INTEGRATED ENGINEERING GROUP
TRANSPORTATION PLANNING AND ENGINEERING

Recommended approval- 12/15/22
Justin P. Schlaefli, PE TE
City of Rialto- Contract Traffic Engineer

Date: September 17, 2022

To: Daniel Rosas, Associate Planner, City of Rialto

From: George Ghossain, Principal Engineer, Integrated Engineering Group

Subject: Trip Generation Assessment for Acosta Townhomes Project, City of Rialto

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Integrated Engineering Group (IEG) is pleased to submit this trip generation assessment memorandum (memo) for the Acosta Townhomes Project located at 345 N. Cactus Avenue, approximately 400 feet south of Foothill Boulevard and approximately 160 feet north of Holiday Place in the City of Rialto, California. This memo has been prepared per the City of Rialto Traffic Impact Analysis Guidelines for Vehicle Miles Traveled and Level of Service (LOS) Assessment (Guidelines, May 2021).

PROJECT DESCRIPTION

This project is proposing the construction of 26 multi-family housing (low-rise) units (including 5 accessory dwelling units) with on-site amenities on a vacant 1.67-acre parcel. It is anticipated that the proposed development will be built in one phase with vehicular access provided via one (1) driveway along Cactus Avenue. The proposed development will be required to provide on-site parking spaces consistent with City of Rialto parking requirements. The project site plan is shown in **Attachment 1**.

TRAFFIC ANALYSIS SCREENING

TRIP GENERATION

Trip generation is a measure or forecast of the number of trips that begin or end at the project site. The traffic generated is a function of the extent and type of development proposed for the site. These trips will result in some traffic increases on the streets where they occur. Per the Draft Guidelines, trip generation for proposed uses must be calculated based on rates from the *Trip Generation Manual, 11th Edition*, published by the Institute of Transportation Engineers (ITE), to determine if this project satisfies the thresholds to be exempt from preparing a TIA. Project ITE average trip generation rates and trip calculations summary are presented in **Table 1** and **Table 2**, respectively.

Table 1 – Project Trip Generation Rates

Land Use[1]	Units[2]	ITE LU Code	AM Peak Hour			PM Peak Hour			Daily
			In	Out	Total	In	Out	Total	
Multi-family Housing (Low Rise)	DU	220	0.10	0.30	0.40	0.32	0.19	0.51	6.74

[1] Trip Generation Source: Institute of Transportation Engineers (ITE), Trip Generation Manual, Eleventh Edition (2021).
[2] DU = Dwelling Unit

Table 2 – Project Trip Generation Summary

Land Use[1]	Intensity	Units[2]	AM Peak Hour			PM Peak Hour			Daily
			In	Out	Total	In	Out	Total	
Multi-family Housing (Low Rise)	26	DU	2	8	10	8	5	13	175
		Total	***2***	***8***	***10***	***8***	***5***	***13***	***175***

[1] Trip Generation Source: Institute of Transportation Engineers (ITE), Trip Generation Manual, Eleventh Edition (2021).
[2] DU = Dwelling Units

Table 2 summarizes the trip generation calculation based on the dwelling unit intensityassociated with the proposed Project. As shown, the proposed project is estimated to generate approximately 175 daily trips, 10 AM peak hour trips and 13 PM peak hour trips.

EXEMPTION ASSESSMENT

Per the City Guidelines, a multi-family project of 50 units or less or a project generating less than 50 vehicle trips during peak hours may be exempt from preparing a TIA. Based on the project trip generation calculation shown in **Table 2**, the proposed project is well below the 50 units and 50 vehicle peak hour trips thresholds. Therefore, the project will be exempt from preparing a TIA.

FOOTHILL BOULEVARD SPECIFIC PLAN COMPLIANCE

The project is within the Foothill Boulevard Specific Plan (FBSP, May 2010) area as identified in the City of Rialto General Plan (December 2010). Per the FBSP (shown in **Attachment 2**), the project site is designated as Commercial Mixed Use (C-MU). Per the FBSP Mitigated Negative Declaration (MND, May 2010) Table i-2, the projected average residential density for the CMU area was 12 DU/acre and the projected average floor area ratio (FAR) is 0.25. Additionally, fifty (50) percent of the CMU floor area was projected to be developed as residential. Based on these projections and per the information provided in **Table 3**, the projected residential and commercial uses for the 1.67-acre project site under the FBSP are 20 DUs and 9,093 sf commercial space.

Table 3 – FBSP Projected Land Use Amount

Lot Size (acre)	FAR	Allowable Gross Floor Area (GFA, sf)	Commercial GFA (sf)	Residential Density (DU/acre)	Projected Dwelling Units
1.67	0.25	18,186	9,093	12	20

Projected ITE land use average trip generation rates are presented in **Table 4** and a trip calculation comparison between the proposed use and FBSP projected land uses is presented in **Table 5**.

Table 4 – FBSP Projected Land Use Trip Generation Rates

Land Use[1]	Units[2]	ITE LU Code	AM Peak Hour			PM Peak Hour			Daily
			In	Out	Total	In	Out	Total	
Multi-family Housing (Low Rise)	DU	220	0.10	0.30	0.40	0.32	0.19	0.51	6.74
Strip Retail Plaza (<40 TSF)	TSF	822	4.42	0.94	2.36	3.30	3.30	6.59	54.45

[1]Trip Generation Source: Institute of Transportation Engineers (ITE), Trip Generation Manual, Eleventh Edition (2021).
[2]DU = Dwelling Unit; TSF = Thousand Square Feet

Per ITE TGM, LU 822 Shopping Retail Plaza (<40tsf) typically contains commercial retail uses. Additionally per ITE Trip Generation Handbook, 3rd Edition (TGH, September 2017), if a shopping plaza is part of a mixed-use development with a significantly different land use type such as residential, internal capture can be applied.

Internal capture rates were appropriately calculated based on the procedure presented in NCHRP Report 684, as recommend in the ITE TGH for retail and restaurant uses. This procedure provides AM in, AM out, PM in and PM out internal capture rates for these uses. Internal capture rates for daily trips are not provided and were calculated based on the total PM internal capture trip reduction compared to the unadjusted total PM project trips. Internal capture rate calculations and excerpts from ITE TGM and TGH are included in **Attachment 3**.

Table 5 – Proposed vs FBSP Projected Land Use Trip Generation Summary

Land Use	Intensity	Units[1]	AM Peak Hour			PM Peak Hour			Daily
			In	Out	Total	In	Out	Total	
Proposed Uses									
Multifamily Housing (Low Rise)	26	DU	2	8	10	8	5	13	175
Proposed Total			***2***	***8***	***10***	***8***	***5***	***13***	***175***
Foothill Boulevard Specific Plan Projected Uses									
Multifamily Housing (Low Rise)	20	DU	2	6	8	6	4	10	135
Internal Capture (50% - PM In, 50% - PM Out, 50% - Daily)[3]			0	0	0	3	2	5	68
Subtotal			*2*	*6*	*8*	*3*	*2*	*5*	*67*
Strip Retail Plaza (<40 tsf)	9.093	TSF	28	19	47	66	66	132	1089
Internal Capture (3% - PM In, 5% - PM Out, 4% - Daily)[3]			0	0	0	2	3	5	44
Subtotal			*28*	*19*	*47*	*64*	*63*	*127*	*1,045*
Projected Total			***30***	***25***	***55***	***67***	***65***	***132***	***1112***
Net Change			***-28***	***-17***	***-45***	***-59***	***-60***	***-119***	***-937***

[1]Trip Generation Source: Institute of Transportation Engineers (ITE), Trip Generation Manual, Eleventh Edition (2021).
[2]DU = Dwelling Unit; TSF = Thousand Square Feet
[3]Internal Capture percentage is based on NCHRP Report 684, as recommended in the ITE Trip Generation Handbook, 3rd Edition.

As shown in **Table 5**, the proposed 26 dwelling units are expected to generate 937 less daily trips, 45 less AM peak hour trips and 119 less PM peak hour trips than the uses projected for the site in the FBSP MND.

SIGNIFICANCE DETERMINATION

The project has demonstrated consistency with the adopted FBSP MND including transportation analysis.

PROJECT TRIP DISTRIBUTION AND ASSIGNMENT

Trip distribution and assignment is the process of identifying the probable destinations, directions and traffic routes that Project related traffic will likely affect. Trip distribution and assignment are not applicable in this case since this memo has demonstrated, per the City of Rialto Guidelines, that the project trip generation will be less than 50 vehicles during the peak hours; therefore, a full traffic impact analysis will not be required.

Intersection & roadway segment Capacity Analyses

Intersection and roadway capacity analyses are not applicable in this case since this memo has demonstrated, per the City of Rialto Guidelines, that the project trip generation will be less than 50 vehicles during the peak hours; therefore, a full traffic impact analysis will not be required.

Project Access

Access to the Project site will be provided via one full access driveway along Cactus Avenue.

Sight Distance

The project, as designed, provides a clear sight distance at the proposed driveway along Cactus Avenue with visibility triangles free of visual obstructions. Refer to **Attachment 4**. Project will be conditioned to ensure that no obstructions visual or otherwise will be constructed within the visibility area/sight distance of the proposed driveway.

Public Improvements

Project will be conditioned to dedicate the appropriate right-of-way (ROW) needed for the future construction of Cactus Avenue corridor to its Major Arterial ultimate roadway classification per the City of Rialto Circulation Element. **Attachment 5** shows existing and proposed Cactus Avenue. Currently Cactus Avenue existing half width improvement along the project frontage consists of 50-foot-wide center line to property line distance including 36-foot center line to curb line distance and 14-foot parkway with curb, gutter and 6-foot-wide sidewalk. The project will be dedicating 10 additional feet along Cactus Avenue to provide the required 60-foot center line to property line distance consistent with the City of Rialto General Circulation Element requirement for a Major Arterial roadway classification. Active transportation network will be expanded in the future to include bicycle facilities once the appropriate ROW is acquired along the entire length of the Cactus Avenue corridor. Refer to **Attachment 6** for excerpts from the City of Rialto General Plan including circulation element, major arterial roadway cross-section and bicycle routes.

Parking

The proposed development will be required to provide on-site parking spaces consistent with City of Rialto parking requirements.

INTEGRATED ENGINEERING GROUP
TRANSPORTATION PLANNING AND ENGINEERING

Conclusion

The proposed Project is located within the City of Rialto and consists of 26 multi-family housing (low-rise) units (including 5 accessory dwelling units) with on-site amenities on a vacant 1.67-acre parcel. It is determined that the proposed project is consistent with the previously adopted FBSP MND and qualifies for an exemption from conducting a detailed traffic impact analysis based on the traffic assessment and technical information provided in this memo. It is our recommendation that a full TIA should not be required based on the technical information provided in this memorandum.

If you have any questions or concerns, please feel free to contact George Ghossain at:

Email: george@intenggroup.com
Phone: (951) 833-3105
Address: 23905 Clinton Keith Road 114-280
Wildomar CA, 92595

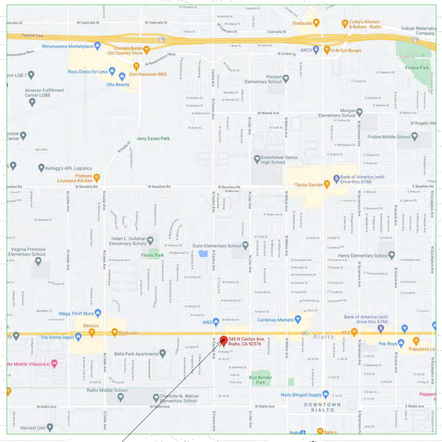
Attachments:
1 – Project Site Plan
2 – Foothill Boulevard Specific Plan Mitigated Negative Declaration Excerpts
3 – ITE TGM & TGH Excerpts and Internal Capture Rate Calculations
4 – Landscape Plan/Line of Sight
5 – Cactus Avenue Existing & Proposed Roadway Configuration
6 – City of Rialto General Plan excerpts

Attachment 1 - Site Plan

Proposed Evergreen Townhomes By:

