



Memo: Cadence Mesa – Parking Analysis

Date: 01/28/22
TO: City of Mesa
FROM: Eric Maceyko, P.E., PTOE
Kelly Fletcher, P.E.

INTRODUCTION

A new multi-family residential development, named Cadence Mesa, is being planned within the previously master planned Cadence at Gateway development. The overall development is currently partially constructed and is generally located south of Ray Road and east of Ellsworth Road with a portion adjacent to the future State Route 24 extension in Mesa, Arizona. The proposed development encompasses an area previously identified as Development Unit 3 (DU3).

The site sits on approximately 16 acres at the southwest corner of Crismon Road and Williams Field Road. It is adjacent two drainage channels. One is a feeder channel that will be constructed by the property owner that is adjacent to Williams Field Road into the regional channel that's currently under construction. The regional channel is adjacent to SR 24, and it runs north and south. The proposed development is planned to contain several three-story buildings with a total of 302 multi-family dwelling units and associated amenities. The proposed development is also planning to provide a total of 518 parking spaces.

EPS Group has been retained to conduct a Parking Analysis for the proposed multi-family residential development to evaluate the anticipated parking demand and determine the recommended number of parking spaces to provide adequate operation.

LOCATION & SITE PLAN

Figure 1 provides an aerial photograph of the property vicinity and the adjacent streets. The immediate surrounding area primarily contains residential uses at various stages of construction and vacant land. The proposed site is located on the immediate southwest corner of the Crismon Road and Williams Field Road alignments. Neither road currently exists adjacent to the proposed DU3 site. Direct access to the site will only be provided to / from Crismon Road. An interchange at SR 24 is also planned on Williams Field Road adjacent to the proposed site.

Figure 2 provides the proposed development site plan. The planned multi-family residential development will consist of several different unit types including:

- Studio – 15 dwelling units
- One Bedroom – 135 dwelling units
- Two Bedrooms – 131 dwelling units
- Three Bedrooms – 21 dwelling units

Based on the above unit types and number of dwelling units, a total of 475 bedrooms are planned.

Per the City approved plan for DU3, the development will create a compact and walkable environment that offers diversified housing opportunities within Cadence. It will be designed to foster a walkable environment and will include outdoor spaces and amenity areas strategically located and contribute towards creating a socially interactive community. This pattern of development is achieved through pedestrian scaled building layout and circulation patterns that provides multiple travel options and foster opportunity for social interaction. This manner of development will likely contribute to less dependance on vehicular travel and need for parking space.

