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**To:** City of Port St. Lucie Planning and Zoning Development

**From:** Shaun G. MacKenzie, P.E.

**Date:** April 5, 2022

**Re:** Tradition Regional Park
Traffic Statement

MacKenzie Engineering and Planning, Inc. performed an analysis of the traffic impacts resulting from the Phase 1 of Tradition Regional Park. The project proposes 8 baseball/softball fields and 3 soccer/multi-fields in Phase 1.

## PROPOSED TRAFFIC GENERATION

### Traffic Generation

The proposed buildout uses trip generation rates for Soccer Complex (ITE Land Use 488) published in the Institute of Transportation Engineers' (ITE) report, *Trip Generation (11th Edition).* To be conservative, the baseball fields are treated as soccer fields. Figure 1 presents the proposed project's trip generation.

The proposed phase will generate the following net new external and cumulative driveway trips:

- 785 daily, 11 AM peak hour (7 in/4 out), and 188 PM peak hour (124 in/64 out) trips.

### Internal Capture

The site contains no internal capture.

### Pass-by Trip Capture

The pass-by trip capture rate is 0.

## Figure 1. Trip Generation

| Land Use | Intensity | Daily Trips | AM Peak Hour | | | PM Peak Hour | | |
|---|---|---|---|---|---|---|---|---|
| | | | Total | In | Out | Total | In | Out |
| **Proposed Site Traffic** | | | | | | | | |
| Soccer Complex | 11 Fields | 785 | 11 | 7 | 4 | 188 | 124 | 64 |
| **NET CHANGE IN TRIPS (FOR THE PURPOSES OF CONCURRENCY)** | | **785** | **11** | **7** | **4** | **188** | **124** | **64** |
| **NET CHANGE IN DRIVEWAY VOLUMES** | | **785** | **11** | **7** | **4** | **188** | **124** | **64** |

Note: Trip generation was calculated using the following data:

| Land Use | ITE Code | Unit | Daily Rate | Pass-by Rate | AM Peak Hour in/out | AM Peak Hour Rate | PM Peak Hour in/out | PM Peak Hour Equation |
|---|---|---|---|---|---|---|---|---|
| Soccer Complex | 488 | Fields | 71.33 | 0% | 61/39 | 0.99 | 66/34 | T = 13.92(X) + 35.13 |

*ITE 11th Edition*

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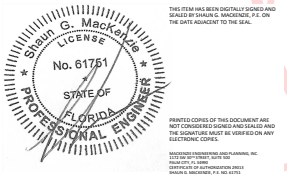


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Date: 2022.04.15 13:40:57 -04'00'

Shaun G. MacKenzie
Florida P.E. 61751
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# Land Use: 488
# Soccer Complex

## Description

A soccer complex is an outdoor facility that is used for non-professional soccer games. It may consist of multiple fields. The size of each field within the land use may vary to accommodate games for different age groups. On-site amenities may include stadium seating, a fitness trail, an activities shelter, aquatic center, picnic grounds, basketball and tennis courts, and a playground. Public park (Land Use 411) is a related use.

## Additional Data

***Caution should be used when applying these data. Peaking at soccer complexes typically occurred in time periods shorter than 1 hour. These peaking periods may have durations of 10 to 15 minutes. To assist in the future analysis of this land use, it is important to collect driveway counts in 10-minute intervals.***

The technical appendices provide supporting information on time-of-day distributions for this land use. The appendices can be accessed through either the ITETripGen web app or the trip generation resource page on the ITE website (https://www.ite.org/technical-resources/topics/trip-and-parking-generation/).

The sites were surveyed in the 1990s and the 2010s in California, Colorado, Hawaii, Indiana, New Jersey, and Washington.

