equation | In/Out       | Rate/Equation |
| Carwash (Manual)                 | 947      | Stall  | 108.00              | 28%       | 50/50        | 4.86          | 51/49        | 5.54          |
| Carwash (Automated)              | PBC      | Tunnel | 942.00              | 28%       | 50/50        | 67.96         | 50/50        | 77.50         |
| Carwash (Automated) <sup>9</sup> | PBC      | Lane   | 166.00              | 0%        | 50/50        | 11.97         | 50/50        | 13.65         |

Per discussions with staff, Pass-by rate of Tire Store (28%) utilized

ITE 947 has no AM Peak. AM peak derived from PBC AM/PM ratio

ITE 949 has no Daily or AM Peak. AM peak and daily derived from PBC AM/PM ratio

**2210 N FEDERAL LENNY'S CARWASH**

**TABLE 2  
SIGNIFICANCE**

**AM PEAK HOUR - INBOUND**

|                 |                 |                  |    | LOS CAPACITY | PROJECT    |         |          |
|-----------------|-----------------|------------------|----|--------------|------------|---------|----------|
| Roadway         | From            | To               | Ln | VOL          | Assignment | Traffic | % Impact |
| FEDERAL HIGHWAY | GULFSTREAM BLVD | SW 23RD AVE      | 4D | 1,770        | 40%        | 6       | 0.34%    |
| FEDERAL HIGHWAY | SW 23RD AVE     | SITE             | 4D | 1,770        | 40%        | 6       | 0.34%    |
| FEDERAL HIGHWAY | SITE            | GEORGE BUSH BLVD | 4D | 1,770        | 40%        | 6       | 0.34%    |
| DIXIE HIGHWAY   | GULFSTREAM BLVD | SW 23RD AVE      | 2L | 880          | 5%         | 1       | 0.11%    |
| DIXIE HIGHWAY   | SITE            | GULFSTREAM BLVD  | 2L | 880          | 10%        | 2       | 0.23%    |
| DIXIE HIGHWAY   | GULFSTREAM BLVD | GEORGE BUSH BLVD | 2L | 880          | 10%        | 2       | 0.23%    |
| GULFSTREAM BLVD | SEACREST BLVD   | OLD DIXIE HWY    | 4D | 1,770        | 5%         | 1       | 0.06%    |
| GULFSTREAM BLVD | OLD DIXIE HWY   | FEDERAL HWY      | 4D | 1,770        | 0%         | 0       | 0.00%    |

**2210 N FEDERAL LENNY'S CARWASH**

**TABLE 3  
SIGNIFICANCE**

**PM PEAK HOUR - INBOUND**

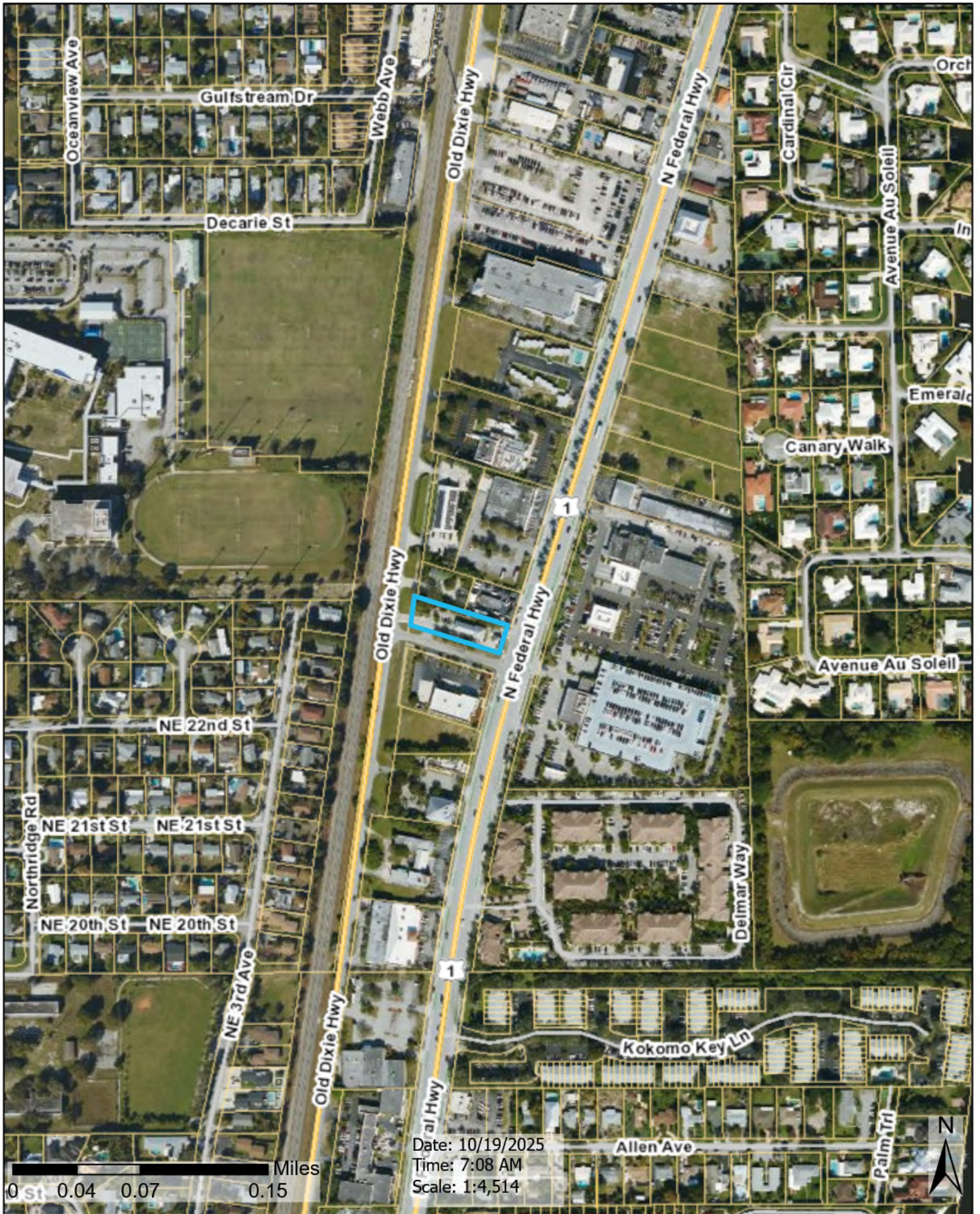
|                 |                 |                  |    | LOS CAPACITY | PROJECT    |         |          |
|-----------------|-----------------|------------------|----|--------------|------------|---------|----------|
| Roadway         | From            | To               | Ln | VOL          | Assignment | Traffic | % Impact |
| FEDERAL HIGHWAY | GULFSTREAM BLVD | SW 23RD AVE      | 4D | 1,770        | 40%        | 7       | 0.40%    |
| FEDERAL HIGHWAY | SW 23RD AVE     | SITE             | 4D | 1,770        | 40%        | 7       | 0.40%    |
| FEDERAL HIGHWAY | SITE            | GEORGE BUSH BLVD | 4D | 1,770        | 40%        | 7       | 0.40%    |
| DIXIE HIGHWAY   | GULFSTREAM BLVD | SW 23RD AVE      | 2L | 880          | 5%         | 1       | 0.11%    |
| DIXIE HIGHWAY   | SITE            | GULFSTREAM BLVD  | 2L | 880          | 10%        | 2       | 0.23%    |
| DIXIE HIGHWAY   | GULFSTREAM BLVD | GEORGE BUSH BLVD | 2L | 880          | 10%        | 2       | 0.23%    |
| GULFSTREAM BLVD | SEACREST BLVD   | OLD DIXIE HWY    | 4D | 1,770        | 5%         | 1       | 0.06%    |
| GULFSTREAM BLVD | OLD DIXIE HWY   | FEDERAL HWY      | 4D | 1,770        | 0%         | 0       | 0.00%    |