George Becerra & Fernando Acosta

345 N. Cactus Avenue, Rialto, CA 92376

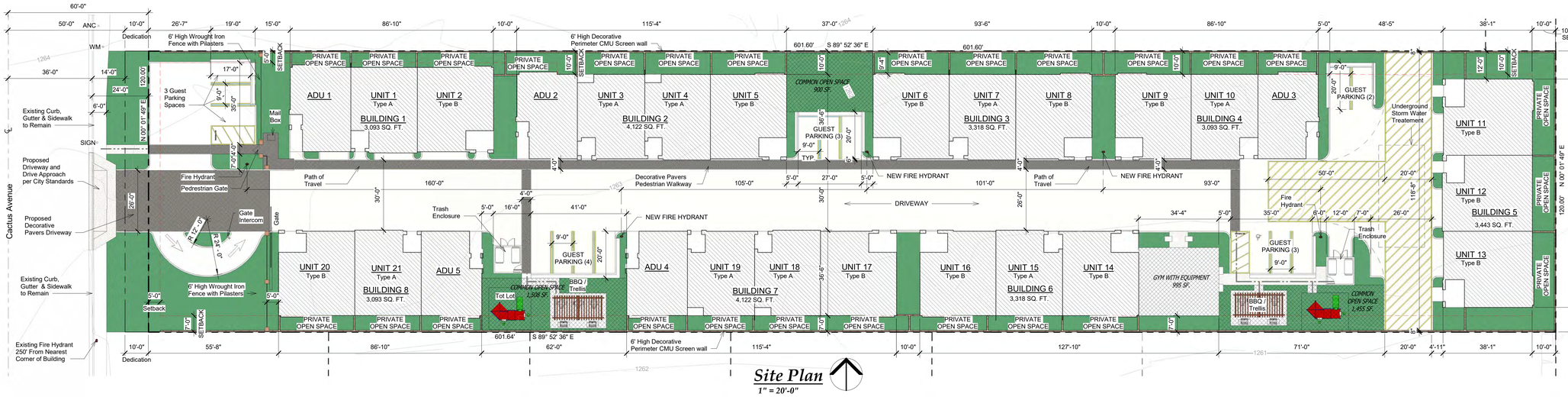


Vicinity Map

3D View

ANDRESEN ARCHITECTURE INC.
17087 ORANGE WAY, FONTANA, CA 92335 (909) 355-6688

OWNER:	GEORGE C BECERRA
CONTACT:	FERNANDO ACOSTA (714) 307-8018 Facosta123@aol.com
PROJECT ADDRESS:	345 N. CACTUS AVENUE, RIALTO, CA 92376
ARCHITECT:	ANDRESEN ARCHITECTURE INC. 17087 ORANGE WAY FONTANA, CA 92335
CONTACT:	(909) 355-6688 doug.andresen@aaifirm.com
CIVIL:	SAKE ENGINEERS, INC 400 S. RAMONA AVE., STE. 202 CORONA, CA 92879
CONTACT:	SAM AKBARPOUR (951) 279-4041 sam@sakeengineers.com
SOILS:	RODRIGUEZ CONSULTING AND ENGINEERING
CONTACT:	(909) 277-3986 rodriguezconsultingengineering@yahoo.com
LANDSCAPING:	LANDSCAPE DYNAMICS
CONTACT:	(951) 264-4839 gregzoll@landscapedynamics.net
APN:	0130-013-02
ZONING:	**EXISTING** - COMMERCIAL MIXED USE (C-MU) **PROPOSED** - R-4 HIGH DENSITY MULTIPLE FAMILY SPECIFIC PLAN RESIDENTIAL HIGH DENSITY (R-HD)
OCCUPANCY:	GROUP R-3
CONSTRUCTION:	TYPE V-B
FIRE SPRINKLERS:	REQUIRED
PROJECT DESCRIPTION:	PROPOSED GATED COMMUNITY (SINGLE-OWNERSHIP) WITH 21 TOWNHOMES, 8 BUILDINGS, 2-STORY, 3 & 4 BEDROOMS) WITH 2-CAR TUCK-UNDER GARAGES AND BALCONIES ABOVE, 5 ADU UNITS WITH 1-CAR TUCK-UNDER GARAGES, SITE AMMENITIES, COMMON AND PRIVATE OPEN SPACES, GUEST PARKING, TRASH ENCLOSURES AND SITE LIGHTING.
GROSS AREA SIZE:	72,745 SF. (1.67 AC.)
MAXIMUM DENSITY ALLOWED:	1 TO 2 ACRES: 13 DWELLING UNIT / ACRE 1.67 x 13 = 21 UNITS MAX.
UNITS PROPOSED:	**21 UNITS + 5 ADUS**
MAXIMUM BLDG. COVERAGE ALLOWED:	60% OF LOT AREA
BLDG. COVERAGE:	31,100 SF. (42%) < 60% ALLOWED
MAXIMUM HEIGHT:	6 STORIES OR 75'-0"



Site Plan

1" = 20'-0"

BUILDING FOOTPRINT:	27,602 SQ. FT. (38%) (60% ALLOWED)
NET LOT SIZE:	45,143 SQ. FT. (100%)
LANDSCAPE AREA:	18,564 SQ. FT. (41%)
HARDSCAPE AREA:	26,579 SQ. FT. (59%)

PARKING:

2 SPACES REQ./UNIT (21 X 2) REQUIRED	42 SPACES
1 GUEST PARKING REQ./4 UNITS:	6 SPACES
TOTAL	**48 SPACES REQUIRED**
2 GARAGE SPACES / UNIT PROVIDED	42 SPACES
1 GARAGE SPACES / ADU PROVIDED	5 SPACES
GUEST SPACES PROVIDED (BEHIND GATES)	12 SPACES
GUEST SPACES PROVIDED (OUTSISDE GATES)	3 SPACES
TOTAL	**62 SPACES PROVIDED**

PRIVATE OPEN SPACE REQ.	100 SF/ UNIT (6' MIN. DIM.)
PRIVATE OPEN SPACE PROV.	175 SF MIN.
AMENITIES REQUIRED:	5 MINOR AMENITIES
AMENITIES PROVIDED:	5 - (2 BBQ AREAS WITH TRELLIS AND PICNIC TABLES, 1 TOT LOT, 1 COMMON OPEN SPACE (GRASS AREA) AND 1 GYM WITH EQUIPMENT)

9 TYPE A UNITS

TYPE A AREA: (3 BED, 2 1/2 BATH) -	1,585 SF
1ST FLOOR	596 SF
2ND FLOOR	989 SF
GARAGE -	415 SF

12 TYPE B UNITS

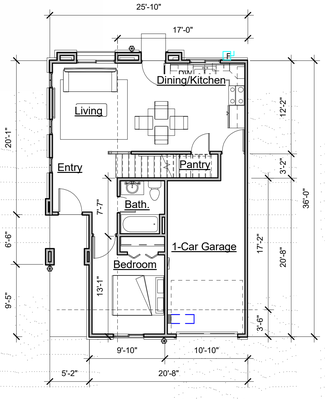
TYPE B AREA: (4 BED, 2 1/2 BATH) -	1,830 SF
1ST FLOOR	596 SF
2ND FLOOR	1,128 SF
GARAGE -	415 SF

5 ADU UNITS

ADU AREA: (3 BED, 3 BATH) -	1,200 SF
1ST FLOOR	662 SF
2ND FLOOR	538 SF
GARAGE -	237 SF

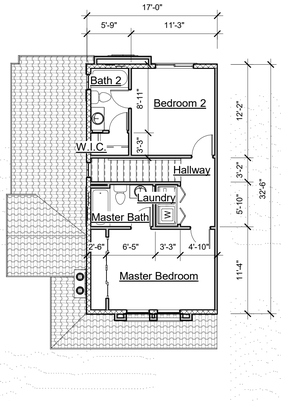
Sequence of Drawings - DR

Number	*Description*
PL1	Site Plan
PL2	Floor Plans & Elev's- Bldg. 1,4,8
PL3	Floor Plans & Elev's- Bldg. 2,7
PL4	Floor Plans & Elev's- Bldg. 3
PL5	Floor Plans & Elev's- Bldg. 5
PL6	Floor Plans & Elev's- Bldg. 6
1 of 2	Conceptual Grading Plan
2 of 2	Conceptual Grading Plan
1 of 1	Preliminary Landscape Plan



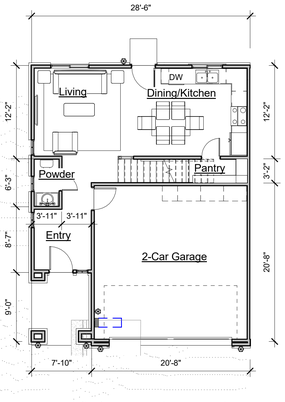
ADU - First Floor Plan

1/8" = 1'-0"



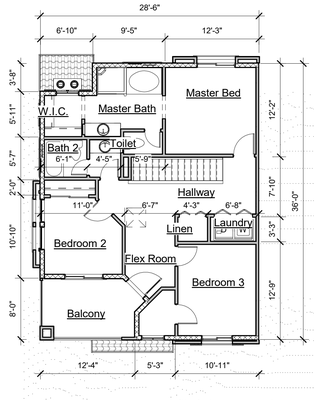
ADU - Second Floor Plan

1/8" = 1'-0"



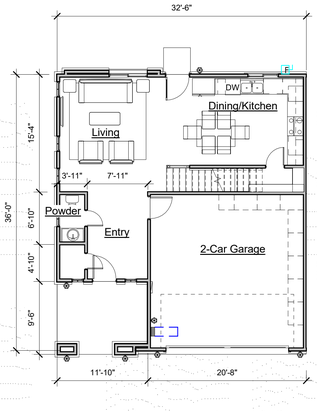
Type A - First Floor Plan

1/8" = 1'-0"



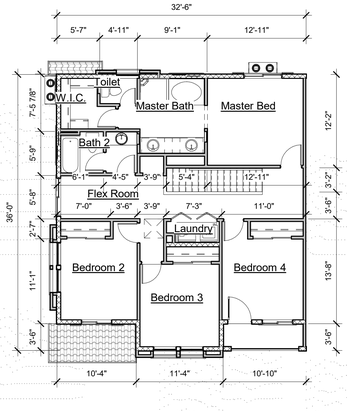
Type A - Second Floor Plan

1/8" = 1'-0"



Type B - First Floor Plan

1/8" = 1'-0"



Type B - Second Floor Plan

1/8" = 1'-0"

Proposed Evergreen Townhomes By:

George Becerra & Fernando Acosta

345 N. Cactus Avenue, Rialto, CA 92376

14 Sep. 2022

21-4100

LICENSED ARCHITECT Douglas Andresen C-14504 12-31-23 RENEWAL DATE STATE OF CALIFORNIA

Site Plan

PL1

Attachment 2 - Foothill Boulevard Specific Plan Mitigated Negative Declaration Excerpts

Boulevard. The center median is planned to be a raised median that will divide traffic and allow turning movements at a few locations (see Exhibit C, Median Breaks, Gateways, and Wayfinding Signs). Gateways will be located within the center medians or public right-of-ways to identify entrances to the City. Wayfinding signs will be located in the center median to direct vehicles to City locations, such as City Hall or Riverside Drive.

Chapter 5- Infrastructure
The City of Rialto General Plan identifies Foothill Boulevard as a Major Arterial, with an ultimate right of way of 110-feet and a width of 96-feet curb face to curb face. The Specific Plan does not require additional right of way be dedicated or constructed beyond the General Plan standard. The Specific Plan requires applicants to dedicate a five foot landscape easement to the City for new development of vacant properties.

Chapter 6- Implementation
The Specific Plan includes an Implementation Program that provides staff and City decision-makers with the actions and information necessary to effectively implement the vision and goals of the Specific Plan. The Implementation Plan identifies actions, timing, program responsibility, funding sources, and estimated costs.

Chapter 7- Administration
The Administration section identifies the adoption process and explains relevance to other Planning Documents, such as the General Plan and Development Code. This section also provides information for issues such as interpretation, revisions, and modifications.

Chapter 8- Appendices
The appendices include alternative designs that were considered during the Specific Plan process.

Approval Process
Approval of the Specific Plan occurs through adoption by City Council Ordinance, consistent with Development Code Section 18.78.060G- Procedures for Adoption and Amendment of Specific Plans. Upon adoption, the Specific Plan establishes planning guidance for all development and public improvements, and designates permitted land uses and supplemental development standards for the Specific Plan area.

Specific Plan Build-Out
The new designations will allow for increased intensity of residential dwelling units and commercial space within the Foothill Boulevard Specific Plan. The Keyser Marston economic conditions study prepared for the City in 2006 analyzed the existing commercial and residential square footage within the Specific Plan area boundaries. This study was utilized to create Table i-2 (Specific Plan Land Use and Population Projections) and Table i-3 (Existing Planning Area and Population Projections), which provide an estimated total capacity of the Planning area for both the proposed Specific Plan and the Existing General Plan.

Table i-2- Specific Plan Land Use and Population Projections

Land Use Legend	Acreage	Density	Projected Average DU/Ac[4]	Total Dwelling Units	Build-out Population[1]	Projected Average F.A.R.[4]	Total Non-Residential Floor Area Sq. Ft.
PC	157.30	No Residential	-	-	-	0.25	1,712,997
CMU	21.01	Up to 24 du/ac	12 [2]	252	630	0.25	228,799
RMU	36.13	Up to 30 du/ac	24	867	2,168	.25 [3]	39,346 [3]
HDR	46.23	Up to 30 du/ac	26	1,202	3,005	-	
Total	260.67	-	-	2,321	5,803	-	**1,981,142**

Notes:

1. *Based upon 2.5 persons per dwelling unit.*
2. *It is anticipated that about fifty percent of the Commercial Mixed Use area will also be developed with vertical residential mixed uses.*
3. *It is anticipated that about ten percent of the Residential Mixed Use will be developed with commercial uses.*
4. *FAR is Floor Area Ratio, the land area divided by the total building feet.*

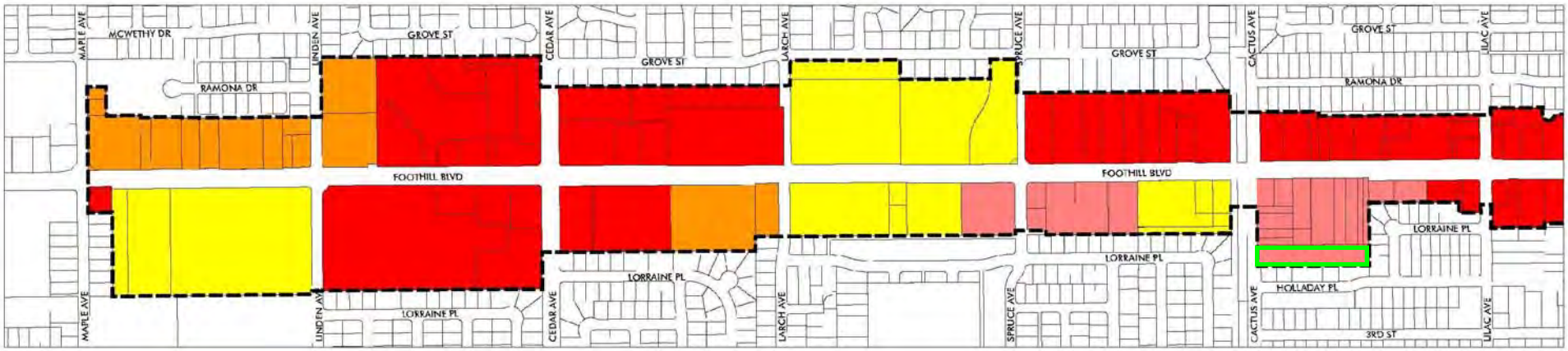
Land Use Legend
PC= Pedestrian CMU= Commercial Mixed Use
RMU= Residential Mixed Use HDR= High Density Residential

There is an estimated potential build-out capacity of 2,321 dwelling units and 1,981,142 square feet of non-residential buildings within the Specific Plan planning area. The existing General Plan projects a build-out capacity in the Specific Plan area of 327 dwelling units and 2,564,596 square feet of non-residential development.