## Source Numbers

377, 519, 565, 722, 856, 908, 952, 956, 1004

# Soccer Complex
# (488)

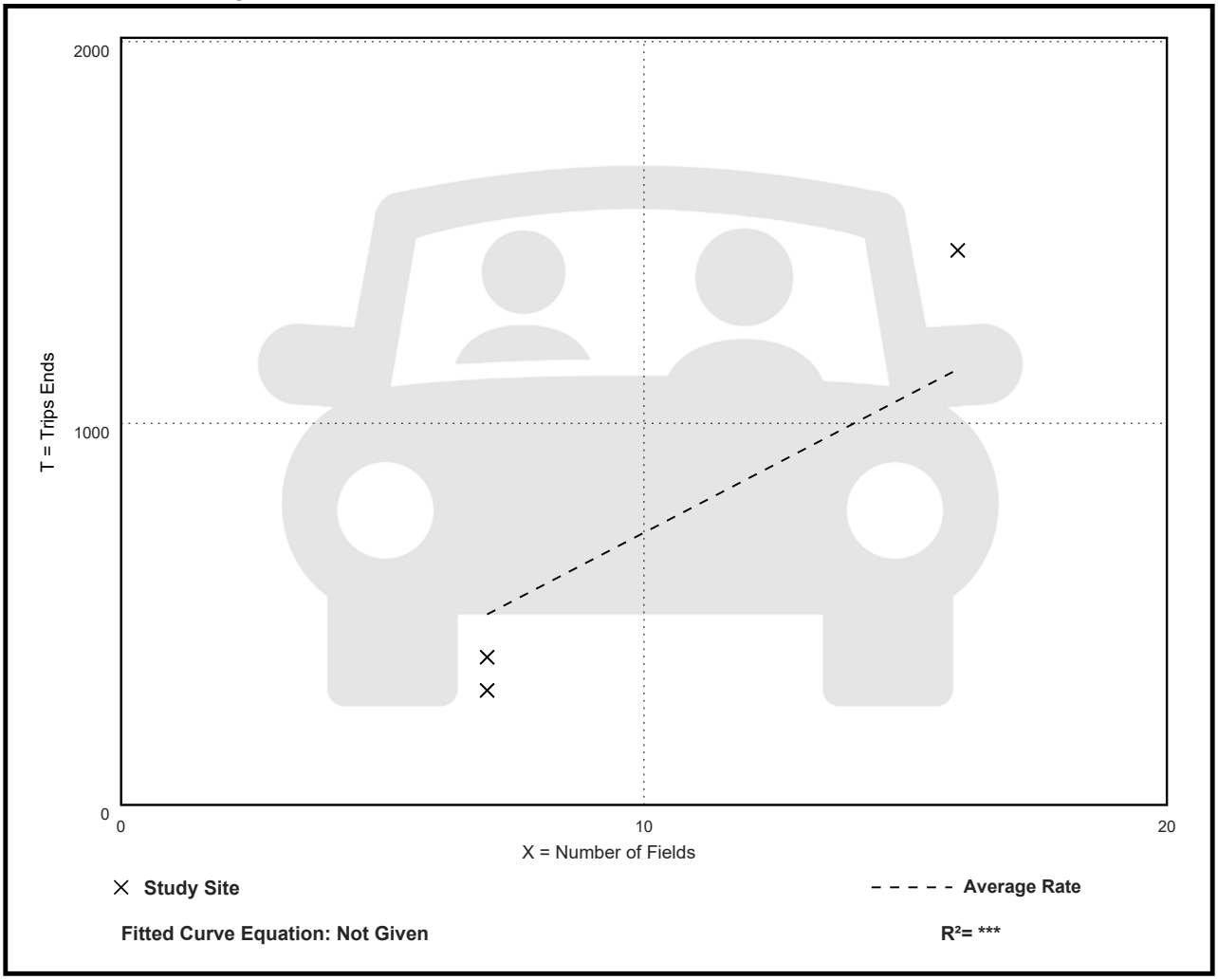
**Vehicle Trip Ends vs: Fields**
**On a: Weekday**

**Setting/Location: General Urban/Suburban**
Number of Studies: 3
Avg. Num. of Fields: 10
Directional Distribution: 50% entering, 50% exiting

## Vehicle Trip Generation per Field

| Average Rate | Range of Rates | Standard Deviation |
|---|---|---|
| 71.33 | 42.86 - 90.81 | 26.03 |

