

Methodology Overview

This form facilitates trip generation estimation using data within the Institute of Transportation Engineer's (ITE) Trip Generation Manual, 11th Edition and methodology described within ITE's Trip Generation Handbook, 3rd Edition. These references will be referred to as Manual and Handbook, respectively. The Manual contains data collected by various transportation professionals for a wide range of different land uses, with each land use category represented by a land use code (LUC). Average rates and equations have been established that correlate the relationship between an independent variable that describes the development size and generated trips for each categorized LUC in various settings and time periods. The Handbook indicates an established methodology for how to use data contained within the Manual when to use the fitted curve instead of the average rate and when to adjustments to the volume of trips are appropriate and how to do so. The methodology steps are represented visually in boxes in Figure 3.1. This worksheet applies calculations for each box if applicable.

Box 1 - Define Study Site Land Use Type & Site Characteristics

The analyst is to pick an appropriate LUC(s) based on the subject's zoning/land use(s)/future land use(s). The size of the land use(s) is described in reference to an independent variable(s) specific to (each) the land use (example: 1,000 square feet of building area is relatively common).

Land Use Types and Size

Proposed Use	Amount Units	ITE LUC	ITE Land Use Name
ADT, AM, & PM Using Equations	0.22 Storage units (100s)	151	Mini-Warehouse
ADT, AM, & PM Using Averages	0.22 Storage units (100s)	151	Mini-Warehouse
AM & PM Pk Hr of Generator	0.22 Storage units (100s)	151	Mini-Warehouse

Box 2 - Define Site Context

Context assessment is to "simply determine whether the study sites is in a multimodal setting" and "could have persons accessing the site by walking, bicycling, or riding transit." This assessment is used in Box 4. The Manual separates data into 4 setting categories - Rural, General Urban/Suburban, Dense Multi-Urban Use and Center City Core. This worksheet uses the following abbreviations, respectively: R, G, D, and C. The Manual does not have data for all settings of all land use codes. See the table on the next page titled "Site Context and Time Periods" - if this table is not provided, the "General Urban/Suburban" setting is used by default.

Box 3 - Define Analysis Objectives Types of Trips & Time Period

This tool will focus on vehicular trips for a 24-hour period on a typical weekday as well as its AM peak hour and PM peak hour. Other time period(s) may be of interest.

Site Context and Time Periods - Actual Setting, Setting Data Available for LUC, Setting Used in Analyses

Proposed Use	Setting	ADT		AM Peak Hour		PM Peak Hour	
		Available	Used	Available	Used	Available	Used
Mini-Warehouse	General Urban/Suburban G	G	G	G	G	G	G

Box 5/Box 9 - Estimate Baseline Trips/Estimate Vehicular Trips (Determine Equation)

Vehicle trips are estimated using rates/equations applicable to each LUC. When the appropriate graph has a fitted curve, the Handbook has a process (Figure 4.2) to determine when to use it versus using the weighted average rate or collecting local data. The methodology requires for engineering judgement in some circumstances and permits engineering judgement to override or make adjustments when appropriate to best project (example 1: study site is expected to operate differently than data in the applicable land use code - such as restaurant that is closed in the morning or in the evening; example 2: LUC data in a localized area fails to be represented by the typically selected fitted curve/weighted average rate - a small shop/LUC 820, AM peak hour is skewed by the high y-intercept).

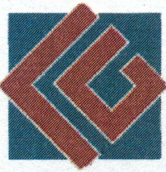
Equation Type: Equation Used [Equated Rate] (Type Abbreviations: Weighted Average Rate ("WA"), Fitted Curve ("FC"), or Custom ("C"))

Proposed Use	ADT	AM Peak Hour	PM Peak Hour
ADT, AM, & PM Using Equations	FC: $T=18.86 \cdot X - 4.09$ [0.27]	C: $T=X \cdot 0$ [0.00]*	FC: $\ln(T)=0.6 \cdot \ln(X) + 1.07$ [5.34]
ADT, AM, & PM Using Averages	WA: $T=X \cdot 17.96$ [17.96]	WA: $T=X \cdot 1.21$ [1.21]	WA: $T=X \cdot 1.68$ [1.68]
AM & PM Pk Hr of Generator	N/A: []	FC: $\ln(T)=0.62 \cdot \ln(X) + 1.34$ [6.79]	FC: $\ln(T)=0.59 \cdot \ln(X) + 1.43$ [7.77]

*Trip ends are not estimated for AM peak hour as equation yields negative value.