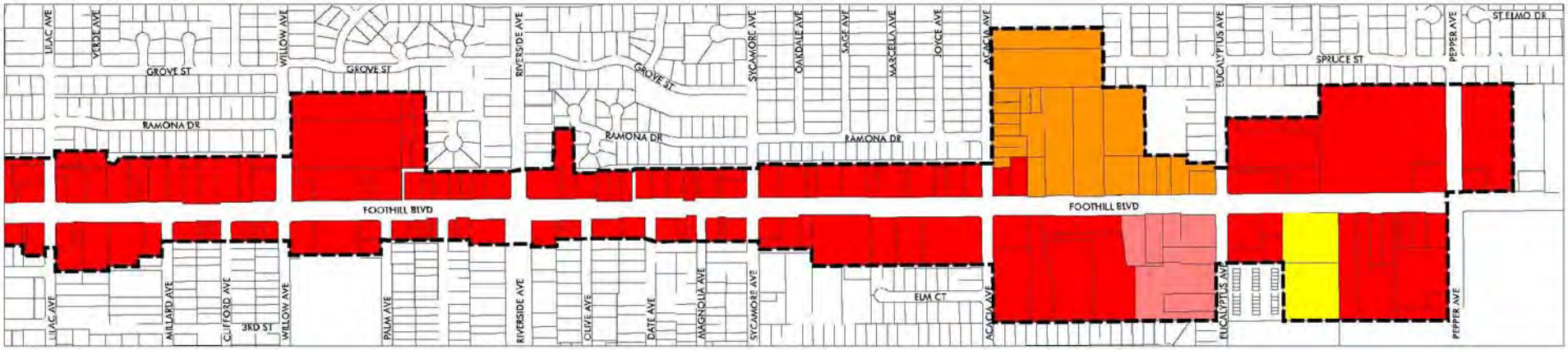
Table i-3- Existing Planning Area and Population Projections

Land Use Legend	Acreage	Density	Projected Average DU/Ac[1]	Total Dwelling Units	Build-out Population[2]	Projected Average F.A.R.[3]	Total Non-Residential Floor Area Sq. Ft.
C-2	98.93	-	-	-	-	0.25	1,077,348
C-3	128.34	-	-	-	-	0.25	1,397,623
H-C	8.23	-	-	-	-	0.25	89,625
R-3	17.18	16	14	241	603		
MHD	5.2	16	14	73	183		
R-1C	3.25	3-6 du/ac	3.9	13	41		
Total	260.03	-	-	327	827		**2,564,596**

WEST BOUNDARY



EAST BOUNDARY



LEGEND

- Residential
- Residential - Mixed Use
- Commercial - Mixed Use
- Commercial - Pedestrian
- Specific Plan Boundary

Exhibit B
Specific Plan Corridor

Source: San Bernardino County, GIS 2008
0 250 500 750 1,000 Feet

XVI. **TRANSPORTATION/TRAFFIC** -- Would the project:				
	Potentially Significant Impact	**Less Than Significant with Mitigation Incorporation**	**Less Than Significant Impact**	**No Impact**
a) Conflict with an applicable plan, ordinance or policy establishing measures of effectiveness for the performance of the circulation system, taking into account all modes of transportation including mass transit and non-motorized travel and relevant components of the circulation system, including but not limited to intersections, streets, highways and freeways, pedestrian and bicycle paths, and mass transit?			×	
b) Conflict with an applicable congestion management program, including, but not limited to level of service standards and travel demand measures, or other standards established by the county congestion management agency for designated roads or highways?			×	
c) Result in a change in air traffic patterns, including either an increase in traffic levels or a change in location that result in substantial safety risks?				×
d) Substantially increase hazards due to a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?			×	
e) Result in inadequate emergency access?				×

f) Conflict with adopted policies, plans, or programs regarding public transit, bicycle, or pedestrian facilities, or otherwise decrease the performance or safety of such facilities?				×

a) The Specific Plan is an implementation mechanism for the City's General Plan and has been considered in the preparation of the City's General Plan update. The Specific Plan includes improvements such as medians and gateway structures, all within the ultimate right-of-way identified in the General Plan. The Specific Plan encourages alternative methods of transportation, such as walking, bicycling, and mass transit.

The Specific Plan proposes new development standards that will result in a potential increase of 368,651 square feet of commercial development and up to 946 residential development units; thereby resulting in population and employment growth that could increase traffic volumes in the area. As part of the General Plan update effort, a city-wide traffic study was prepared in March 2009. According to the traffic study, the current average annual daily traffic (AADT) on Foothill Boulevard is approximately 29,000 vehicles, as summarized in Table 3 (Existing and Future Daily Traffic Volumes and Service Levels). Based on the land use and circulation changes proposed in the General Plan update, anticipated AADT levels along Foothill Boulevard are 31,067 at the highest volumes (Table XVI-1 Existing and Future Daily Traffic Volumes and Service Level).

Foothill Boulevard is currently a four lane major arterial. The proposed General Plan update and the Specific Plan identify Foothill Boulevard as a 6-lane, major arterial highway. As indicated in Table XVI-1, this roadway classification will accommodate future traffic volumes in a manner that will result in a Level of Service (LOS) C. This service level is generally descriptive of 'stable traffic flows' and meets the City's LOS minimum performance standard of D. Considering projected traffic volumes on Foothill Boulevard and the roadway's proposed classification, the project will not conflict with applicable plans establishing measures of effectiveness for the performance of the circulation system, and impacts will be less than significant.

Table XVI-1 Existing and Future Daily Traffic Volumes and Service Level

From	To	2006		2035	
		AADT	LOS	AADT	LOS
Maple	Linden	29,000	D	31,067	C
Linden	Riverside	28,500	D	30,489	C
Riverside	Pepper	29,000	D	28,233	C
Source: Iteris 2009					

b) Foothill Boulevard is part of the County of San Bernardino's Congestion Management Program. The County has established a LOS E standard for Foothill Boulevard. As discussed in Section XVI.a above, Foothill Boulevard it projected to operate at a LOS D and therefore would not exceed the service standard adopted by the County. Impacts will be less than significant.

c) The Rialto Municipal Airport is located northwest of the Specific Plan area, approximately 1.4 miles directly north of the intersection of Maple Avenue and Foothill Boulevard. A portion of the proposed project is located within Safety Zone III, which generally does not restrict land uses and does not have a maximum gross density recommended. Portions of the Specific Plan are within the Horizontal Surface

identified in the Rialto Airport Land Use Plan[10] (ALUP). The minimum notice requirements identified in the ALUP state that structures exceeding an imaginary surface at a slope of 100 to 1 from the nearest point of the runway shall notify the FAA administrator of their intentions. The Specific Plan is within the notice area, however, the maximum permitted building height (75 –feet) is below the allowable height restrictions at the nearest boundary of the Specific Plan (Maple Avenue north of Foothill Boulevard. Therefore, the Specific Plan does not allow any development that could result in a change in air traffic patterns from any airport and no impact will occur.

The closure of the Rialto Airport has been approved by the Executive Office of the United States and the Federal Aviation Administration. Closure will be finalized once all existing commercial businesses are relocated to other areas off of the existing airport grounds.

d) The Specific Plan does make recommendations on future streetscape improvements in the Specific Plan's Implementation Program These recommendations include construction of raised medians and landscaping, gateway features, thematic and wayfinding signage, improved parcel interconnectivity, and a reduction in driveways. The addition of medians is designed to limit site access along the corridor to right-in/right-out only maneuvers, thereby limiting hazardous left-turns and improving traffic safety. The reduction in driveways is also meant to improve traffic safety by limiting the ingress and egress from businesses along the corridor and thereby reducing traffic conflicts. The Specific Plan does not propose any hazardous design features.

   The Specific Plan includes various land use changes meant to increase residential opportunities along the corridor and to create a more pedestrian friendly environment. These land use changes include commercial and residential mixed-use categories. Potential future construction will result in common urban development and would not result in any incompatible uses being established along Foothill Boulevard. No hazard impact related to incompatible uses will occur.

e) Approximately 65 percent of the area within the Specific Plan is occupied by existing land uses including commercial business and residential units. The area is currently served by emergency responders from the Rialto Fire Department. The roadway will not be altered from its current alignment and new roadway improvements will increase safety for vehicles and pedestrians working, shopping, or living in the area. All new median pockets will be designed to facilitate emergency vehicle access, and all driveways to existing or proposed businesses or residential units will use existing design standards so that emergency vehicles can access properties within the Specific Plan boundaries (see the City's adopted Fire Code in Chapter 15.28 of the Municipal Code). Emergency access will not be impacted by the adoption of the Specific Plan.

f) The Specific Plan will not conflict with established policies regarding alternative transportation. The Specific Plan is designed to facilitate existing policies encouraging the use of alternative transportation by providing for the creation of a pedestrian-oriented, mixed-use growth pattern for the Specific Plan area. Foothill Boulevard is a transit corridor served by Omnitrans bus lines and within one mile of the Metrolink mass transit rail line. During peak hours Omnitrans conducts bus operations at 15 minute intervals and a Metrolink rail station is located south of the Specific Plan boundaries on Riverside Avenue and is accessible by existing bus service. By incorporating residential uses with low-intensity commercial uses, the Specific Plan allows local residents to reduce personal vehicle use within the immediate area for everyday goods and services and allows residents the opportunity to have access to commuter service to jobs in the larger overall region. The Specific Plan meets many

City and regional objectives for maintaining or improving Levels of Service and promoting transit oriented development; therefore, no impact will occur.

Attachment 3 - ITE TGM & TGH Excerpts and Internal Capture Rate Calculations

Land Use: 822
Strip Retail Plaza (<40k)

Description

A strip retail plaza is an integrated group of commercial establishments that is planned, developed, owned, and managed as a unit. Each study site in this land use has less than 40,000 square feet of gross leasable area (GLA). Because a strip retail plaza is open-air, the GLA is the same as the gross floor area of the building.

The 40,000 square feet GFA threshold between strip retail plaza and shopping plaza (Land Use 821) was selected based on an examination of the overall shopping center/plaza database. No shopping plaza with a supermarket as its anchor is smaller than 40,000 square feet GLA.

Shopping center (>150k) (Land use 820), shopping plaza (40-150k) (Land Use 821), and factory outlet center (Land Use 823) are related uses.

Additional Data

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 1980s, the 1990s, the 2000s, and the 2010s in Alberta (CAN), California, Delaware, Florida, New Jersey, Ontario (CAN), South Dakota, Vermont, Washington, and Wisconsin.

Source Numbers

304, 358, 423, 428, 437, 507, 715, 728, 936, 960, 961, 974, 1009

Land Use: 821
Shopping Plaza (40-150k)

Description

A shopping plaza is an integrated group of commercial establishments that is planned, developed, owned, and managed as a unit. Each study site in this land use has between 40,000 and 150,000 square feet of gross leasable area (GLA). The term "plaza" in the land use name rather than "center" is simply a means of distinction between the different shopping center size ranges. Various other names are commonly used to categorize a shopping plaza within this size range, depending on its specific size and tenants, such as neighborhood center, community center, and fashion center.

Its major tenant is often a supermarket but many sites are anchored by home improvement, discount, or other stores. A shopping plaza typically contains more than retail merchandising facilities. Office space, a movie theater, restaurants, a post office, banks, a health club, and recreational facilities are common tenants. A shopping plaza is almost always open-air and the GLA is the same as the gross floor area of the building.

The 150,000 square feet GLA threshold value between shopping plaza and shopping center (Land Use 820) is based on an examination of trip generation data. For a shopping plaza that is smaller than the threshold value, the presence or absence of a supermarket within the plaza has a measurable effect on site trip generation. For a shopping center that is larger than the threshold value, the trips generated by its other major tenants mask any effects of the presence or absence of an on-site supermarket.

The 40,000 square feet GFA threshold between shopping plaza and strip retail plaza (Land Use 822) was selected based on an examination of the overall shopping center/plaza database. No shopping plaza with a supermarket as its anchor is smaller than 40,000 square feet GLA.

Shopping center (>150k) (Land Use 820), strip retail plaza (<40k) (Land Use 822), and factory outlet center (Land Use 823) are related uses.

Land Use Subcategory

The presence or absence of a supermarket in a shopping plaza has been determined to have a measurable effect on site trip generation. Therefore, data are presented for two subcategories for this land use: sites with a supermarket anchor and sites without a supermarket.

Additional Data

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/).

6 Trip Generation for Mixed-Use Development

6.1 Background

Most data presented in *Trip Generation Manual* were collected at single-use, free-standing sites. However, development sites with two or more complementary land uses are now much more common and a method to accurately estimate the external trip generation effects of these types of developments is needed. At a development site consisting of two or more land uses, there is potential for interaction among those uses (referred to as "internal capture trips"), particularly where the trip can be made by walking. As a result, the total generation of external trips (that is, those entering and exiting the overall site) may be less than the simple sum of the trips generated by each discrete land use.