## ***APPENDIX***

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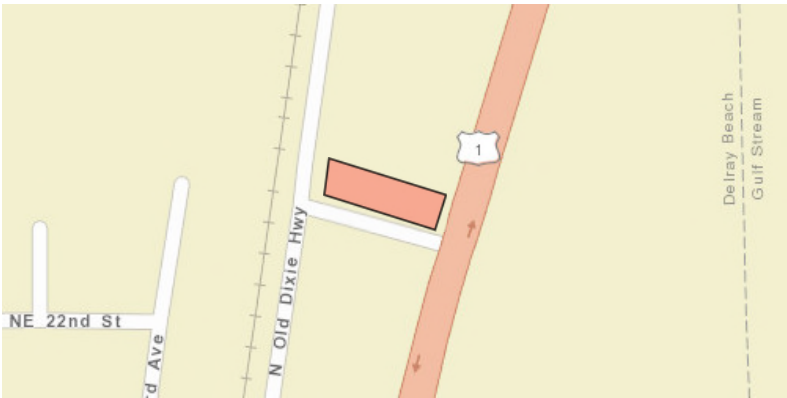
## ***APPENDIX A***

### ***Site Data***



Property Detail

|                        |                                                  |                   |                              |        |             |
|------------------------|--------------------------------------------------|-------------------|------------------------------|--------|-------------|
| Parcel Control Number: | 12-43-46-04-35-000-0010                          | Location Address: | 2210 N FEDERAL HWY           |        |             |
| Owners:                | EQUITABLE REOF LLC                               | Municipality:     | DELRAY BEACH                 |        |             |
| Mailing Address:       | 4530 PINE TREE DR, , BOYNTON BEACH FL 33436 4825 |                   |                              |        |             |
| Last Sale:             | 06/20/2025                                       | Book/Page#:       | 35838 / 01011                | Price: | \$2,150,000 |
| Property Use Code:     | 2700 - AUTO SALES                                | Zoning:           | GC - GC - GENERAL COMMERCIAL |        |             |
| Legal Description:     | NORTH FEDERAL HIGHWAY<br>REPL LT 1               | Total SF:         | 2045                         | Acres  | .48         |



2025 Values (Preliminary)

|                    |             |
|--------------------|-------------|
| Improvement Value  | \$532,541   |
| Land Value         | \$493,439   |
| Total Market Value | \$1,025,980 |
| Assessed Value     | \$1,025,980 |
| Exemption Amount   | \$0         |
| Taxable Value      | \$1,025,980 |

All values are as of January 1st each year.

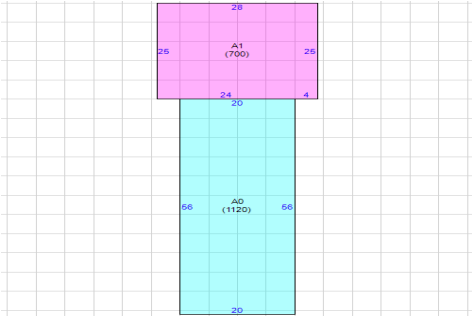
2025 Taxes (Preliminary)

|                |          |
|----------------|----------|
| Ad Valorem     | \$18,931 |
| Non Ad Valorem | \$1,240  |
| Total Tax      | \$20,171 |

2025 Qualified Exemptions

Applicants

Building Footprint (Building 1 )



Subarea and Square Footage (Building 1 )

| Description            | Area Sq. Footage |
|------------------------|------------------|
| CAR WASH MANUAL        | 1120             |
| AUTO CAR WASH          | 700              |
| Total Square Footage : | 2045             |

Extra Features

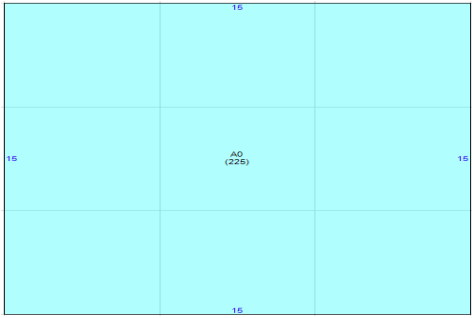
| Description     | Year Built | Unit  |
|-----------------|------------|-------|
| Paving- Asphalt | 2007       | 13579 |
| Wall            | 2007       | 156   |

Unit may represent the perimeter, square footage, linear footage, total number or other measurement.

Structural Details (Building 1)

| Description         |      |
|---------------------|------|
| 1 Year Built        | 2007 |
| 2 CAR WASH - MANUAL | 1820 |

Building Footprint (Building 2 )



Subarea and Square Footage (Building 2 )

| Description            | Area Sq. Footage |
|------------------------|------------------|
| OFFICES                | 225              |
| Total Square Footage : | 2045             |

Extra Features

| Description     | Year Built | Unit  |
|-----------------|------------|-------|
| Paving- Asphalt | 2007       | 13579 |
| Wall            | 2007       | 156   |

Unit may represent the perimeter, square footage, linear footage, total number or other measurement.

Structural Details (Building 2)

| Description            |      |
|------------------------|------|
| 1 Year Built           | 2007 |
| 2 OFFICE BLDG L/R 1-4S | 225  |