Box 5/Box 9 - Estimate Baseline Trips/Estimate Vehicular Trips (Apply Equations and in/out Distributions)**Baseline Vehicular Trips**

Proposed Use	ADT				AM Peak Hour				PM Peak Hour			
	% In	In	Out	Total	% In	In	Out	Total	% In	In	Out	Total
ADT, AM, & PM Using Equations	50%	1	1	2					50%	1	0	1
ADT, AM, & PM Using Averages	50%	2	2	4	51%	0	0	0	50%	0	0	0
AM & PM Pk Hr of Generator					58%	1	0	1	48%	1	1	2



CITY OF CASA GRANDE

SCOPING CHECKLIST FOR TRAFFIC IMPACT ANALYSIS

CHARACTERISTICS OF PROPOSED DEVELOPMENT

Site Location (Attach Site Plan)

The proposed site is an industrial development for a single, 22-acre, Pinal County parcel, the Assessor Parcel Number (APN) of which is APN 5033103B. The site is located south of the Maricopa-Casa Grande Highway and east of the Bianco Road in Casa Grande, Arizona. The site plan is provided as Attachment A.

Proposed Development Phasing (include opening year, buildout year, and any interim year phases)

The proposed development will be completed in one phase by the expected opening year of 2025.

Proposed Land Use (land use type and size at buildout and any interim phases; include anticipated hours of operation)

A concept plan provided to CivTech shows 21.76 acres of industrial use within the boundaries along the UPRR right of way and east frontage of Bianco Road.

Proposed Peak Hours of Development Trip Activity

☒ AM Peak ☒ PM Peak ☐ Weekend ☐ Other

(If other peak hours are required for unique generators, such as schools, places of worship, special event uses – please specify)

Queuing

Are the proposed uses anticipated to result in any substantial queuing? (i.e. schools, places of worship, commercial uses with drive-thrus, etc.)

☐ Yes ☒ No ☐ Unknown at this time

If checked "Yes" or "unknown at this time", the City Traffic Engineer may request additional queuing analyses to demonstrate that the proposed site plan has been designed to safely accommodate anticipated queuing without interruption of traffic on adjacent public roadways.



CITY OF CASA GRANDE

SCOPING CHECKLIST FOR TRAFFIC IMPACT ANALYSIS

Development Trip Generation

Attach table documenting daily, and peak hour entering, exiting, and total traffic volumes. Include applicable Land Use Code (LUC) from the latest edition of the Institute of Transportation Engineer's Trip Generation Manual and SF/units/employees/etc. assumed for trip generation calculations, or provide a description of alternate trip generation source. Provide trip generation for buildout and all interim phases).

Sample Table Format

Land Use	Size	IT LUC	Daily Trips	AM Peak Hour Trips			PM Peak Hour Trips		
				Enter	Exit	Total	Enter	Exit	Total

Trip Generation Adjustments

Will any reduction in total trip generation be assumed?



N/A



Pass-by trip reduction



Mixed-use trip reduction



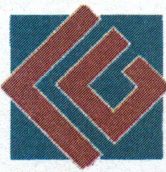
Other

(If other trip reduction is requested – please specify)

If trip reduction is assumed, please specify amount and justification:

What percentage of the development traffic will be attributable to large vehicles (trucks, buses)?

Not more than 15%. Trip generation calculations are provided as Attachment B.