The recommended methodology is the same recommended procedure presented in NCHRP Report 684*: Enhancing Internal Trip Capture Estimation for Mixed-Use Developments.*[7] The NCHRP report provides details on the development of the recommended estimation procedure, its underlying data, and validation of the estimation procedure. The report includes a summary of past research on trip generation and internal trip capture at mixed-use developments, as well as a discussion of other estimation methods that may be appropriate for the analyst to consider.

The recommended approach conforms to the Chapter 3 flow chart for estimation of site trip generation (see Figure 3.1):

- The baseline vehicle trip generation estimates are produced using the procedures presented in Chapters 4 and 9, as appropriate;
- Vehicle trip estimates are converted to person trips using methods presented in Chapter 5;
- The product of the process recommended in this chapter is an estimate of the total person trips entering or exiting the study site, after trips internal to the site (by walking, bicycle, transit, or personal passenger vehicle) are subtracted from total person trips generated by the study site;
- If the mixed-use site is located in an urban infill setting or near a rail transit station or a multi-route bus transit center with high-frequency service, the procedures presented in Chapters 7 and 8 should be applied to the product of the person trip estimates produced in this chapter; and
- Mixed-use development can attract vehicle traffic that is currently on adjacent or nearby streets. Refer to Chapter 10 for guidance on estimating pass-by and diverted trips.

6.2 Definition of Mixed-Use Development

For the purpose of this *Handbook*, a mixed-use development is typically a single real-estate development that consists of land uses corresponding to two or more ITE land use types between which trips can be made without using the off-site road system. A mixed-use development may also be referred to as a multi-use development.

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[7] Bochner, B., K. Hooper, B. Sperry, and R. Dunphy. NCHRP Report 684: *Enhancing Internal Trip Capture Estimation for Mixed-Use Developments.* Washington, DC: Transportation Research Board, 2011.

Because of the complementary nature of these land uses, some trips are made among the on-site uses. This capture of trips internal to the site has the net effect of reducing vehicle trip generation between the overall development site and the external street system (compared to the total number of trips generated by comparable land uses developed individually on stand-alone sites).

Mixed-use developments are commonly found ***ranging in size between 100,000 and 2 million sq. ft. of gross floor area within an overall area of up to roughly 300 acres***. The data presented in this chapter correspond to mixed-use developments in this size range. The recommended procedures for estimating trip generation at mixed-use developments are likely applicable at even larger sites, but the analyst is encouraged to collect and consider additional data.

A key characteristic of a mixed-use development is that trips between the various land uses can be made on site and these ***internal trips do not utilize the major street system***. In some mixed-use developments, these internal trips can be made either by walking or by vehicles using internal roadways without using external streets.

An ***internal capture rate*** can generally be defined as the percentage of total person trips generated by a site that are made entirely within the site. The trip origin, destination, and travel path are all within the site.

The trip reduction for internally captured trips is separate from the reduction for *pass-by trips*. These are two distinct components of trip-making behavior and both could be applicable for a proposed development. The internal trips, if present, should be subtracted *before* pass-by trip reductions are applied (refer to Chapter 10 for a complete discussion of pass-by trip estimation).

6.3 Mixed-Use Development Classified as a Single Land Use

A mixed-use development could consist of any combination of different land use types within a defined, congruous area. But that definition would encompass a wide range of potential applications, many of which are not intended to be the focus of this chapter.

A traditional **downtown or central business district** is ***not*** considered a mixed-use development for the purposes of this *Handbook*. Downtown areas typically have a mixture of diverse employment, retail, residential, commercial, recreation, and hotel uses. Extensive pedestrian interaction occurs because of the scale of the downtown area, ease of access, and proximity of the various uses. Automobile occupancy, particularly during peak commuting hours, is usually higher in the CBD than in outlying areas. Some downtowns have excellent transit service. For these reasons, trip generation characteristics in a downtown environment are different from those found in general urban or suburban areas. Most data presented throughout *Trip Generation Manual* from sites in suburban or outlying business district settings with limited or no transit service and free or inexpensive parking. **Accordingly, trip generation characteristics in this chapter, and specifically in the case of capture rates at mixed-use developments, are directly *applicable only to sites outside the traditional downtown***. Chapter 7 presents a recommended approach for estimating person trips generated in any urban setting including a downtown.

A **shopping center** could also be considered a mixed-use development because it typically includes uses other than general retail such as restaurants, banks, and office. However, because data have

been collected directly for them as a-stand-alone developments, shopping centers are considered in *Trip Generation Manual* as a single land use. The associated trip generation data presented in the *Manual* already reflect the effects of internal capture and the mixed-use nature of the center. ***Accordingly, internal capture rates are not applicable and should not be used to estimate trips for shopping centers if using statistics and data for Land Use Code 820***. However, if the shopping center is part of a larger mixed-use development or if it is planned to have out-parcel development of a significantly different land use type, such as residential, the site could be considered a mixed-use development for the purpose of estimating site trip generation.

A subdivision or planned unit development containing general office buildings and support services such as banks, restaurants, and gasoline service stations arranged in a park- or campus-like atmosphere should be considered an **office park** (Land Use Code 750), not a mixed-use development. An office building with support retail or restaurant facilities contained inside the building should be treated as a **general office building** (Land Use Code 710) because the *Manual* data already reflect such support uses. A **hotel with an on-site restaurant and small retail** falls within Land Use Code 310 and should not be treated as mixed-use development.

6.4 Underlying Assumptions about Internal Capture at a Mixed-Use Site

The internal trip-making characteristics of a mixed-use development site are directly related to its mix of on-site land uses (which are typically a combination of office, retail, restaurant, cinema/entertainment, residential, or hotel). When combined within a single mixed-use development, these land uses tend to interact and thus attract a portion of each other's trip generation. As should be expected, the observed internal capture rates for mixed-use developments vary by time of day, mix of on-site land uses, and size of the development.

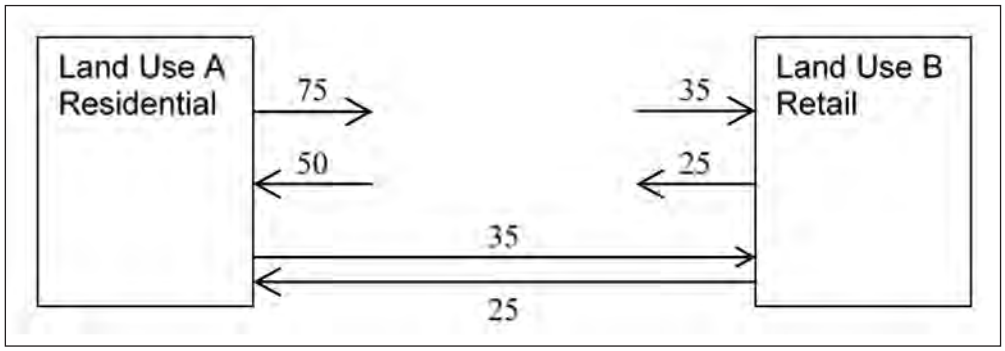
Four premises form the basis for the recommended methodology:

- **Premise 1:** The distribution of trip purposes among persons entering or exiting a development site is relatively stable. In other words, the ratios of commute trips, work trips, and visitor trips to or from an office building is roughly the same whether the building is stand-alone or within a mixed-use development.
- **Premise 2:** The distribution of destination land uses (that is, at the other end of a trip from the development site) is likewise assumed to be relatively stable. For example, the destinations of trips from an office building are distributed among the many potential destinations (such as retail or residential) in roughly the same pattern whether the office is a stand-alone site or in a mixed-use development.
- **Premise 3:** The converse of Premise 2 is also true, that the distribution of origins for trips to a particular land use is assumed to be relatively stable.
- **Premise 4:** The number of trips from a land use within a mixed-use development to another land use within the same mixed-use development (that is, an internal trip) is a function of the size of the "receiving" land use and the number of trips it attracts, as well as the size of the "originating" land use and the number of trips it sends. ***The number of trips between a particular pair of internal land uses is limited to the smaller of these two values.***

Key to the success of this methodology in replicating internal capture patterns at mixed-use sites is its balancing step that constrains internal trip-making to realistic levels given the mix of land uses. Figure

6.1 shows an example of this balancing. Assume Land Use A is a large residential development and Land Use B is a smaller retail component of a mixed-use development. The residential development is large enough to generate 75 peak hour outbound trips that could go to an on-site retail destination, and could attract 50 inbound trips from an on-site retail origin. However, in this particular mixed-use development, the retail portion of the development is only large enough to generate 25 peak hour outbound trips to an on-site residential destination and 35 peak hour inbound trips from an on-site residential origin. Therefore with this particular combination of size and type of land uses, the mixed-use development internally captures a maximum of 35 trips from Land Use A to Land Use B and 25 trips from B to A. The remainder of the potential residential-to-retail on-site trips become external trips.

Figure 6.1 Balanced Internal Trips in Mixed-Use Development Example



Source: Bochner, B., K. Hooper, B. Sperry, and R. Dunphy. NCHRP Report 684: *Enhancing Internal Trip Capture Estimation for Mixed-Use Developments*. Washington, DC: Transportation Research Board, Figure 19, 2011.

6.5 Process for Estimating Mixed-Use Trip Generation

The recommended procedure for estimating internal trip capture and trip generation for a mixed-use development is a series of nine steps:

- Step 1: Determine whether methodology is appropriate for study site.
- Step 2: Estimate person trip generation for individual on-site land uses.
- Step 3: Estimate proximity between on-site land use pairs.
- Step 4: Estimate unconstrained internal person trip capture rates with proximity adjustment.
- Step 5: Estimate unconstrained demand between on-site land use pairs.
- Step 6: Estimate balanced demand between on-site land use pairs.
- Step 7: Estimate total internal person trips between on-site land use pairs.
- Step 8: Estimate total external person trips for each land use.
- Step 9: Calculate overall internal capture and total external vehicle trip generation.

A ***spreadsheet tool*** is available which automatically performs many of the required calculations based on input data. The spreadsheet tool can be downloaded from within the Other Resources link in the Trip and Parking Generation section of the ITE website (www.ite.org/tripgeneration/index.asp).

If using the spreadsheet tool, the analyst needs to complete Steps 1 through 3. The estimation tool automatically calculates overall internal capture and total external vehicle trips in Steps 4 through 8 and summarizes the results. The complete step-by-step procedure is provided here

if the analyst chooses to do the calculations manually (if the analyst, for example, is using local data to supplement the national database). Appendix F contains an example application of the recommended process.

The step-by-step procedure and spreadsheet contain data that enable the analyst to evaluate internal capture at a mixed-use site with any combination of office, retail, restaurant, cinema/ entertainment, residential, and hotel land uses. Because data are not currently available for other land use categories, internal capture to and from those uses is assumed to be zero in the spreadsheet tool.

The analyst is cautioned that each mixed-use development has unique characteristics that influence the extent of internal trip capture. Such characteristics include, but are not limited to, the following:

- The number and magnitudes of complementary land uses;
- The layout of the land uses relative to each other;
- Specific businesses, residence types, and other component characteristics within each land use category;
- Proximity and connectivity between each pair of land uses;
- Design characteristics of the development and its internal transportation system;
- Specific characteristics of the development's access and parking; and
- Competing opportunities outside the development.

6.5.1 Step 1: Determine Whether Methodology Is Appropriate for Study Site

The procedure should be used for estimating internal capture only at a mixed-use development that has characteristics resembling the sites from which the internal capture rates have been derived. In determining if the recommended procedure is appropriate for a particular mixed-use development, the analyst should consider at least the following factors:

- **Development Type:** The mixed-use development should be a single, physically and functionally integrated development on a single development block or a group of contiguous blocks with two or more uses, with internal pedestrian and vehicular connectivity, and with shared parking among some or all uses. The site should have sufficient parking supply to meet demand although the most convenient parking may sometimes fill during peak demand periods.
- **Development Location:** The mixed-use development should be downtown fringe, general urban, or suburban. It should not be located either within or adjacent to a central business district. Trip generation for a study site in a CBD setting is addressed in Chapter 7.
- **Development Size:** The data that form the bases for the internal capture methodology are from mixed-use development sites that have between 100,000 and 2 million sq. ft. of building space and an overall acreage of up to roughly 300 acres. The mixed-use development should fall within those ranges. It can be a single site, a block, or a district or neighborhood (with multiple interconnected or interactive blocks within a defined boundary); however, this procedure should not be used for a development composed of different adjacent, but not directly connected, land uses. Adjacent blocks can be considered to be directly connected if there is an internal street, driveway, alley system, or pedestrianway by which person trips can be made to travel from one block to another. If the development site has multiple land uses and the blocks are configured in such a way that internal trips must exit the site and use an external street system, then the site is not a mixed-use development.

- **Land Use Mix:** The mixed-use development should consist of a combination of at least two of the following uses: retail, restaurant, office, residential, hotel, and cinema/entertainment. Internal capture for land uses beyond these six should be considered to be zero (unless comparable survey data for other land uses are provided) because there are no supporting data from which to derive an appropriate percentage. In addition, if a substantial portion of the land use at a mixed-use site is outside these six land uses, the *Handbook* internal capture rates might not be appropriate. Alternatively, the analyst can collect internal capture data at proxy sites with similar land use and setting characteristics.
- **ITE *Trip Generation Manual* Database:** The mixed-use development should not already be covered in the ITE trip generation database as reported in the latest edition of *Trip Generation Manual*. Current ITE Land Use types that already account for internal trip-making include shopping center, office park with retail, office building with ground floor retail or on-site cafeteria, and hotel with limited retail and restaurant space.
- **Time Period for Analysis:** The internal capture rates contained in this *Handbook* cover the weekday AM and PM peak periods for adjacent street traffic. Internal capture rates for weekend peak periods, for weekday midday peak periods, or for a daily period should not be assumed to be the same as or even a simple, direct function of the weekday AM and PM peak period rates. The analyst should collect additional data. Refer to section 6.7 of this chapter for guidance.