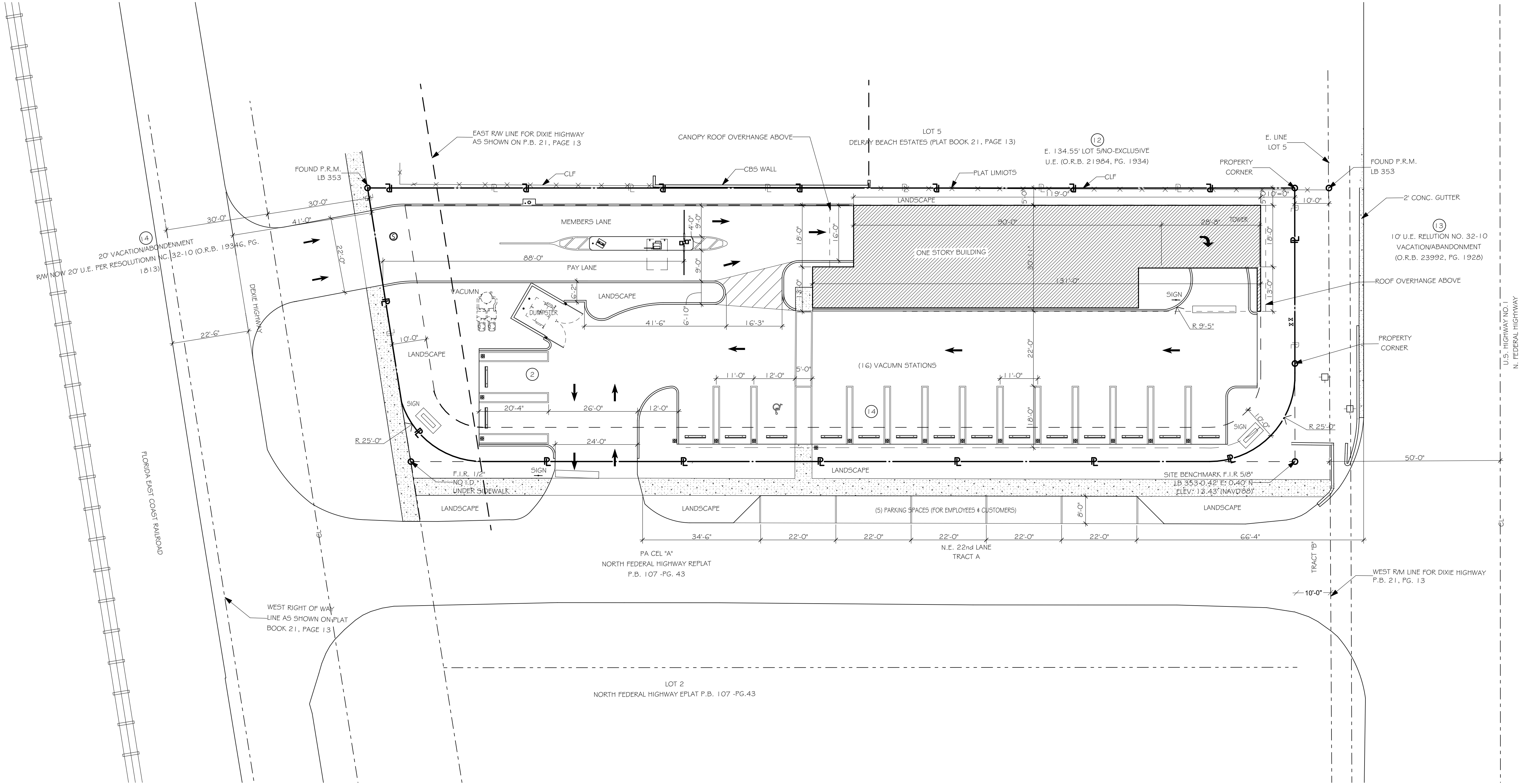
## ***APPENDIX B***

### ***Site Plan***



SITE PLAN

SCALE: 1/16" = 1'-0"



STEVE SIEBERT  
ARCHITECTURE

1010 GATEWAY BLVD, SUIT 103  
BOYNTON BEACH, FL 33426  
PH: 561.880.7894  
Steve@sievesiebert.com  
www.sievesiebert.com



PROGRESS  
DATE: 9/19/25  
BY: Adam Miller

STEVEN W. SIEBERT  
FLORIDA AR0017834

LENNY'S CARWASH V.3.3  
2210 N. FEDERAL HIGHWAY  
DELRAY BEACH, FLORIDA 33483

SCHEMATIC DESIGN

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DATE: 7/25/25

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CHECKED BY: S.S.

REVISIONS:

1. OWNER CHANGE (07.25.25)

2. OWNER CHANGE (07.28.25)

3. OWNER CHANGE (08.12.25)

4. OWNER CHANGE (09.14.25)

SITE PLAN

SP1.1

## ***APPENDIX C***

### ***ITE TRIP GENERATION BACKUP***

# Land Use: 947

## Self-Service Car Wash

---

### Description

A self-service car wash allows manual cleaning of vehicles by providing stalls for a motorist to park and wash a vehicle. Automated car wash (Land Use 948) and car wash and detail center (Land Use 949) are related uses.

### Additional Data

The sites were surveyed in the 1980s, the 1990s, and the 2000s in Colorado, New Jersey, and South Dakota.

### Source Numbers

171, 178, 358, 359, 550, 955

# Self-Service Car Wash (947)

Vehicle Trip Ends vs: Wash Stalls  
On a: Weekday

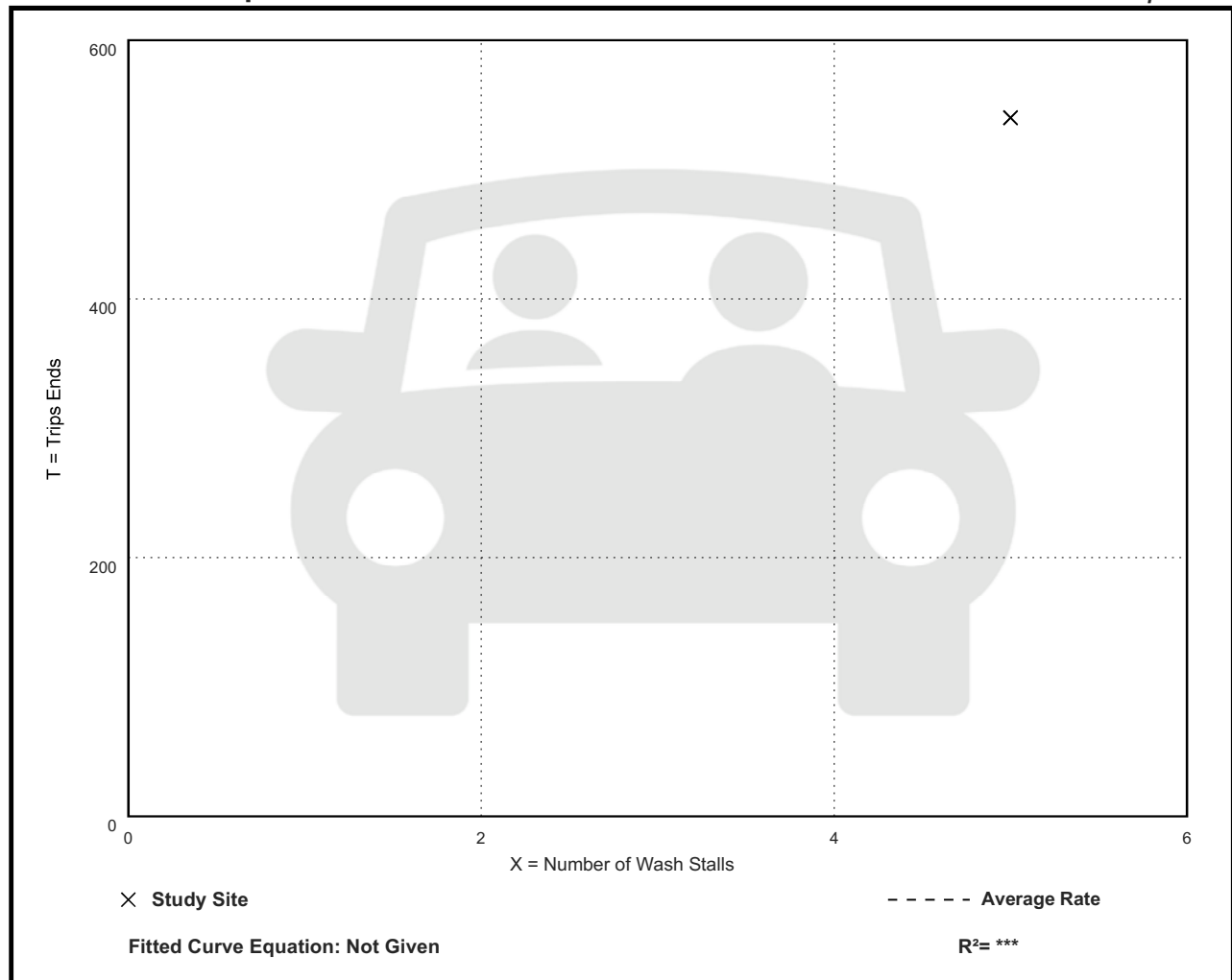
Setting/Location: General Urban/Suburban  
Number of Studies: 1  
Avg. Num. of Wash Stalls: 5  
Directional Distribution: 50% entering, 50% exiting

## Vehicle Trip Generation per Wash Stall

| Average Rate | Range of Rates  | Standard Deviation |
|--------------|-----------------|--------------------|
| 108.00       | 108.00 - 108.00 | ***                |