CITY OF CASA GRANDE

SCOPING CHECKLIST FOR TRAFFIC IMPACT ANALYSIS

SCOPE OF STUDY

Proposed Study Area (attach map or provide list of relevant intersections to be included in the analysis based on the requirements found in Table 9-2)

Access to the site will be via a new "half-street" extension of Bianco Road north of the Minneapolis Road alignment that will terminate at a site driveway between the two industrial park areas. The driveway will extend easterly between the industrial park areas to serve the contractor storage yard. CivTech notes that there are no paved roads in the area, that pavement on Bianco Road ends at its intersection with Clayton Road, 1½ miles to the south. The intersection of Bianco Road and the site access driveway will be included in the study area.

Proposed Study Horizons (based on the requirements found in Table 9-2)

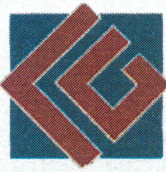
Based on the requirements, the evaluation of the opening year (2025) is required.

Table 9-2. Casa Grande TIA Study Area Requirements

Ultimate Development Characteristics	Study Horizons ^(a)	Minimum Study Area On City Road(s) ^(b)
Small Development (100 - 500 peak hour trips)	Opening year	Site access drives Adjacent signalized intersections and/or major unsignalized street intersections within ¼ mile
Moderate, single phase (>500- 1,000 peak hour trips)	Opening year 5 years after opening	Site access drives All signalized intersections and/or major unsignalized street intersections within ½ mile
Large, single phase (> 1,000 peak hour trips)	Opening year 5 years after opening 10 years after opening	Site access drives All signalized intersections and/or major unsignalized street intersections within one mile
Multi-phased Development (>500 peak hour trips)	Opening year Interim phase years Full buildout 10 years after full buildout	Site access drives All signalized intersections and major unsignalized street intersections within 3 miles

(a) Assume full occupancy and build-out.

(b) An enlarged study area may be required for certain projects.



CITY OF CASA GRANDE

SCOPING CHECKLIST FOR TRAFFIC IMPACT ANALYSIS

DATA SOURCES AND KEY ASSUMPTIONS

Source of Existing Traffic Volumes (cite source if using available traffic data or proposed dates of new data collection)

N/A

Proposed Future Background Growth Rate and Source

Proposed Annual Growth Rate: N/A

Source:



N/A



Historical Traffic Data



MAG Travel Demand Model



Other

(If other peak – please specify)