If the mixed-use development type, location, or size is not compatible with the sites in the internal capture database or if an estimate of internal capture during the midday or on a weekend is desired.

6.5.2 Step 2: Estimate Person Trip Generation for Individual On-Site Land Uses

The purpose of the second step is to estimate the **person** trips generated for each on-site land use. Person trips can be estimated from

- Directional (in, out) vehicle trip generation estimates for each land use;
- Mode share (percent of external person trips in personal passenger vehicle, truck, transit, and non-motorized) for each land use; and
- Vehicle occupancy for each land use.

These are **baseline** assumptions. They are used to factor baseline vehicle trip estimates to baseline person trip estimates which are assumed to be the same as study site person trip estimates. These should not reflect anticipated or potential changes in study site external mode shares (for example, walk trips to/from a mixed-use development in an infill setting or transit trips to/from a mixed-use development near a transit station). Those **external** mode share calculations are addressed in Chapters 7 and 8.

The following paragraphs describe the data requirements for each set of inputs, including references to the appropriate location on the spreadsheet tool where each data item should be entered. Figure 6.2 presents the PM peak hour input and output pages in the spreadsheet model. The spreadsheet also includes AM peak hour input and output pages and internal capture rate look-up tables for both AM and PM.

Vehicle Trip Generation by Land Use. The analyst should estimate vehicle trip generation for each component land use using the procedures presented in Chapters 3 and 4 of this *Handbook*.

The recommended procedure can estimate internal trip capture for the following generic land use categories: office, retail, restaurant, residential, hotel, and cinema/entertainment.

Therefore, for the purpose of estimating internal capture, the analyst must consolidate individual appropriate land uses into the above land use categories. As an example, for a mixed-use development containing apartments and townhouses, compute vehicle trips generated for each and total them to estimate the total residential vehicle trips. The vehicle trip generation estimates should be entered in Table 1 of the spreadsheet tool shown in Figure 6.2 as entering or exiting vehicle trips.

The recommended procedure estimates internal capture only for trips to/from land uses that fall into one of the above six categories. Also included in Table 1 of the estimator spreadsheet is a row for the analyst to input the inbound and outbound vehicle trip generation data for all other land uses that are not subject to internal trip capture computations. If there are multiple on-site land uses that are not subject to internal trip capture, the individual land use estimates should be combined before entering into the “All Other Land Uses” row. These trips are automatically assumed to be external trips (that is, with no internal capture) in subsequent computations.

The spreadsheet calculates the total of the entering and exiting vehicle trips for the individual land uses.

Project Name:	Evergreen Townhomes
Analysis Period:	**AM Street Peak Hour**

Table 7-A: Conversion of Vehicle-Trip Ends to Person-Trip Ends

Land Use	Table 7-A (D): Entering Trips			Table 7-A (O): Exiting Trips		
	Veh. Occ.	Vehicle-Trips	Person-Trips*	Veh. Occ.	Vehicle-Trips	Person-Trips*
Office	1.00	0	0	1.00	0	0
Retail	1.00	28	28	1.00	19	19
Restaurant	1.00	0	0	1.00	0	0
Cinema/Entertainment	1.00	0	0	1.00	0	0
Residential	1.00	2	2	1.00	6	6
Hotel	1.00	0	0	1.00	0	0

Table 8-A (O): Internal Person-Trip Origin-Destination Matrix (Computed at Origin)

Origin (From)	Destination (To)					
	Office	Retail	Restaurant	Cinema/Entertainment	Residential	Hotel
Office		0	0	0	0	0
Retail	6		2	0	3	0
Restaurant	0	0		0	0	0
Cinema/Entertainment	0	0	0		0	0
Residential	0	0	1	0		0
Hotel	0	0	0	0	0	

Table 8-A (D): Internal Person-Trip Origin-Destination Matrix (Computed at Destination)

Origin (From)	Destination (To)					
	Office	Retail	Restaurant	Cinema/Entertainment	Residential	Hotel
Office		9	0	0	0	0
Retail	0		0	0	0	0
Restaurant	0	2		0	0	0
Cinema/Entertainment	0	0	0		0	0
Residential	0	5	0	0		0
Hotel	0	1	0	0	0	

Table 9-A (D): Internal and External Trips Summary (Entering Trips)

Destination Land Use	Person-Trip Estimates			External Trips by Mode*		
	Internal	External	Total	Vehicles[1]	Transit[2]	Non-Motorized[2]
Office	0	0	0	0	0	0
Retail	0	28	28	28	0	0
Restaurant	0	0	0	0	0	0
Cinema/Entertainment	0	0	0	0	0	0
Residential	0	2	2	2	0	0
Hotel	0	0	0	0	0	0
All Other Land Uses[3]	0	0	0	0	0	0

Table 9-A (O): Internal and External Trips Summary (Exiting Trips)

Origin Land Use	Person-Trip Estimates			External Trips by Mode*		
	Internal	External	Total	Vehicles[1]	Transit[2]	Non-Motorized[2]
Office	0	0	0	0	0	0
Retail	0	19	19	19	0	0
Restaurant	0	0	0	0	0	0
Cinema/Entertainment	0	0	0	0	0	0
Residential	0	6	6	6	0	0
Hotel	0	0	0	0	0	0
All Other Land Uses[3]	0	0	0	0	0	0

[1]Vehicle-trips computed using the mode split and vehicle occupancy values provided in Table 2-A

[2]Person-Trips

[3]Total estimate for all other land uses at mixed-use development site-not subject to internal trip capture computations in this estimator

*Indicates computation that has been rounded to the nearest whole number.

NCHRP 8-51 Internal Trip Capture Estimation Tool			
Project Name:	Evergreen Townhomes	**Organization:**	
Project Location:	Foothill Blvd and Cactus Ave	**Performed By:**	
Scenario Description:	Projected	**Date:**	
Analysis Year:	2022	**Checked By:**	
Analysis Period:	**PM Street Peak Hour**	**Date:**	

Table 1-P: Base Vehicle-Trip Generation Estimates (Single-Use Site Estimate)

Land Use	Development Data (*For Information Only*)			Estimated Vehicle-Trips		
	ITE LUCs[1]	Quantity	Units	Total	Entering	Exiting
Office				0		
Retail				132	66	66
Restaurant				0		
Cinema/Entertainment				0		
Residential				10	6	4
Hotel				0		
All Other Land Uses[2]				0		
Total				142	72	70

Table 2-P: Mode Split and Vehicle Occupancy Estimates

Land Use	Entering Trips			Exiting Trips		
	Veh. Occ.	% Transit	% Non-Motorized	Veh. Occ.	% Transit	% Non-Motorized
Office						
Retail	1.00			1.00		
Restaurant						
Cinema/Entertainment						
Residential	1.00			1.00		
Hotel						
All Other Land Uses[2]						

Table 3-P: Average Land Use Interchange Distances (Feet Walking Distance)

Origin (From)	Destination (To)					
	Office	Retail	Restaurant	Cinema/Entertainment	Residential	Hotel
Office						
Retail						
Restaurant						
Cinema/Entertainment						
Residential						
Hotel						

Table 4-P: Internal Person-Trip Origin-Destination Matrix*

Origin (From)	Destination (To)					
	Office	Retail	Restaurant	Cinema/Entertainment	Residential	Hotel
Office		0	0	0	0	0
Retail	0		0	0	3	0
Restaurant	0	0		0	0	0
Cinema/Entertainment	0	0	0		0	0
Residential	0	2	0	0		0
Hotel	0	0	0	0	0	

Table 5-P: Computations Summary

	Total	Entering	Exiting
All Person-Trips	142	72	70
Internal Capture Percentage	7%	7%	7%
External Vehicle-Trips[3]	132	67	65
External Transit-Trips[4]	0	0	0
External Non-Motorized Trips[4]	0	0	0

Table 6-P: Internal Trip Capture Percentages by Land Use

Land Use	Entering Trips	Exiting Trips
Office	N/A	N/A
Retail	3%	5%
Restaurant	N/A	N/A
Cinema/Entertainment	N/A	N/A
Residential	50%	50%
Hotel	N/A	N/A

[1]Land Use Codes (LUCs) from *Trip Generation Informational Report*, published by the Institute of Transportation Engineers.

[2]Total estimate for all other land uses at mixed-use development site-not subject to internal trip capture computations in this estimator

[3]Vehicle-trips computed using the mode split and vehicle occupancy values provided in Table 2-P

[4]Person-Trips

*Indicates computation that has been rounded to the nearest whole number.

Estimation Tool Developed by the Texas Transportation Institute

Project Name:	Evergreen Townhomes
Analysis Period:	**PM Street Peak Hour**

Table 7-P: Conversion of Vehicle-Trip Ends to Person-Trip Ends

Land Use	Table 7-P (D): Entering Trips			Table 7-P (O): Exiting Trips		
	Veh. Occ.	Vehicle-Trips	Person-Trips*	Veh. Occ.	Vehicle-Trips	Person-Trips*
Office	1.00	0	0	1.00	0	0
Retail	1.00	66	66	1.00	66	66
Restaurant	1.00	0	0	1.00	0	0
Cinema/Entertainment	1.00	0	0	1.00	0	0
Residential	1.00	6	6	1.00	4	4
Hotel	1.00	0	0	1.00	0	0

Table 8-P (O): Internal Person-Trip Origin-Destination Matrix (Computed at Origin)

Origin (From)	Destination (To)					
	Office	Retail	Restaurant	Cinema/Entertainment	Residential	Hotel
Office		0	0	0	0	0
Retail	1		19	3	17	3
Restaurant	0	0		0	0	0
Cinema/Entertainment	0	0	0		0	0
Residential	0	2	1	0		0
Hotel	0	0	0	0	0	

Table 8-P (D): Internal Person-Trip Origin-Destination Matrix (Computed at Destination)

Origin (From)	Destination (To)					
	Office	Retail	Restaurant	Cinema/Entertainment	Residential	Hotel
Office		5	0	0	0	0
Retail	0		0	0	3	0
Restaurant	0	33		0	1	0
Cinema/Entertainment	0	3	0		0	0
Residential	0	7	0	0		0
Hotel	0	1	0	0	0	

Table 9-P (D): Internal and External Trips Summary (Entering Trips)

Destination Land Use	Person-Trip Estimates			External Trips by Mode*		
	Internal	External	Total	Vehicles[1]	Transit[2]	Non-Motorized[2]
Office	0	0	0	0	0	0
Retail	2	64	66	64	0	0
Restaurant	0	0	0	0	0	0
Cinema/Entertainment	0	0	0	0	0	0
Residential	3	3	6	3	0	0
Hotel	0	0	0	0	0	0
All Other Land Uses[3]	0	0	0	0	0	0

Table 9-P (O): Internal and External Trips Summary (Exiting Trips)

Origin Land Use	Person-Trip Estimates			External Trips by Mode*		
	Internal	External	Total	Vehicles[1]	Transit[2]	Non-Motorized[2]
Office	0	0	0	0	0	0
Retail	3	63	66	63	0	0
Restaurant	0	0	0	0	0	0
Cinema/Entertainment	0	0	0	0	0	0
Residential	2	2	4	2	0	0
Hotel	0	0	0	0	0	0
All Other Land Uses[3]	0	0	0	0	0	0

[1]Vehicle-trips computed using the mode split and vehicle occupancy values provided in Table 2-P

[2]Person-Trips

[3]Total estimate for all other land uses at mixed-use development site-not subject to internal trip capture computations in this estimator

*Indicates computation that has been rounded to the nearest whole number.

NCHRP 8-51 Internal Trip Capture Estimation Tool			
Project Name:	Evergreen Townhomes	**Organization:**	
Project Location:	Foothill Blvd and Cactus Ave	**Performed By:**	
Scenario Description:	Projected	**Date:**	
Analysis Year:	2022	**Checked By:**	
Analysis Period:	**AM Street Peak Hour**	**Date:**	

Table 1-A: Base Vehicle-Trip Generation Estimates (Single-Use Site Estimate)

Land Use	Development Data (*For Information Only*)			Estimated Vehicle-Trips		
	ITE LUCs[1]	Quantity	Units	Total	Entering	Exiting
Office				0		
Retail				47	28	19
Restaurant				0		
Cinema/Entertainment				0		
Residential				8	2	6
Hotel				0		
All Other Land Uses[2]				0		
Total				55	30	25

Table 2-A: Mode Split and Vehicle Occupancy Estimates

Land Use	Entering Trips			Exiting Trips		
	Veh. Occ.	% Transit	% Non-Motorized	Veh. Occ.	% Transit	% Non-Motorized
Office						
Retail	1.00			1.00		
Restaurant						
Cinema/Entertainment						
Residential	1.00			1.00		
Hotel						
All Other Land Uses[2]						

Table 3-A: Average Land Use Interchange Distances (Feet Walking Distance)

Origin (From)	Destination (To)					
	Office	Retail	Restaurant	Cinema/Entertainment	Residential	Hotel
Office						
Retail						
Restaurant						
Cinema/Entertainment						
Residential						
Hotel						

Table 4-A: Internal Person-Trip Origin-Destination Matrix*

Origin (From)	Destination (To)					
	Office	Retail	Restaurant	Cinema/Entertainment	Residential	Hotel
Office		0	0	0	0	0
Retail	0		0	0	0	0
Restaurant	0	0		0	0	0
Cinema/Entertainment	0	0	0		0	0
Residential	0	0	0	0		0
Hotel	0	0	0	0	0	

Table 5-A: Computations Summary

	Total	Entering	Exiting
All Person-Trips	55	30	25
Internal Capture Percentage	0%	0%	0%
External Vehicle-Trips[3]	55	30	25
External Transit-Trips[4]	0	0	0
External Non-Motorized Trips[4]	0	0	0

Table 6-A: Internal Trip Capture Percentages by Land Use

Land Use	Entering Trips	Exiting Trips
Office	N/A	N/A
Retail	0%	0%
Restaurant	N/A	N/A
Cinema/Entertainment	N/A	N/A
Residential	0%	0%
Hotel	N/A	N/A

[1]Land Use Codes (LUCs) from *Trip Generation Informational Report*, published by the Institute of Transportation Engineers.