## Data Plot and Equation



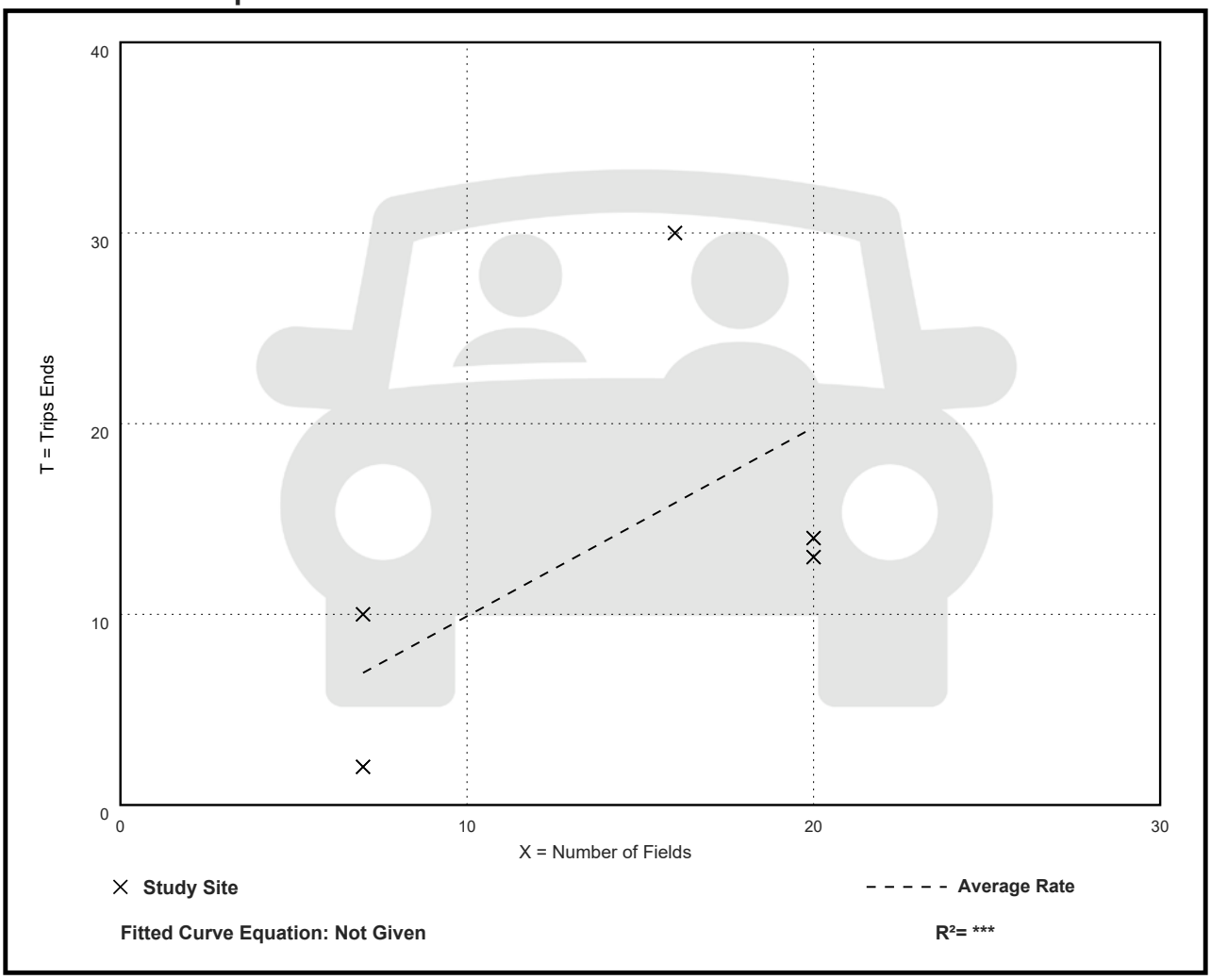
# Soccer Complex
# (488)

**Vehicle Trip Ends vs: Fields**
**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: 5
Avg. Num. of Fields: 14
Directional Distribution: 61% entering, 39% exiting

## Vehicle Trip Generation per Field

| Average Rate | Range of Rates | Standard Deviation |
|---|---|---|
| 0.99 | 0.29 - 1.88 | 0.62 |