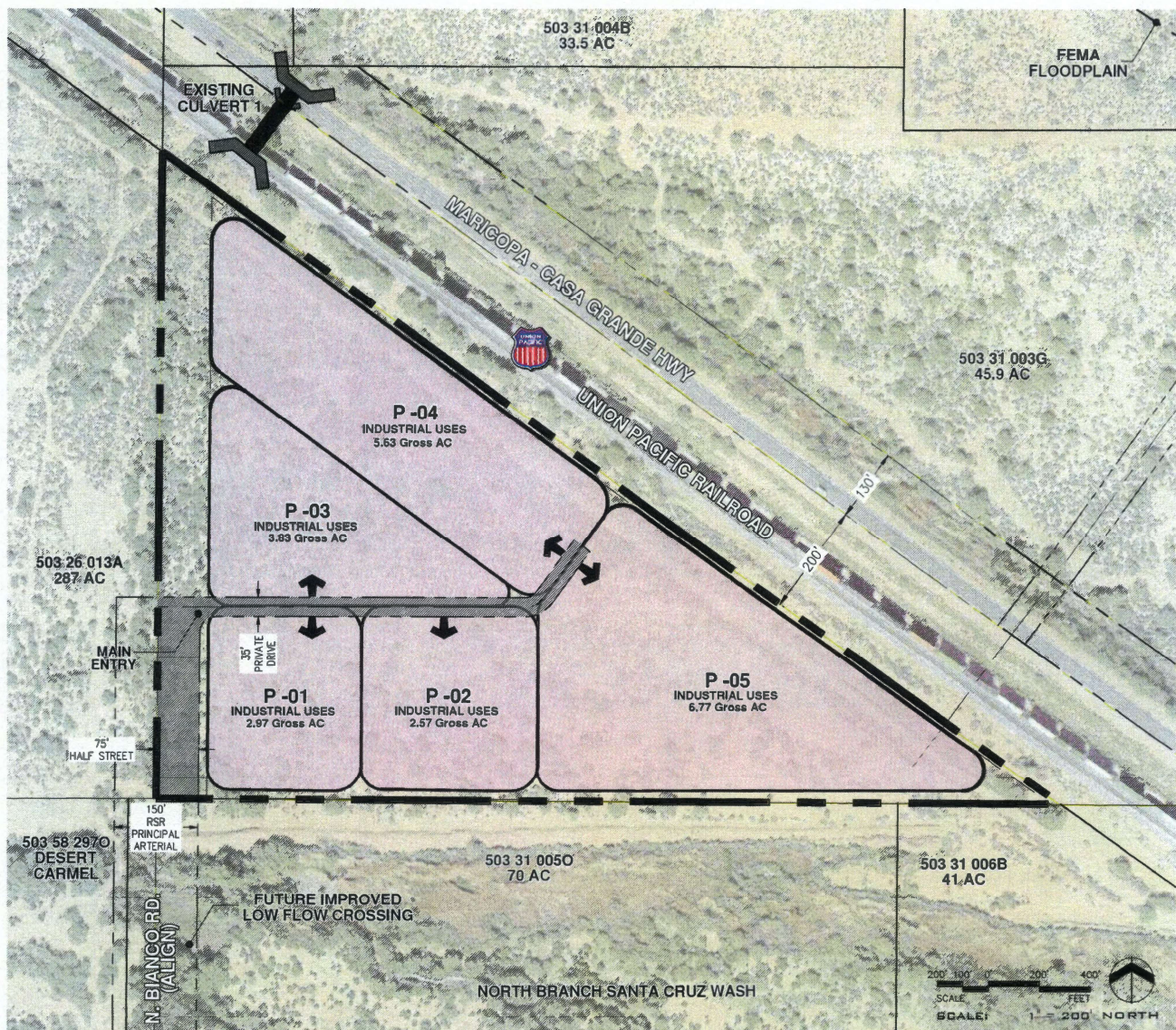
Other Known Developments (to be considered in addition to annual background growth)

CivTech expects the City is much more aware of such planned and/or approved developments and will provide CivTech the names, the natures of the developments, the improvements to the roadway network each is expected to make, and any background traffic information needed for the traffic study of the subject development.

Planned/Programmed Improvements (improvements by others assumed to be in place prior to opening of proposed development)

As noted above, beyond any publicly-financed improvements CivTech may identify in its review of the City's Capital Improvement Program (CIP), the City is likely much more aware of improvements by other developments in the area (or of public improvements expected beyond the typical five years of the City's CIP). CivTech welcomes the City's assistance in providing this information.

SUB1_Site Plan, Legal Description, Plat Map



PROJECT DATA

PROJECT	INDUSTRIAL PARK
JURISDICTION	PINAL COUNTY (CASA GRANDE PLANNING AREA)
LOCATION	SEC OF W. MARICOPA - CASA GRANDE HWY, & N. BIANCO RD. CASA GRANDE, AZ
APN	503 31 003B
GROSS SITE AREA	21.77Ac. (948,372.4 SQ. FT.)
PINAL COUNTY COMPREHENSIVE PLAN	EMPLOYMENT
PINAL COUNTY GROWTH AREA	WEST PINAL GROWTH AREA
CASA GRANDE 2030 GENERAL PLAN DESIGNATION	MANUFACTURING / INDUSTRY
ZONING	
EXISTING	GR (GENERAL RURAL)
PROPOSED	I-3 (INDUSTRIAL)
SETBACKS	
FRONT	15' (EXCEPT AS PROVIDED IN PCDSC 2.105.030)
SIDE	NONE
REAR	10' (EXCEPT AS PROVIDED IN PCDSC 2.105.030)
RES. ADJ.	10' (SEE PCDSC 2.105.030)
MAX. BLDG. HEIGHT	35'
REGIONALLY SIGNIFICANT ROUTES	RSR PRINCIPAL ARTERIALS N. BIANCO RD. MARICOPA - CASA GRANDE HWY.