[2]Total estimate for all other land uses at mixed-use development site-not subject to internal trip capture computations in this estimator

[3]Vehicle-trips computed using the mode split and vehicle occupancy values provided in Table 2-A

[4]Person-Trips

*Indicates computation that has been rounded to the nearest whole number.

Estimation Tool Developed by the Texas Transportation Institute

Land Use	Unadjusted Project Trips[1]			Internal Capture %[2]		Internal Capture Project Trips[3]			PM Total %[4]
	PM In	PM Out	PM Total	PM In	PM Out	PM In	PM Out	PM Total	
Retail	66	66	132	3%	5%	2	3	5	4%
Residential	6	4	10	50%	50%	3	2	5	50%

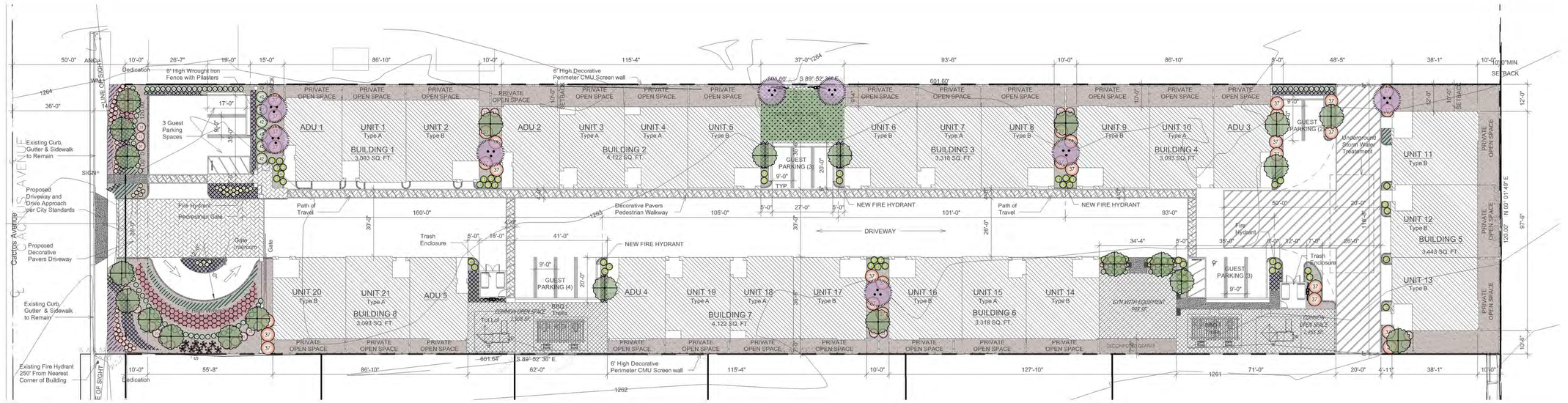
[1]Trip generation based on rates from Institute of Transportation Engineers (ITE), Trip Generation Manual, Eleventh Edition (2021)

[2]Internal Capture percentage is based on NCHRP Report 684, as recommended in the ITE Trip Generation Handbook, 3rd Edition.

[3]Internal Capture percentage from footnote 2 applied to trip generation from footnote 1

[4]Calculated internal capture percentage for total PM trips based on internal capture PM total trips column divided by unadjusted PM PM total trips

Attachment 4 - Landscape Plan/Line of Sight



Plant Legend

Symbol	Botanical / Common Name	Foliage / OH Notes	Cont.	Water Use	Height / Width
Trees					
	Lagerstroemia indica x fauriei 'Zuni' Zuni Crape Myrtle	Deciduous Edison friendly	24" Box	Mod.	9-12' 8-10'
	Magnolia grandiflora 'Little Gem' Little Gem Dwarf Southern Magnolia	Evergreen	24" Box Standard	Mod.	20-25' 10'-15'
	Limited Use Area No visual obstructions over 30" in height in the Limited Use Area created by Sight Lines.				

All planters to receive 3" layer shredded bark mulch, except where otherwise shown.















Plant Legend

Symbol	Botanical / Common Name	Container	Water Use	Height / Width
Foundation Shrubs				
	Buxus microphylla Boxwood	1 gallon	Moderate	3-4' 2-4'
	Leucadendron 'Jester' Jester Conebush	Flats 1.5 ft o.c.	Moderate	4'-5' 4'-5'
	Pittosporum tobira 'Variegatum' Variegated Japanese Mock Orange	5 gallon	Moderate	4-5' 4-5'
Accents and Ornamental Grasses				
	Cordyline x 'JURred' Festival™ Burgundy Cordyline	15 gallon	Moderate	3' 3'
	DIANELLA tasmanica 'Silver Streak' Silver Streak Flax Lily	5 gallon	Moderate	18"-24" 18"-24"
	Hemerocallisx 'Ruby Spider' Ruby Spider Daylily	1 gallon	Moderate	20" 20"
	Lantana x 'Moni' Confetti Spreading Lantana	1 gallon	Low	2'-3' 6'-8'
	Liriope muscari 'Big Blue' Big Blue Lilyturf	1 gallon	Moderate	12"-15" 12"-15"
Low Growing Shrubs and Groundcovers				
	Carissa macrocarpa 'Tomlinson' Tomlinson Natal Plum	1 gallon	Moderate	2'-3' 3'
	Rosa x 'Noalesa' Flower Carpet Red Rose	1 Gallon	Moderate	2'-3' 3'-4'
	Senecio serpens Blue Chalksticks	Flats	Low	10"-1' 2'-3'
	Tradescantia palladia 'Purpurea' Purple Spiderwort	Flats	Moderate	1'2' 1'-2'
	Festuca arundinacea Dwarf Tall Fescue - Marathon II	Sod	Moderate	1'2' 1'-2'
Vines				
	Grewia occidentalis Espalier (G. caffra) Lavender Star Flower Espalier	1 gallon	Moderate	6'-10' 6'-10'

Reference Eto 55.6 **Conservation Factor** 0.55
Maximum Allowable Water Allocation Equation: (residential)
MAWA = (ETo) (0.62) [(ETAF x LA) + ((1-ETAF)xSLA)]

Eto	0.62	ETAF	LA	1-ETAF	SLA
55.6	0.62	0.55	24449	0.45	5668

551,468 MAWA

Estimated Total Water Use Equation:
ETWU = Eto x 0.62 x ETAF x LA **515,100 ETWU**
HYDROZONE MATRIX

ZONE	HYDROZONE BASIS	S.F.	%TOTAL	PLANT TYPE	PLANT FACTOR	IRRIGATION EFFICIENCY	Eto	0.62	ETAF	LA	ETWU	IRRIGATION METHOD
LW/MW-SHRUBS		18781	77%	LOW/MODERATE	0.40	0.81	55.60	0.62	0.49	18781	319,712.90	Dripline
SPECIAL LANDSCAPE AREAS												
HW-TURF (REC)		4730	19%						1.00	4730	163,052.56	Dripline
SYN. TURF (PET AREA)		938	4%						1.00	938	32,334.74	Spray
										ETWU	**515,100**	
								Total Landscape			24,449	

Note: Landscape to be installed with low-volume drip irrigation and automatic, weather sensing irrigation controller.

0' 20' 40'

Ecosystem Urban UES Solutions
LandscapeDynamics.net
Landscape Dynamics
URBAN | ECOSYSTEM | SOLUTIONS
Landscape Architecture - Consulting
Water Management - Certified Arboriculture
(951) 264-4839
DESIGN PROJECT MANAGER
Greg Zoll
gregzoll@landscapedynamics.net
(951) 264-4839

Preliminary Landscape Plan

Evergreen Townhomes

345 N. Cactus Avenue, Rialto, CA 92376

DIGALERT
DIAL TOLL FREE
1-800-227-2600
AT LEAST THREE DAYS BEFORE YOU DIG
UNDERGROUND SERVICE ALERT OF SOUTHERN CALIFORNIA

LICENSED LANDSCAPE ARCHITECT
GREGORY PAUL ZOLL
5204
April 30, 2024
Renewal Date
STATE OF CALIFORNIA

Sep. 13, 2022
DESCRIPTION
JOB NO. 520
SHEET
1 of 1

Attachment 5 - Cactus Avenue Existing & Proposed Roadway Configuration

CITY OF RIALTO
CONCEPTUAL GRADING PLAN

OF LOT 2 OF THE FRANK C. PLATT CO. TRACT AS SHOWN ON MAP RECORDED IN BOOK 16 PAGE 18 OF MAPS RECORDS OF SAN BERNARDINO COUNTY.

SAKE ENGINEERS, INC. SEPTEMBER, 2022

OWNER/DEVELOPER:
GEORGE BECERRA & FERNANDO ACOSTA
17333 NORDHOFF ST.
NORTHRIDGE, CA 91325
714-307-8018 PH.

ENGINEER:
SAKE ENGINEERS INC.
400 S. RAMONA AVE. STE. 202
CORONA, CA 92879
(951) 279-4041 PH.
(951) 279-2830 FAX

SOIL ENGINEER:
SOIL EXPLORATION COMPANY, INC.
7535 JURUPA AVE. UNIT C
RIVERSIDE, CA 92504
(951) 688-7200 PH.
(951) 688-7100 FAX

ASSESSORS PARCEL NO.:
0130-013-02

SITE ADDRESS:
345 CACTUS AVE.
RIALTO, CA 92376

TOTAL ACREAGE:

TOTAL ACREAGE (GROSS)	1.66 AC. (72,205 S.F.)
DISTURBED AREA	1.66 AC. (72,205 S.F.)
IMPERVIOUS AREA	1.31 AC. (56,894 S.F.)
PERVIOUS AREA	0.35 AC. (15,311 S.F.)

UTILITIES:

ELECTRIC	SO. CAL. EDISON COMPANY
GAS	SO. CAL. GAS COMPANY
WATER	CITY OF RIALTO
SEWER	CITY OF RIALTO
TELEPHONE	VERIZON
CABLE TV	AT&T
SCHOOL DISTRICT	RIALTO SCHOOL DISTRICT

TOPOGRAPHY:
LANDMARK SURVEYING
14586 CHOKE CHERRY DRIVE
VICTORVILLE, CA 92392
(760) 955-4141 PH.

ZONING AND LAND USE:

EXIST. ZONING	FOOTHILL BLVD. SPECIFIC PLAN
PROP. ZONING	FOOTHILL BLVD. SPECIFIC PLAN
EXIST. LAND USE	VACANT
PROP. LAND USE	TOWNHOMES

BASIS OF ELEVATION:
FIELD SURVEY ON 11/10/21. BM#00501.
ELEV = 1273.11 PER S.B.CO.F.B.
004016/1928.

BASIS OF BEARING:
THE CENTERLINE OF CACTUS AVENUE BEING NORTH 00°02'49" EAST AS SHOWN ON M.B. 234/18-20.

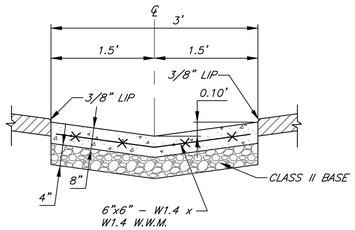
FLOOD ZONE:
FLOOD ZONE = X
COMMUNITY PANEL NO. 06071C-8657H
08/28/2008

LEGAL DESCRIPTION:
OF LOT 2 OF THE FRANK C. PLATT CO. TRACT AS SHOWN ON MAP RECORDED IN BOOK 16 PAGE 18 OF MAPS RECORDS OF SAN BERNARDINO COUNTY.

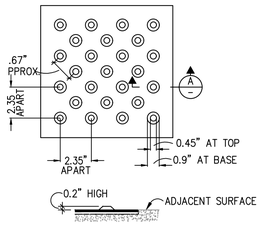
EARTHWORK:

CUT	1,320± C.Y.
FILL	15± C.Y.
SUBSIDENCE	250± C.Y.
SHRINKAGE	1,055± C.Y.

NOTE:
EARTH QUANTITIES SHOWN HERE ARE FOR RAW ESTIMATING PLAN CHECK FEES ONLY. GRADING CONTRACTOR IS RESPONSIBLE TO PERFORM THEIR OWN CALCULATIONS FOR EARTH VOLUME WITH THE SOILS ENGINEER'S RECOMMENDATION.