## Data Plot and Equation

Caution – Small Sample Size



# Self-Service Car Wash (947)

## Vehicle Trip Ends vs: Wash Stalls

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

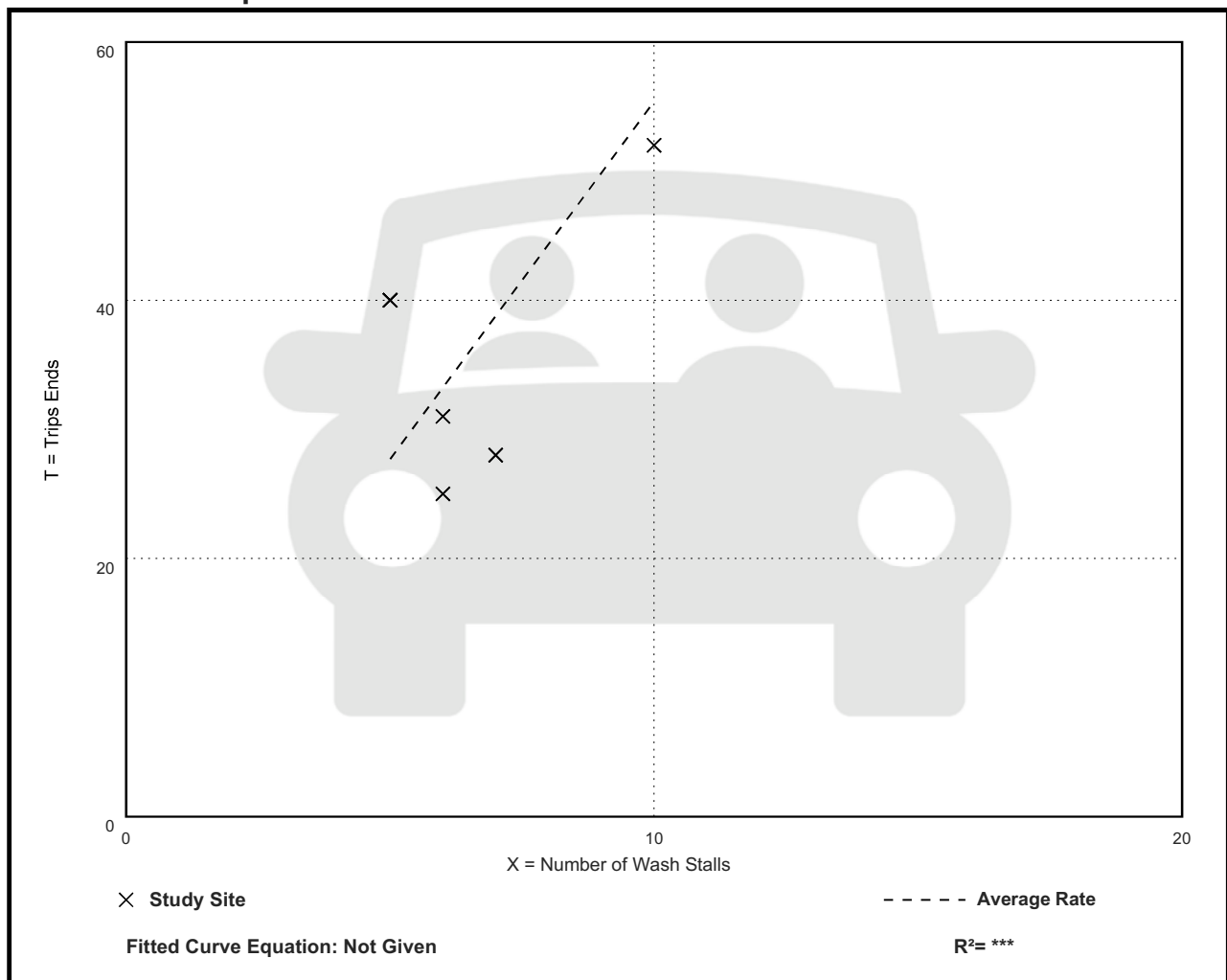
Avg. Num. of Wash Stalls: 7

Directional Distribution: 51% entering, 49% exiting

## Vehicle Trip Generation per Wash Stall

| Average Rate | Range of Rates | Standard Deviation |
|--------------|----------------|--------------------|
| 5.54         | 4.00 - 8.00    | 1.67               |

## Data Plot and Equation



# Self-Service Car Wash (947)

## Vehicle Trip Ends vs: Wash Stalls

On a: Weekday,

AM Peak Hour of Generator

Setting/Location: General Urban/Suburban

Number of Studies: 1

Avg. Num. of Wash Stalls: 5

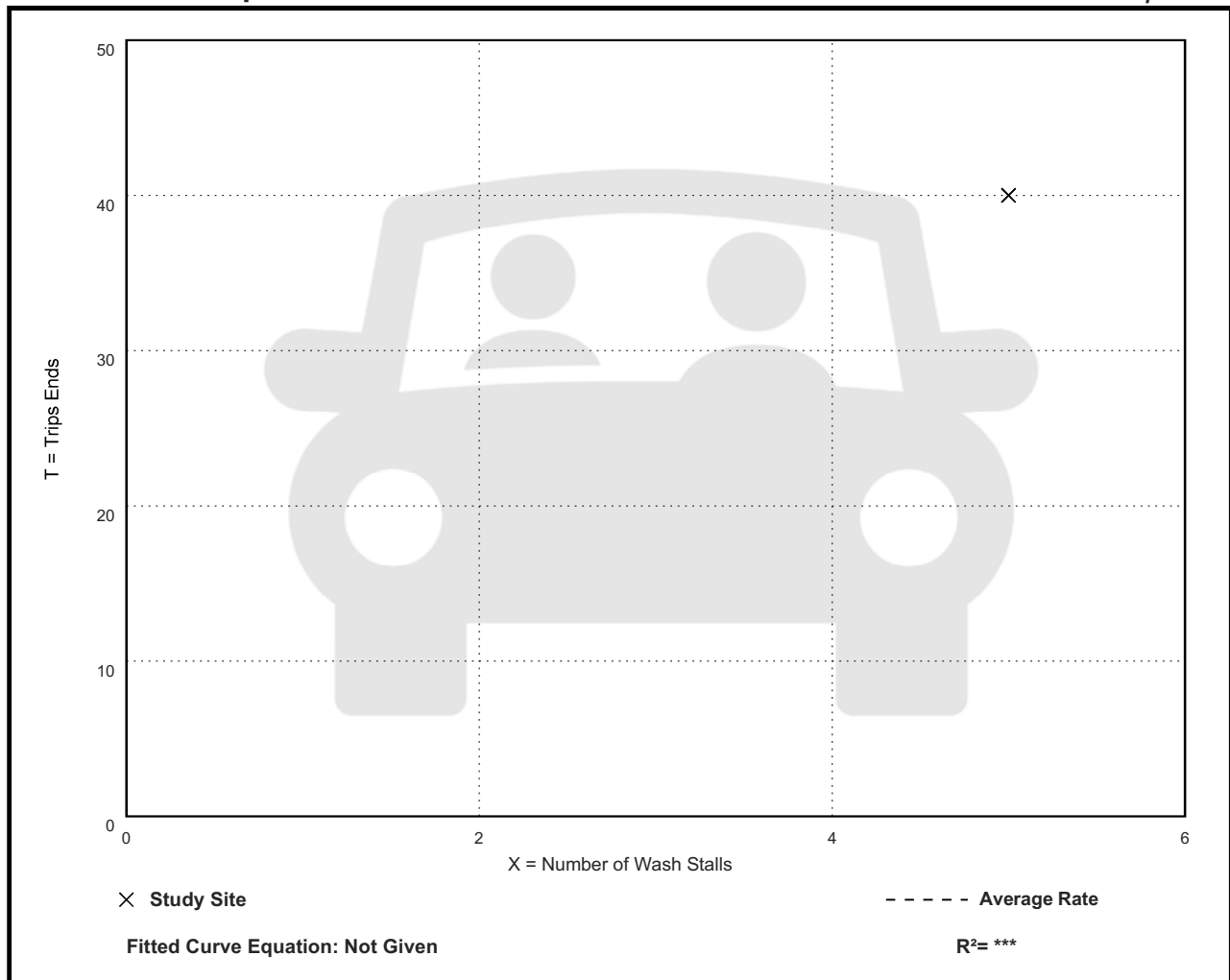
Directional Distribution: 50% entering, 50% exiting

## Vehicle Trip Generation per Wash Stall

| Average Rate | Range of Rates | Standard Deviation |
|--------------|----------------|--------------------|
| 8.00         | 8.00 - 8.00    | ***                |