UTILITY TABLE

UTILITY	PROVIDER
WATER	AZ WATER
SEWER	SEPTIC
ELECTRIC	TBD

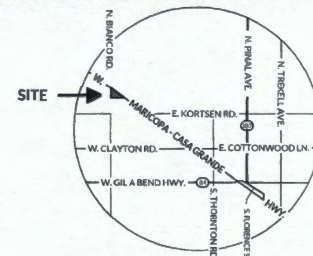
LEGEND

■■■■■ PROPERTY BOUNDARY

NOTES:

- STRUCTURES: VACANT LAND WITH NO EXISTING OR PROPOSED STRUCTURES.
- ACCESS: PROPOSED ACCESS (MAIN ENTRY) WILL BE PROVIDED FROM N. BIANCO RD. THROUGH THE CASA GRANDE MANUFACTURING / INDUSTRIAL AREA. NO ACCESS IS PROPOSED FROM THE MARICOPA - CASA GRANDE HWY.
- LANDSCAPING: EXISTING VEGETATION TO REMAIN TO EXTENT POSSIBLE. FUTURE PROPOSED SITE DEVELOPMENTS WILL ADHERE TO LANDSCAPING REQUIREMENTS.
- WALLS, FENCES, & SIGNS: TYPE, HEIGHT, AND MATERIALS FOR FUTURE PROPOSED WALLS, FENCES, AND SIGNS WILL COMPLY WITH ALL CODES, APPROPRIATE PROCESSES, AND BE COMPLETED IN A QUALITY AND PROFESSIONAL MANNER.
- PARKING: FUTURE PROPOSED PARKING WILL COMPLY ZONING ORDINANCE PARKING STANDARDS PER USE TYPE.
- SETBACKS: SETBACKS WILL COMPLY WITH APPROVED CI-2 ZONING ORDINANCE.

VICINITY MAP



LEGAL DESCRIPTION

THAT PART OF THE SOUTHWEST QUARTER OF THE NORTHWEST QUARTER OF SECTION 10, TOWNSHIP 6 SOUTH, RANGE 5 EAST OF THE GILA AND SALT RIVER BASE AND MERIDIAN, PINAL COUNTY, ARIZONA, WHICH LIES SOUTHWESTERLY OF THE SOUTHERN PACIFIC RAILROAD.

APPLICANT

IFIDA AZ LAND PARTNERS LLC
DAN CARLESS
(718) 505 - 4805
DANC@CORONADOREALTYADVISORS.COM



W. MARICOPA - CASA GRANDE HWY. & N. BIANCO RD. INDUSTRIAL PARK CASA GRANDE, ARIZONA CONCEPTUAL SITE PLAN

2084 (11x17) AUGUST 2, 2023
HILGARTWILSON
ENGINEER | PLANNING | SURVEY | MANAGE
This plan is conceptual and subject to change through the planning and development process.



First American Title

Exhibit A

ISSUED BY

First American Title Insurance Company

File No: 600221654

File No.: 600221654

The Land referred to herein below is situated in the County of Pinal, State of Arizona, and is described as follows:

THAT PART OF THE SOUTHWEST QUARTER OF THE NORTHWEST QUARTER OF SECTION 10, TOWNSHIP 6 SOUTH, RANGE 5 EAST OF THE GILA AND SALT RIVER BASE AND MERIDIAN, PINAL COUNTY, ARIZONA, WHICH LIES SOUTHWESTERLY OF THE SOUTHERN PACIFIC RAILROAD.

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SUB1_Drainage Report