RIBBON GUTTER DETAIL: (5) NTS



Typical Section A-A (1 A)

Typical Plan - Truncated Domes (9)

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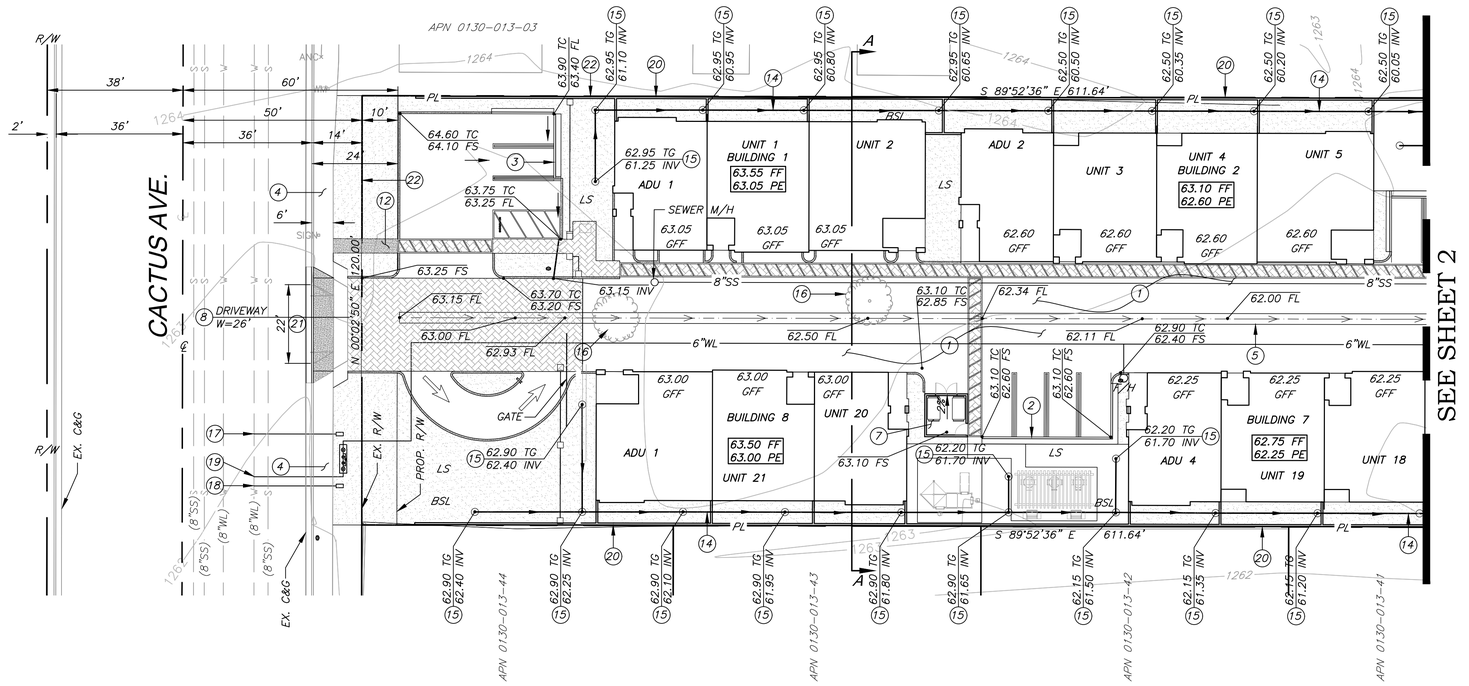
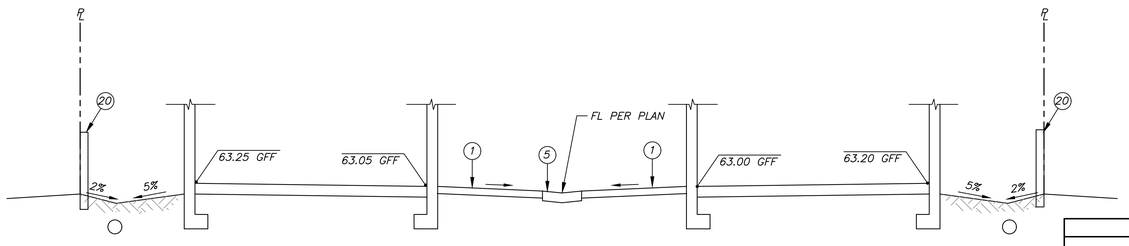
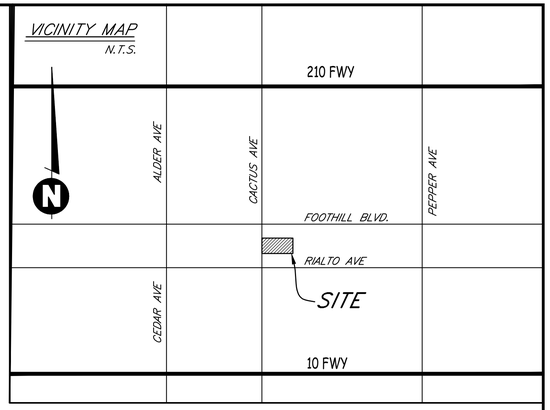


SEE SHEET 2



SECTION "A-A": NTS



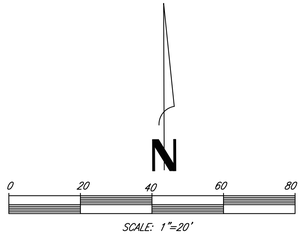
THOMAS BROTHERS MAP PAGE/GRID:
PAGE 15, GRID C3 EDITION

CONSTRUCTION NOTES:

1. CONST. _" AC OVER _" AB PER SOIL ENG.
2. CONST. 6" CURB PER CITY STD.
3. CONST. 6" CURB & GUTTER PER CITY STD.
4. CONST. 4" PCC SIDEWALK PER CITY STD.
5. CONST. RIBBON GUTTER W=3' PER DETAIL HEREON
6. CONST. 12" WIDE MOE STRIP
7. CONST. COVERED TRASH ENCLOSURE
8. CONST. DRIVEWAY APPROACH PER CITY STD.
9. INSTALL TRUNCADED DOME PER DETAIL HEREON
10. APPLY 4" WIDE BLUE STRIP PER ARCH. PLANS
11. INSTALL 12"X12" AREA DRAIN
12. CONST. 4" PCC WALKWAY
13. CONST. STORM TECH SYSTEM
14. INSTALL 4" PVC DRAIN PIPE
15. INSTALL 4" AREA DRAIN
16. REMOVE EXIST. TREE
17. INSTALL _" DOMESTIC WATER METER
18. INSTALL _" IRRIGATION WATER METER
19. INSTALL _" DDC
20. CONST. 6' HIGH DECORATIVE PERIMETER CMU SCREEN WALL
21. DEMO EXIST. DRIVEWAY APPROACH
22. DEMO EXIST. FENCE

LEGEND:

	FLOW LINE	C.O.	= CLEAN OUT		
	PROPERTY LINE	℄	= PROPERTY LINE		
	CENTER LINE	S.F.	= SQUARE FEET		
W	EXISTING WATER LINE	G.B.	= GRADE BREAK	W.L.	= WATER LINE
SS	EXISTING SANITARY SEWER LINE	F.S.	= FINISHED SURFACE	APN	= ASSESSOR PARCEL NUMBER
	PROPOSED SLOPE	H.P.	= HIGH POINT	PROP.	= PROPOSED
(600)	EXISTING CONTOUR	S.D.	= STORM DRAIN	P.M.	= PARCEL MAP
601	PROPOSED CONTOUR	F.L.	= FLOW LINE	D.G.	= DECOMPOSED GRANITE
	RET. WALL	T.C.	= TOP OF CURB	S	= SEWER
	NEW ASPHALT CONCRETE	W.I.	= WROUGHT IRON	N.T.S	= NOT TO SCALE
(600.00 __)	EXISTING ELEVATION	C.L.	= CHAIN LINK	S/W	= SIDEWALK
		P.I.P.	= PROTECT IN PLACE	R/W	= RIGHT OF WAY
		T.W.	= TOP OF WALL	P.C.C.	= PORTLAND CEMENT CONCRETE
		T.F.	= TOP OF FOOTING	EXIST.	= EXISTING
		℄	= CENTERLINE	L.U.	= LAND USE
				A.C.	= ASPHALT CONCRETE
				C.W.P.	= CONSTRUCTION WITHOUT PERMIT



SCALE: 1"=20'

PREPARED UNDER THE DIRECTION OF:

SAM AKBARPOUR P.E. RCE. 053038

REGISTERED PROFESSIONAL ENGINEER SAM AKBARPOUR C053038 CIVIL STATE OF CALIFORNIA

REVISIONS	DATE	BY

CONCEPTUAL GRADING PLAN
CITY OF RIALTO

SCALE	1" = 20'
DATE	9/14/2022
DRAWN:	JAC
DESIGNED:	SA
CHECKED:	SA
PLN CK REF:	

SAKE ENGINEERS, INC.
ENGINEERING • SURVEYING • LAND DEVELOPMENT
400 S. RAMONA AVE., STE. 202
CORONA, CALIFORNIA 92879
(951) 279-4041 FAX (951) 279-2830

FILE: SERVER\PROJECTS\JN3392\CIVIL\PLOTPLAN
PLOT DATE: 9/14/2022

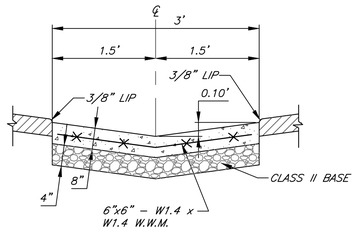
J.N. 3392
SHEET 1 OF 2 SHEETS
DWG. NO.

\\Nas-new\data\projects\CRialto\jn3392 Cactus Apts\Civil\PLOT PLAN 1.dwg, PLOT PLAN 1, 9/14/2022 9:14:36 AM, 1:20

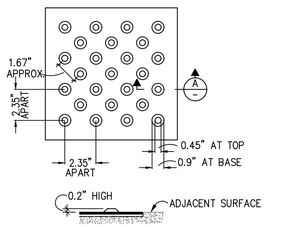
CITY OF RIALTO
CONCEPTUAL GRADING PLAN

OF LOT 2 OF THE FRANK C. PLATT CO. TRACT AS SHOWN ON MAP RECORDED IN BOOK 16 PAGE 18 OF MAPS RECORDS OF SAN BERNARDINO COUNTY.

SAKE ENGINEERS, INC. SEPTEMBER, 2022



RIBBON GUTTER DETAIL: (5) NTS



Typical Section A–A

Typical Plan – Truncated Domes (9)

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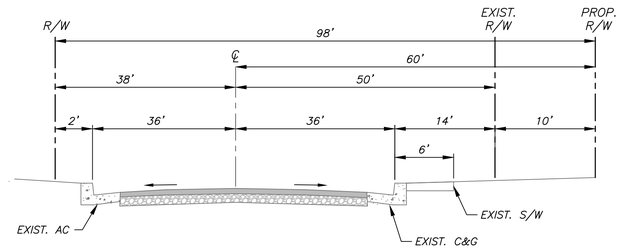
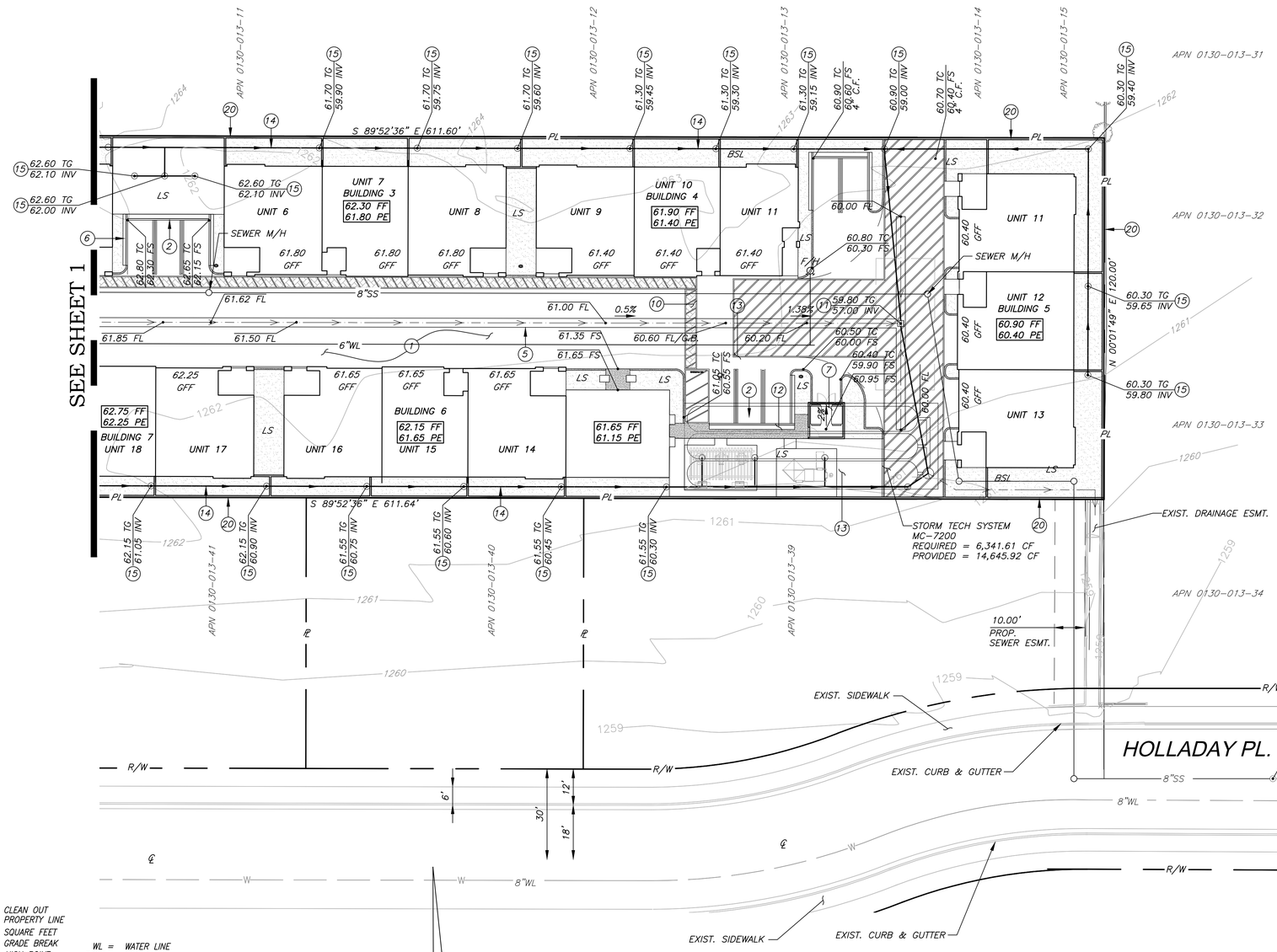