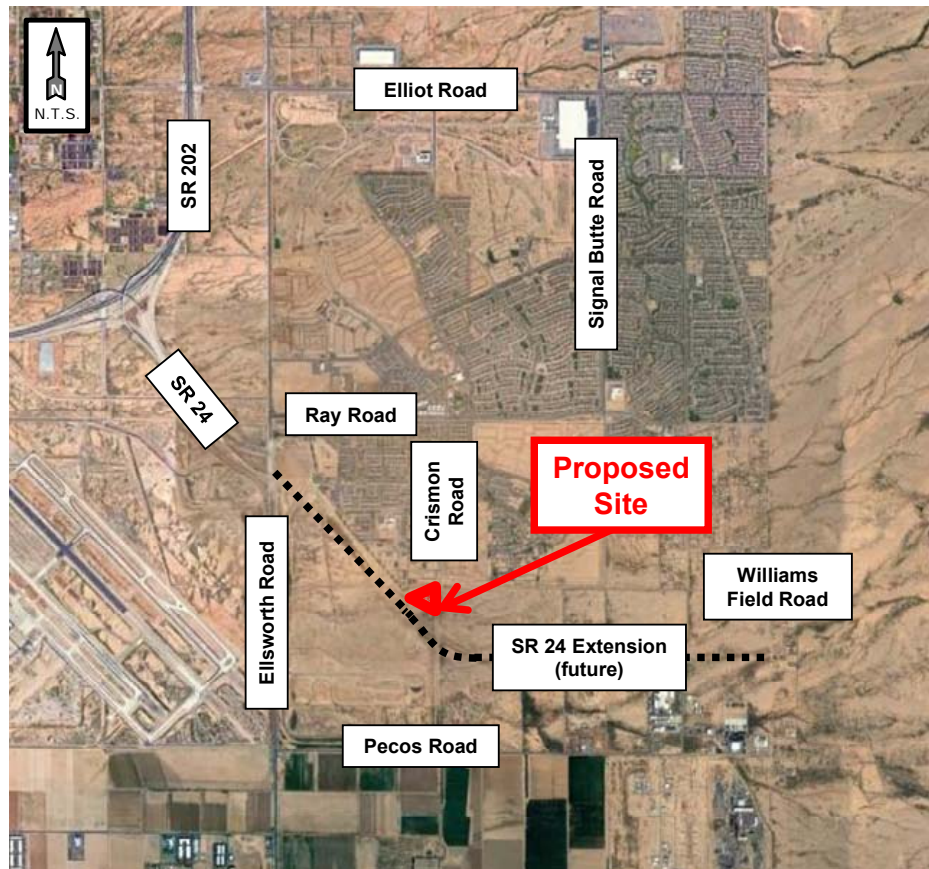


Figure 1: Proposed Site Location



Figure 2: Proposed Site Plan

PARKING ANALYSIS

Parking analysis was conducted utilizing three (3) sources suitable for the proposed multi-family residential development including:

- City of Mesa Zoning Ordinance
- *Parking Generation*, 5th edition by Institute of Transportation Engineers (ITE)
- *Shared Parking*, 3rd Edition by the Urban Land Institute (ULI)

The following sections detail the analysis results from each source.

City of Mesa Zoning Ordinance:

Per *Section 11-32-3: PARKING SPACES REQUIRED*, criteria for required parking is provided for a multitude of different land uses. As provided in *Table 11-32-3.A: Required Parking Spaces By Use*, the following criteria is applicable to the proposed development:

- Apartments, multiple residence condominiums, mixed-use residential, townhomes, patio homes, and similar multiple residence buildings: development site not located within ¼ mile radius (1320-feet) of bus rapid transit or light rail station, regardless of bedroom count – 2.1 spaces per dwelling unit

Based on the above criteria, a total of 635 parking spaces are required. It should be noted the City criteria makes no distinction regarding the number of bedrooms or mix of unit types.

ITE Parking Generation:

In 2019, the Institute of Transportation Engineers (ITE) published the fifth edition of *Parking Generation*. This document provides parking supply and demand data for 121 separate land use categories. The data provides hourly counts of parked vehicles at land uses throughout North America that can be utilized to predict future parking demand at similar land uses. This resource contains accurate parking demand data and each individual hour of the day contains a unique value.

ITE Land Use Code 221 – Multifamily Housing (Mid-Rise) contains the most appropriate data for the proposed development. The independent variable Dwelling Units and Bedrooms were utilized. It should also be noted that *Parking Generation* provides data for urban and suburban sites, including additional data

for developments near rail transit. Only the data for suburban sites not near transit was considered. The proposed site is not currently located near transit. Any future transit options that become available will likely reduce the need for parking as calculated within this study.

To provide a conservative analysis, three different calculation methods were considered to evaluate the anticipated maximum parking demand:

- Average Rate
- Weighted Equation
- 85th Percentile

Table 1 provides a summary of the *ITE Parking Generation* calculation results for the proposed multi-family residential development.