## Data Plot and Equation

Caution – Small Sample Size



# Self-Service Car Wash (947)

## Vehicle Trip Ends vs: Wash Stalls

On a: Weekday,

PM Peak Hour of Generator

Setting/Location: General Urban/Suburban

Number of Studies: 1

Avg. Num. of Wash Stalls: 5

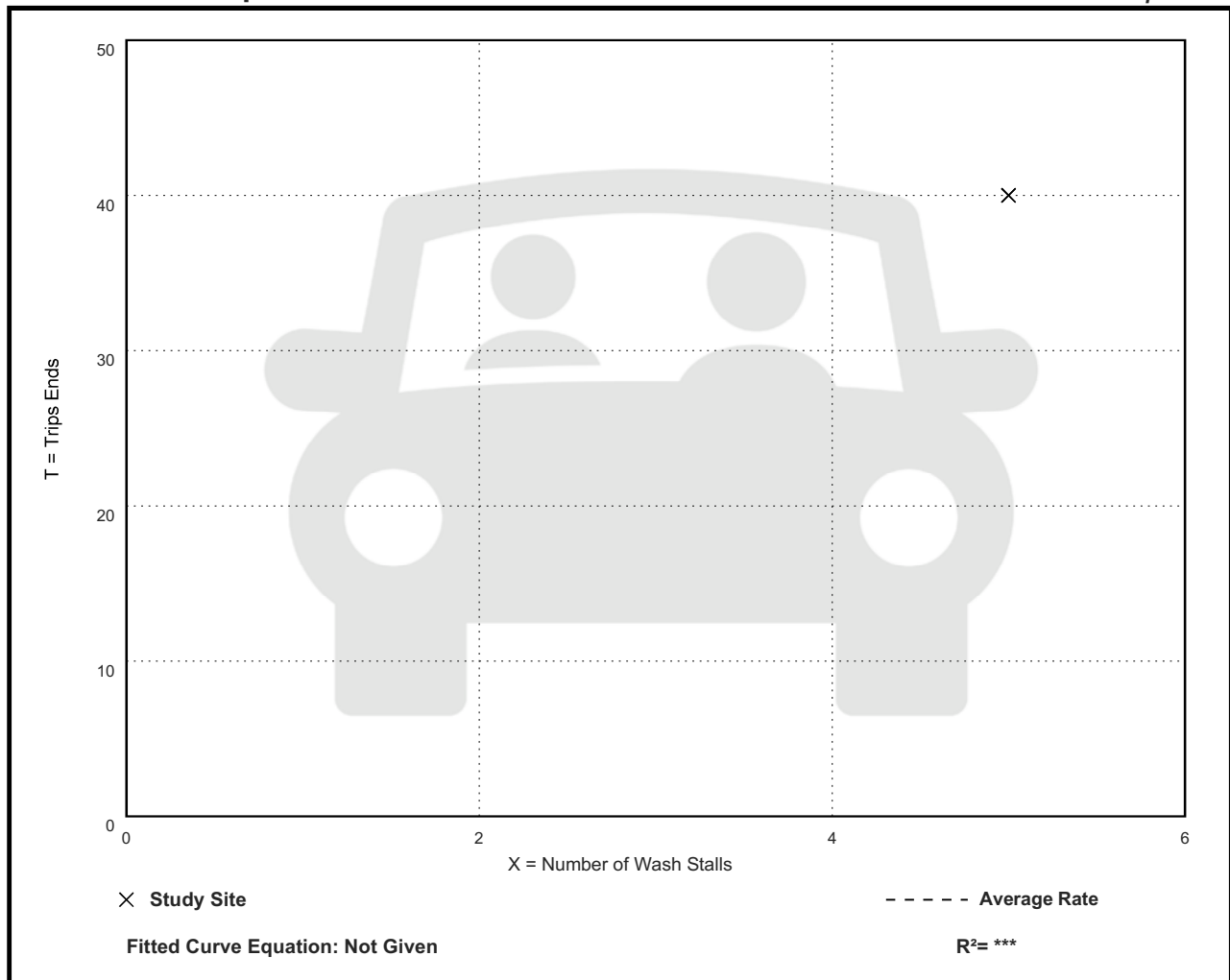
Directional Distribution: 50% entering, 50% exiting

## Vehicle Trip Generation per Wash Stall

| Average Rate | Range of Rates | Standard Deviation |
|--------------|----------------|--------------------|
| 8.00         | 8.00 - 8.00    | ***                |

## Data Plot and Equation

Caution – Small Sample Size



# Self-Service Car Wash (947)

Vehicle Trip Ends vs: Wash Stalls  
On a: Saturday

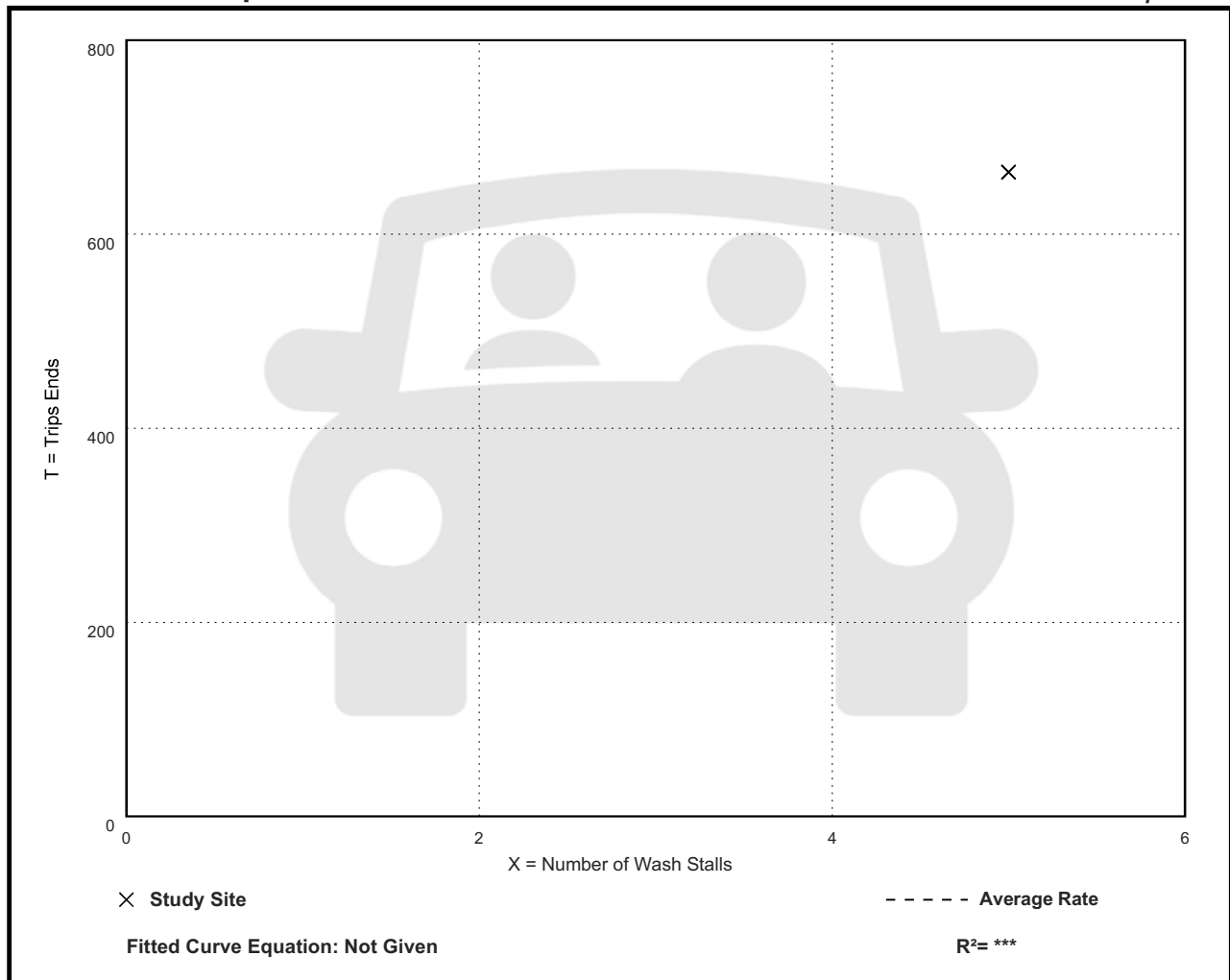
Setting/Location: General Urban/Suburban  
Number of Studies: 1  
Avg. Num. of Wash Stalls: 5  
Directional Distribution: 50% entering, 50% exiting