CACTUS AVENUE TYP. STREET SECTION : NTS



CONSTRUCTION NOTES:

1. CONST. _" AC OVER _" AB PER SOIL ENG.
2. CONST. 6" CURB PER CITY STD.
3. CONST. 6" CURB & GUTTER PER CITY STD.
4. CONST. 4" PCC SIDEWALK PER CITY STD.
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15. INSTALL 4" AREA DRAIN
16. REMOVE EXIST. TREE
20. CONST. 6' HIGH DECORATIVE PERIMETER CMU SCREEN WALL

LEGEND:

	FLOW LINE	C.O. =	CLEAN OUT		
	PROPERTY LINE	℄ =	PROPERTY LINE		
	CENTER LINE	S.F. =	SQUARE FEET		
W	EXISTING WATER LINE	G.B. =	GRADE BREAK	WL =	WATER LINE
SS	EXISTING SANITARY SEWER LINE	H.P. =	HIGH POINT	PROP.=	PROPOSED
	PROPOSED SLOPE	FS =	FINISHED SURFACE	APN=	ASSESSOR PARCEL NUMBER
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601	PROPOSED CONTOUR	FL =	FLOW LINE	D.G.=	DECOMPOSED GRANITE
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	NEW ASPHALT CONCRETE	W.I. =	WROUGHT IRON	NTS =	NOT TO SCALE
(600.00 __)	EXISTING ELEVATION	C.L. =	CHAIN LINK	S/W =	SIDEWALK
		P.I.P.=	PROTECT IN PLACE	R/W =	RIGHT OF WAY
		TW =	TOP OF WALL	PCC =	PORTLAND CEMENT CONCRETE
		TF =	TOP OF FOOTING	EXIST.=	EXISTING
		℄ =	CENTERLINE	LU =	LAND USE
				AC =	ASPHALT CONCRETE
				CWP =	CONSTRUCTION WITHOUT PERMIT

N

0 20 40 60 80

SCALE: 1"=20'

PREPARED UNDER THE DIRECTION OF:

SAM AKBARPOUR P.E. RCE. 053038

REGISTERED PROFESSIONAL ENGINEER SAM AKBARPOUR C053038 CIVIL STATE OF CALIFORNIA

REVISIONS	DATE	BY

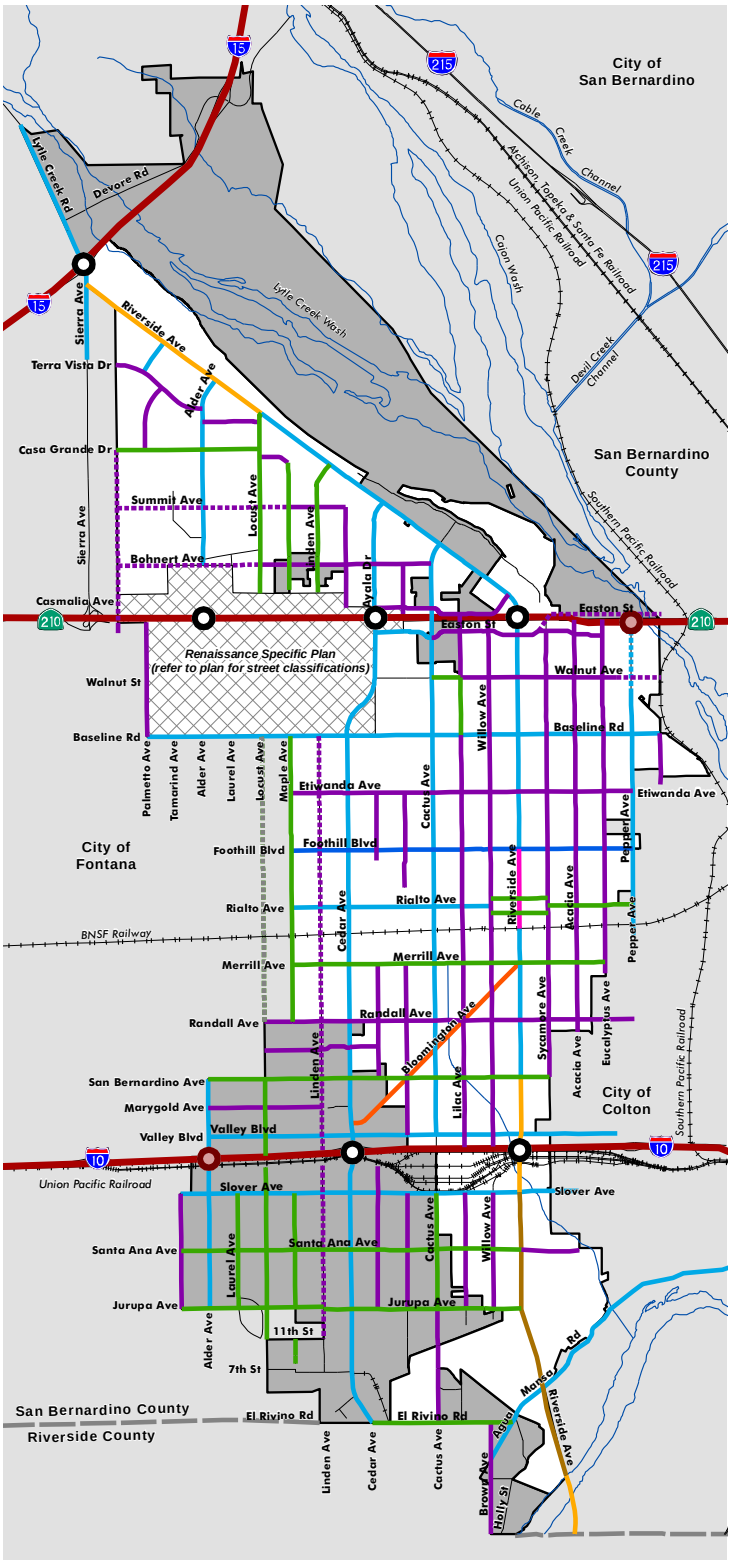
CONCEPTUAL GRADING PLAN
CITY OF RIALTO

SCALE 1" = 20'	SAKE ENGINEERS, INC.
DATE 9/14/2022	ENGINEERING • SURVEYING • LAND DEVELOPMENT
DRAWN: JAC	400 S. RAMONA AVE., STE. 202
DESIGNED: SA	CORONA, CALIFORNIA 92879
CHECKED: SA	(951) 279-4041 FAX (951) 279-2830
PLN CK REF:	FILE: SERVER\PROJECTS\JN3392\CIVIL\PLOTPLAN PLOT DATE: 9/14/2022

J.N. 3392 | SHEET 2 OF 2 SHEETS | DWG. NO.

\\Wg-new-01\projects\C\Rialto\Jn3392 Cactus Apts\Civil\PLOTPLAN 2, 9/14/2022 9:14:52 AM, 1:20

Attachment 6 - City of Rialto General Plan excerpts



Street Classification

Existing right-of-ways are indicated with a solid line, proposed right-of-ways are indicated with a dotted line, and right-of-ways outside the planning area are indicated with a gray line.

- Freeway
- Major Arterial Highway
- Major Arterial
- Major Arterial
- Modified Major Arterial I
- Modified Major Arterial II
- Modified Arterial I
- Modified Arterial II
- Secondary Arterial
- Secondary Arterial
- Secondary Arterial
- Collector Street
- Collector Street

Freeway Interchanges

- Existing Interchange
- Planned Future Interchange

Base Map Features

- Rialto Incorporated Area
- Rialto Sphere of Influence
- County Boundary
- Local Road
- Railroad
- Hydrological Feature

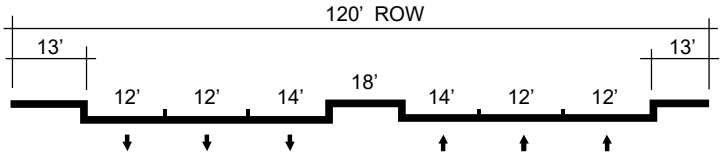
Source: Iteris, Inc. (2008)

0 0.5 1 1.5 2 Miles

Exhibit 4.1 – Street Classifications

Major Arterial Highway

A Major Arterial Highway can accommodate six lanes of traffic and has a raised median. Driveway access to this roadway is typically limited to provide efficient high-volume flow. Bloomington Avenue is the only Major Arterial Highway in Rialto.

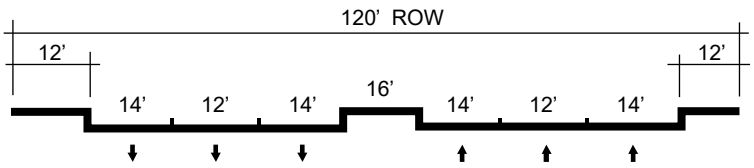


Major Arterial Highway

Major Arterial Highway

Major Arterial

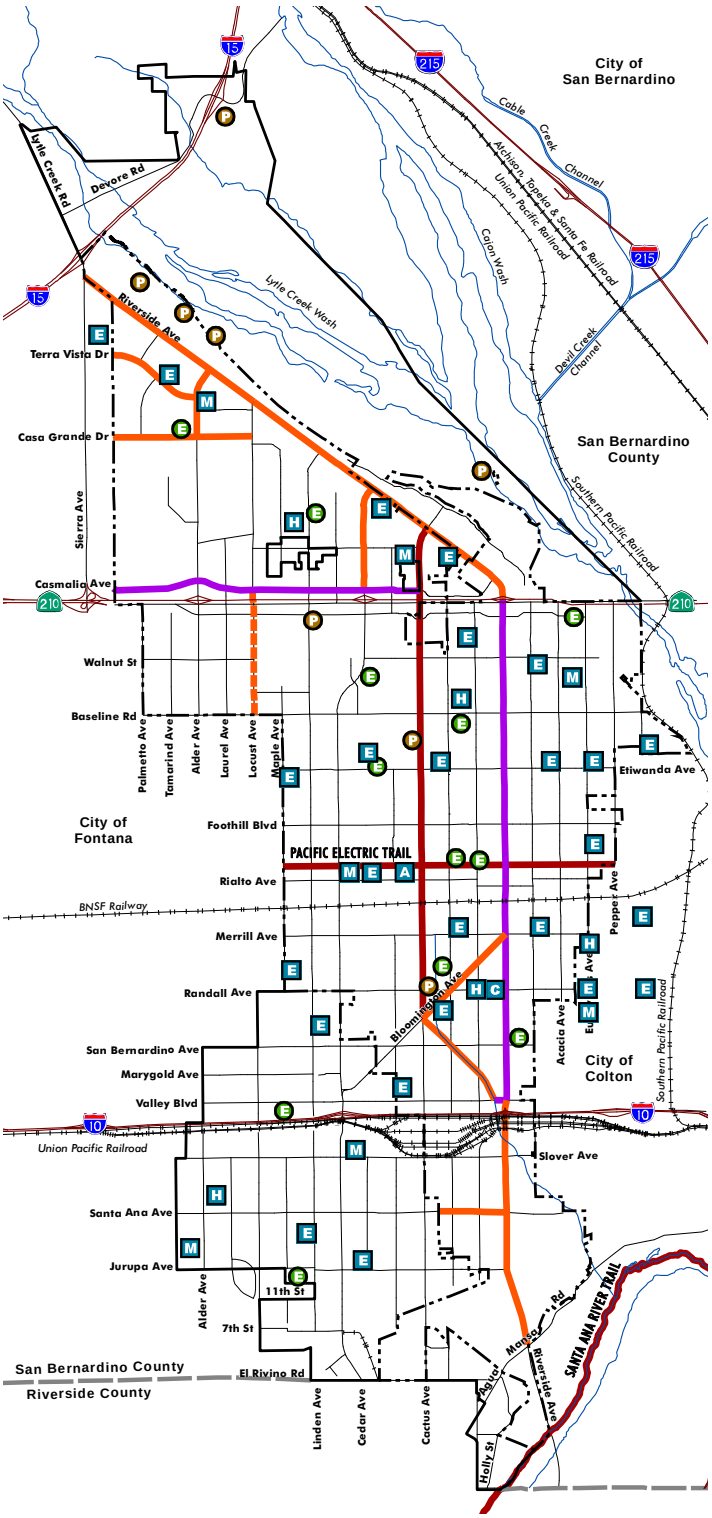
Major Arterials are generally the largest of the local surface street roadways, linking freeways with local streets to accommodate larger volumes of through traffic moving at higher speeds than local streets. These facilities carry high traffic volumes and are primary thoroughfares that connect Rialto with adjacent cities and the regional highway system. Typically, Major Arterials have at least two lanes of travel in each direction, left-turn lanes at intersections, and parking lanes, and are designed to accommodate high speeds. To provide a sufficient level of safety and traffic flow, the number of driveways along Major Arterials is limited.



Major Arterial

Major Arterial

There are four modified versions of the Major Arterial, each having slightly varying characteristics such a different number of vehicles lanes, widths, street parking, bike lanes, medians, or dedicated bus lanes.



Bike Trails
- Class I - Bike Path
- Class II - Bike Lane
- Class II - Bike Lane (subject to change)
- Class III - Bike Route

Parks
- E Existing
- P Proposed

Education Facilities
- E Elementary School
- M Middle School
- A Alternative School
- H High School
- C Continuation High School

Base Map Features
- Rialto Incorporated Area
- Rialto Sphere of Influence
- County Boundary
- Freeway/Highway
- Local Roads
- Railroad
- Hydrological Features

Source: Iteris, Inc. (2007)

Miles
0 0.5 1 1.5 2

Exhibit 4.4 – Bicycle Routes