## Data Plot and Equation



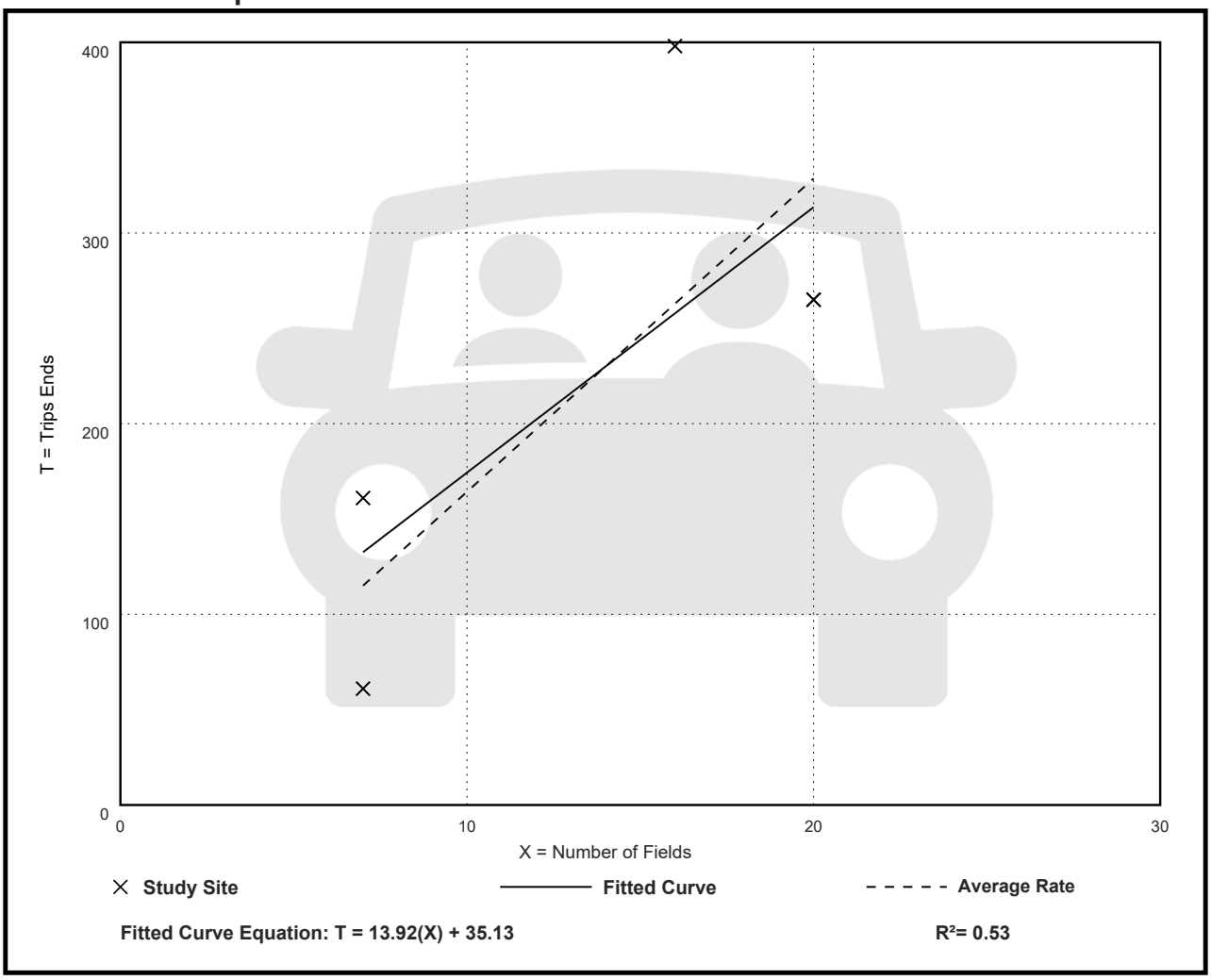
# Soccer Complex
# (488)

**Vehicle Trip Ends vs: Fields**
**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: 5
Avg. Num. of Fields: 14
Directional Distribution: 66% entering, 34% exiting

## Vehicle Trip Generation per Field

| Average Rate | Range of Rates | Standard Deviation |
|---|---|---|
| 16.43 | 8.71 - 24.88 | 6.36 |

## Data Plot and Equation




**Fitted Curve Equation: T = 13.92(X) + 35.13**

**$R^2$= 0.53**