## Vehicle Trip Generation per Wash Stall

| Average Rate | Range of Rates  | Standard Deviation |
|--------------|-----------------|--------------------|
| 132.80       | 132.80 - 132.80 | ***                |

## Data Plot and Equation

Caution – Small Sample Size



# Self-Service Car Wash (947)

## Vehicle Trip Ends vs: Wash Stalls

On a: Saturday, Peak Hour of Generator

Setting/Location: General Urban/Suburban

Number of Studies: 3

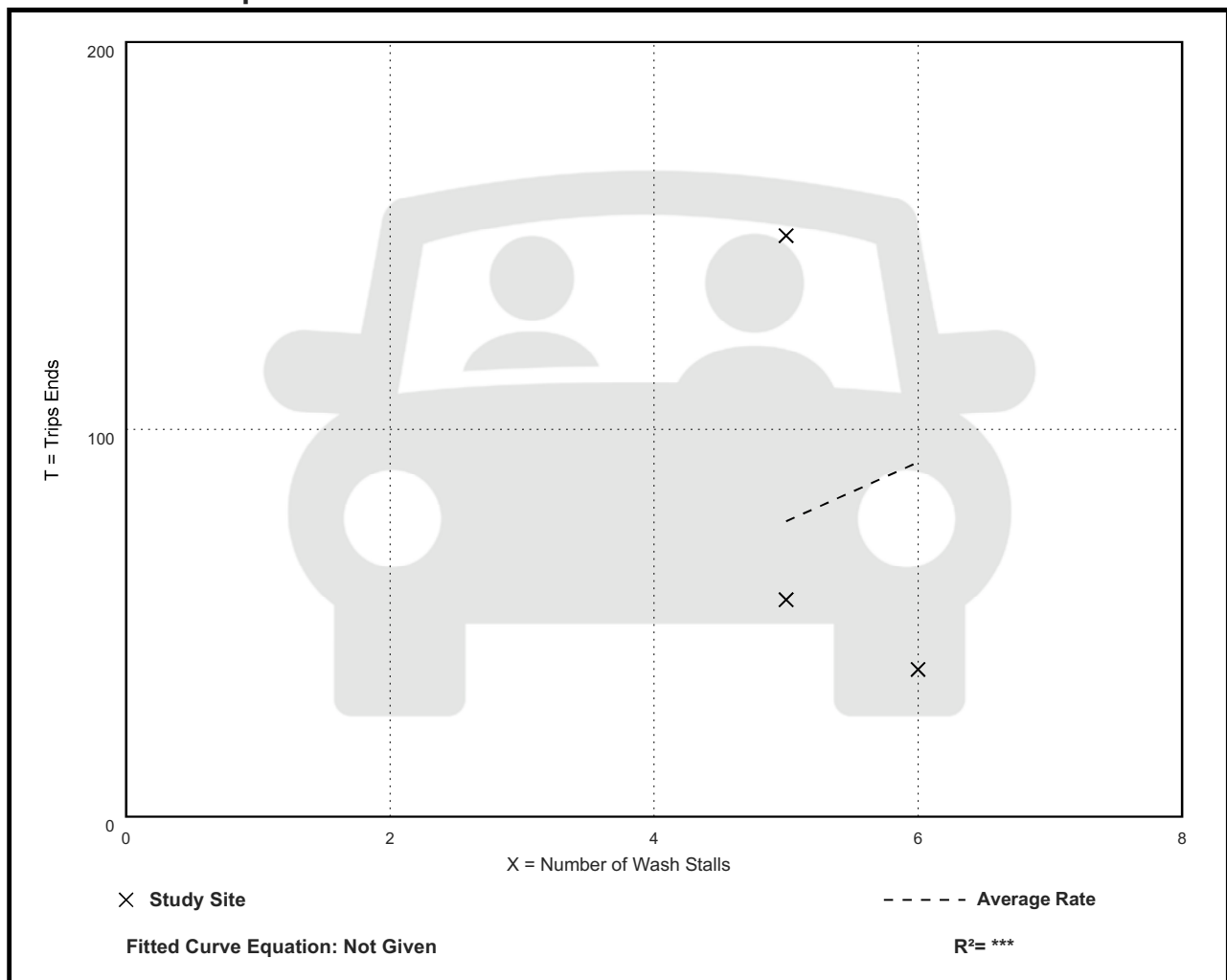
Avg. Num. of Wash Stalls: 5

Directional Distribution: 50% entering, 50% exiting

## Vehicle Trip Generation per Wash Stall

| Average Rate | Range of Rates | Standard Deviation |
|--------------|----------------|--------------------|
| 15.25        | 6.33 - 30.00   | 12.43              |

## Data Plot and Equation



# Land Use: 948

## Automated Car Wash

---

### Description

An automated car wash is a facility that allows for the mechanical cleaning of the exterior of vehicles. Manual cleaning service may also be available at the facility. Self-service car wash (Land Use 947) and car wash and detail center (Land Use 949) are related uses.

### Additional Data

The sites were surveyed in the 1990s and the 2000s in New Jersey, New York, and Washington.

### Source Numbers

552, 555, 585, 599, 954

# Automated Car Wash (948)

## Vehicle Trip Ends vs: Car Wash Tunnels

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: 3

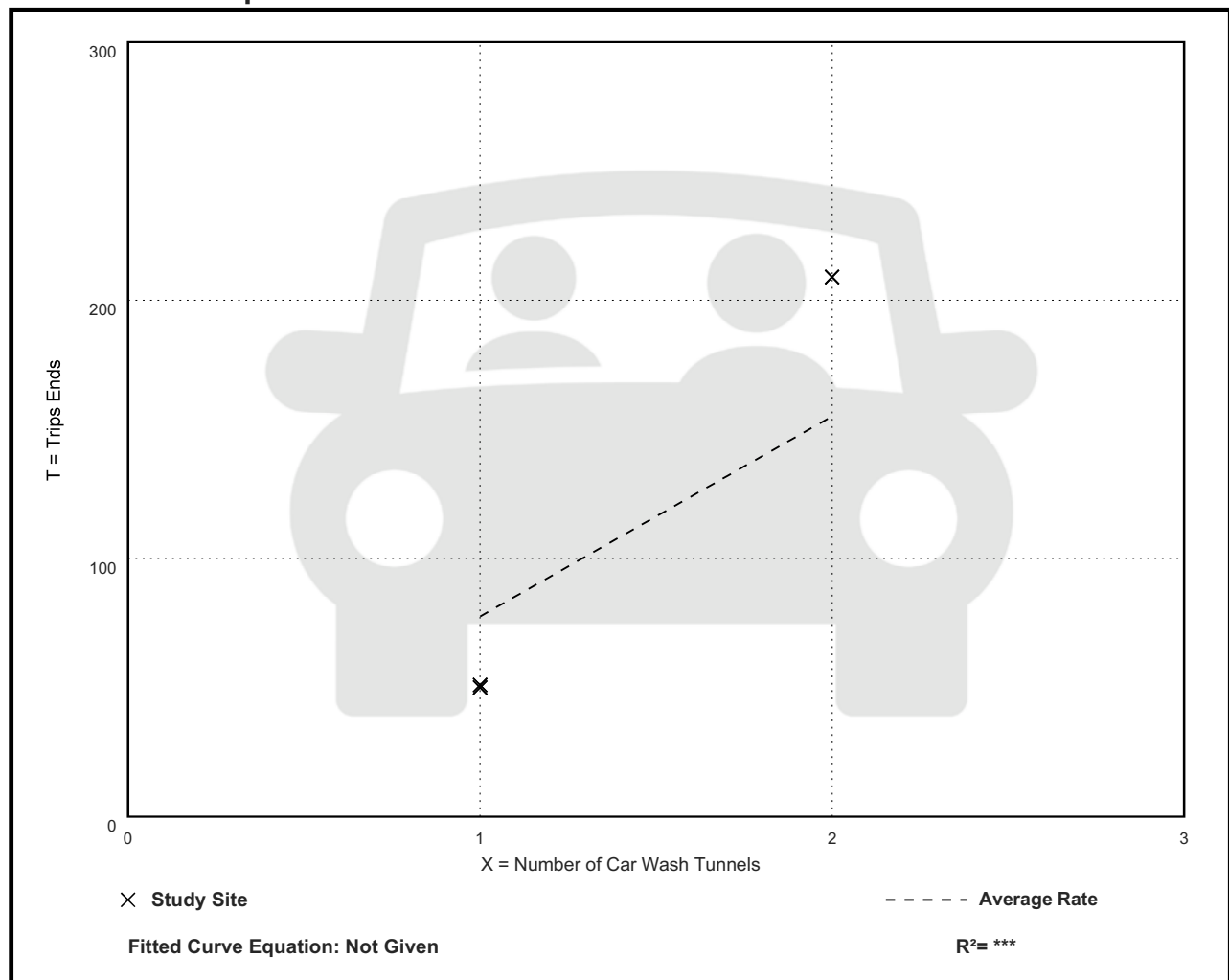
Avg. Num. of Car Wash Tunnels: 1

Directional Distribution: 50% entering, 50% exiting

## Vehicle Trip Generation per Car Wash Tunnel

| Average Rate | Range of Rates | Standard Deviation |
|--------------|----------------|--------------------|
| 77.50        | 50.00 - 104.50 | 33.07              |

## Data Plot and Equation



# Automated Car Wash (948)

## Vehicle Trip Ends vs: Car Wash Tunnels

On a: Saturday, Peak Hour of Generator

Setting/Location: General Urban/Suburban

Number of Studies: 1

Avg. Num. of Car Wash Tunnels: 1

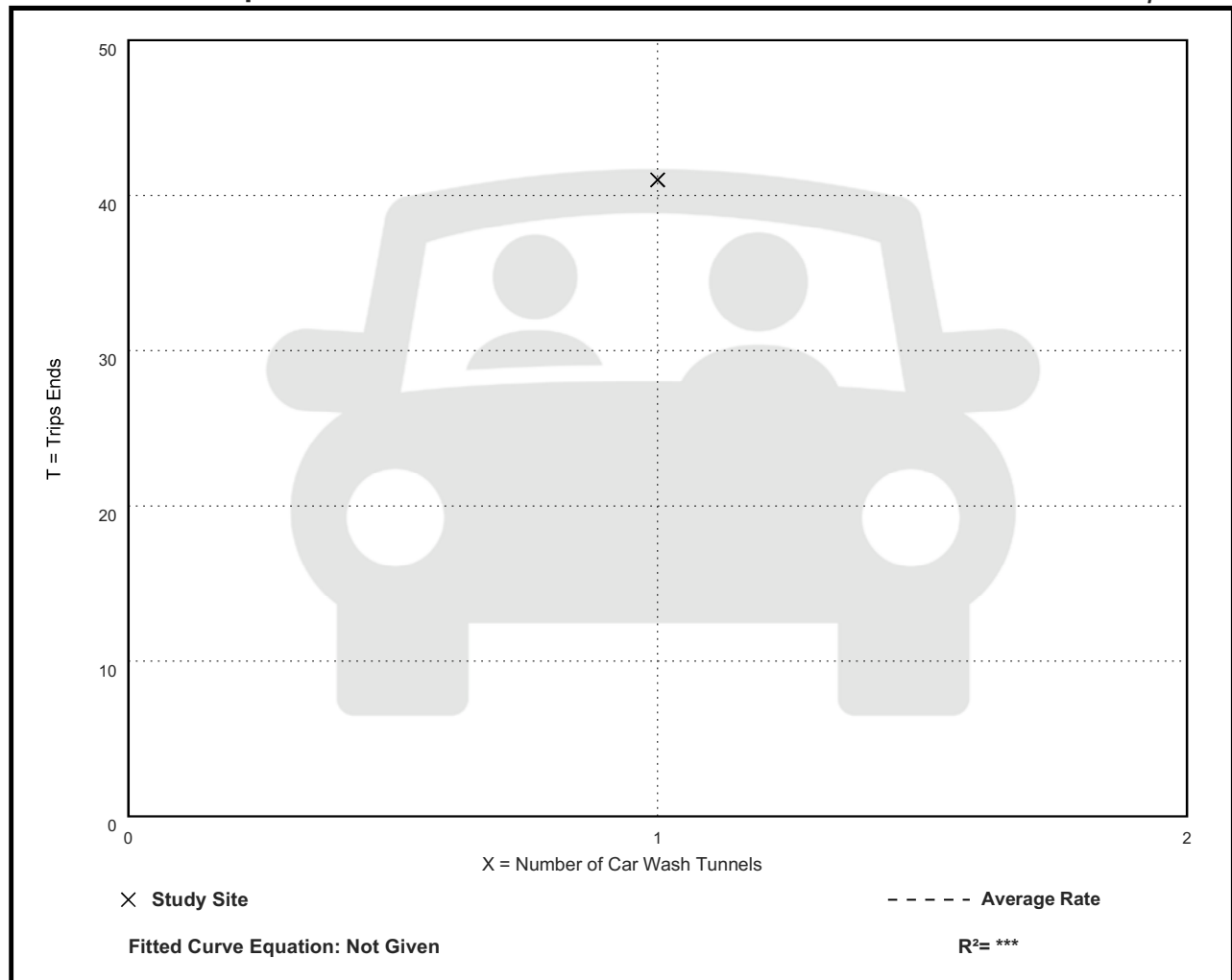
Directional Distribution: 46% entering, 54% exiting

## Vehicle Trip Generation per Car Wash Tunnel

| Average Rate | Range of Rates | Standard Deviation |
|--------------|----------------|--------------------|
| 41.00        | 41.00 - 41.00  | ***                |

## Data Plot and Equation

Caution – Small Sample Size



# Automated Car Wash (948)

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: 1

Avg. 1000 Sq. Ft. GFA: 2

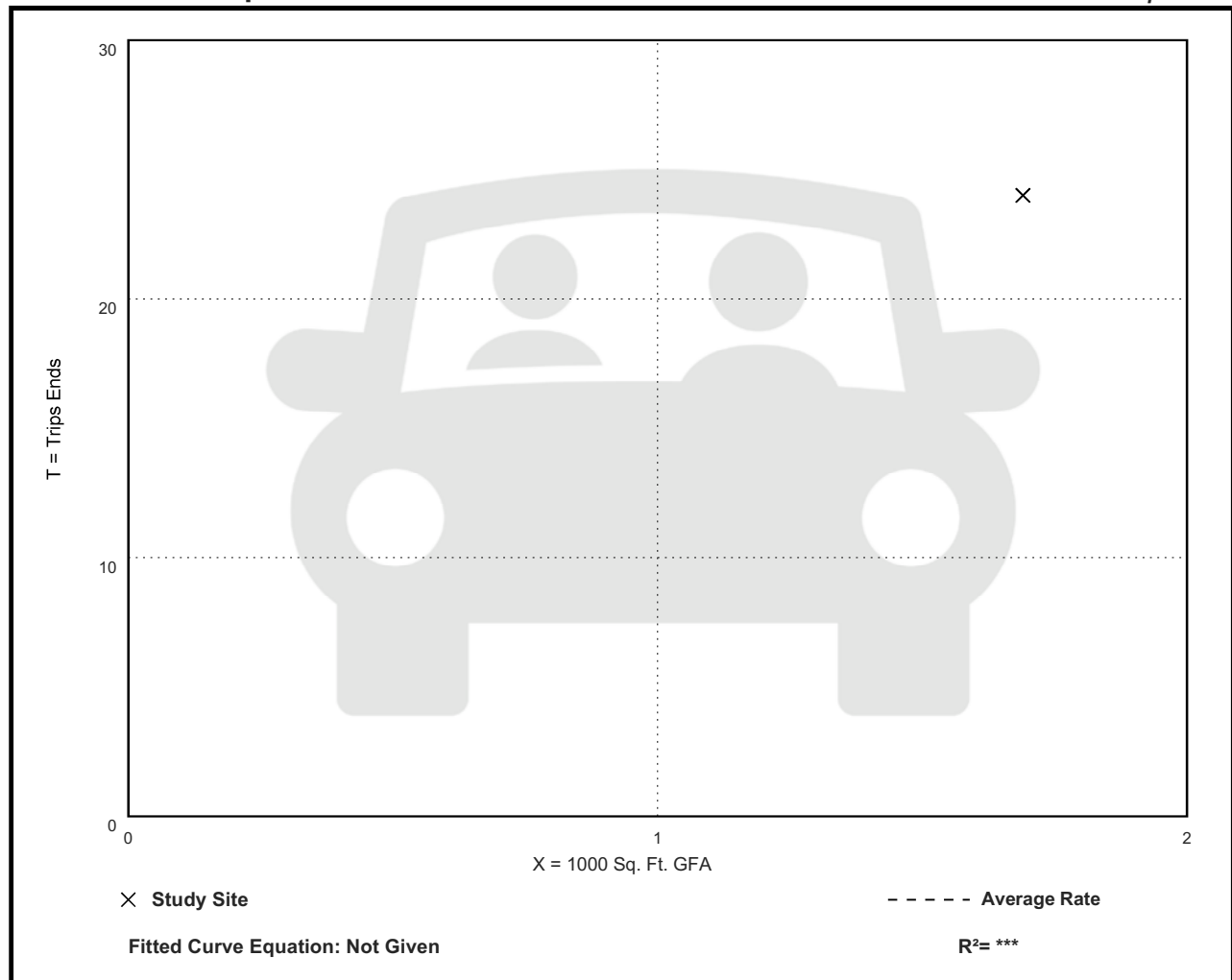
Directional Distribution: 50% entering, 50% exiting

## Vehicle Trip Generation per 1000 Sq. Ft. GFA

| Average Rate | Range of Rates | Standard Deviation |
|--------------|----------------|--------------------|
| 14.20        | 14.20 - 14.20  | ***                |

## Data Plot and Equation

Caution – Small Sample Size



# Automated Car Wash (948)

Vehicle Trip Ends vs: 1000 Sq. Ft. GFA

On a: Weekday,

PM Peak Hour of Generator

Setting/Location: General Urban/Suburban

Number of Studies: 2

Avg. 1000 Sq. Ft. GFA: 5

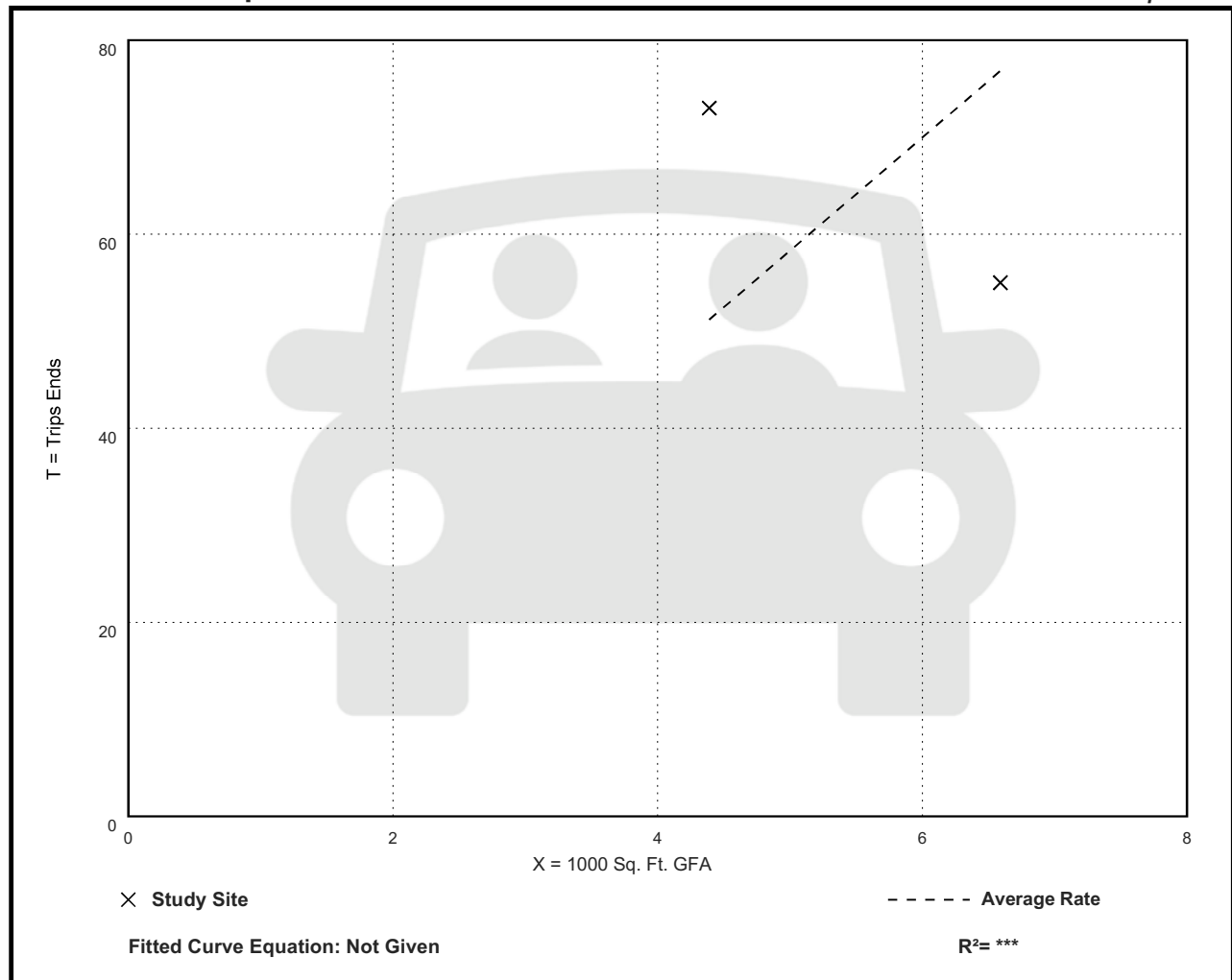
Directional Distribution: 50% entering, 50% exiting

## Vehicle Trip Generation per 1000 Sq. Ft. GFA

| Average Rate | Range of Rates | Standard Deviation |
|--------------|----------------|--------------------|
| 11.66        | 8.35 - 16.63   | ***                |

## Data Plot and Equation

Caution – Small Sample Size



# Automated Car Wash (948)

Vehicle Trip Ends vs: 1000 Sq. Ft. GFA

On a: Saturday, Peak Hour of Generator

Setting/Location: General Urban/Suburban

Number of Studies: 3

Avg. 1000 Sq. Ft. GFA: 4

Directional Distribution: 50% entering, 50% exiting

## Vehicle Trip Generation per 1000 Sq. Ft. GFA

| Average Rate | Range of Rates | Standard Deviation |
|--------------|----------------|--------------------|
| 30.40        | 14.20 - 37.75  | 9.63               |

## Data Plot and Equation