Table 1: ITE Parking Generation Results

ITE PARKING GENERATION			
LAND USE	AMOUNT	PARKING REQUIREMENT	
		RATE	SPACES
ITE LUC 221 (Multi-Family) - Average Rate	302 DU	1.34	404.68
ITE LUC 221 (Multi-Family) - Equation	302 DU	1.31	395.95
ITE LUC 221 (Multi-Family) - 85th Percentile	302 DU	1.47	443.94
ITE LUC 221 (Multi-Family) - Average Rate	475 Bedrooms	0.75	356.25
ITE LUC 221 (Multi-Family) - Equation	475 Bedrooms	0.78	369.13
ITE LUC 221 (Multi-Family) - 85th Percentile	475 Bedrooms	0.87	413.25
MAXIMUM TOTAL			444

As can be seen in the above table, the estimated maximum peak parking demand, utilizing all three calculation methods and independent variables, is 444 parked vehicles.

Therefore, a total maximum parking demand of 444 parked vehicles is anticipated. These results indicate that the proposed development is planning to provide 74 more spaces than the calculated peak demand, or a surplus of approximately 14%.

ULI Shared Parking:

The Urban Land Institute (ULI), a nonprofit education and research institute, in conjunction with the International Council of Shopping Centers (ICSC) published the third edition of *Shared Parking*. The key goal of this publication is to find a balance between providing adequate parking to support a successful development while minimizing excessive land area devoted to parking.

Figure 2-2 Base Parking Ratios, provides the following peak demand ratios based on the ULI compiled data for four (4) different types of multi-family dwelling units:

- Studio Efficiency: 1.00 per unit
- 1 Bedroom: 1.05 per unit
- 2 Bedrooms: 1.80 per unit
- 3+ Bedrooms: 2.65 per unit

Based upon the above criteria and proposed mix of dwelling unit type, the following required parking was calculated for the proposed development:

- Studio – 15 parking spaces
- One Bedroom – 142 (141.75) parking spaces
- Two Bedrooms – 236 (235.8) parking spaces
- Three Bedrooms – 56 (55.65) parking spaces
- TOTAL – 449 parking spaces

As can be seen above, the calculations indicate a total peak parking demand of 449 vehicles. These calculations also conservatively round up the value for each unit type.

The results indicate that the proposed development is planning to provide 69 more spaces than the calculated peak demand, or a surplus of approximately 13%. These calculations provide a more conservative estimate of parking needs than specified by the City criteria and are generally more in line with the ITE rates.

RESULTS

The proposed Cadence Mesa development is planning to provide a total of 518 parking spaces. Based on the City of Mesa criteria for a development not within a quarter-mile of a bus rapid transit or light-rail station, a total of 635 parking spaces are required. These results indicate that the proposed development is planning to provide 117 less spaces than the required criteria, or a deficit of approximately 18%. Any future transit options that become available will likely reduce the need for parking as calculated within this study. It should also be noted the City criteria makes no distinction regarding the number of bedrooms or mix of unit types.

The estimated peak parking demand for the Cadence Mesa development based on a conservative application of the *ITE Parking Generation* data and methodology is 444 parked vehicles. Therefore, a total maximum parking demand of 444 parked vehicles is anticipated. These results indicate that the proposed development is planning to provide 74 more spaces than the calculated peak demand, or a surplus of approximately 14%.

Based upon the ULI criteria and proposed mix of dwelling unit type, the results indicate that the Cadence Mesa development is planning to provide 69 more spaces than the calculated peak demand, or a surplus of approximately 13%. These calculations provide a more conservative estimate of parking needs than specified by the City criteria and are generally more in line with the ITE rates.

Based on an evaluation of the analysis results, the planned 518 parking spaces are anticipated to provide more than adequate capacity to accommodate the peak parking demand for the proposed Cadence Mesa development.

Please contact me at (480) 355-0237 if you have any questions or would like to discuss this memorandum.

ATTACHMENTS:

- A. City of Mesa Required Parking



Expires: 6/30/2023

ATTACHMENT A
CITY OF MESA REQUIRED PARKING

11-32-3: - PARKING SPACES REQUIRED

A. The following chart specifies the minimum parking spaces required for each permitted use (For exceptions, see Sections 11-32-5, 6, and 7):

Table 11-32-3.A: Required Parking Spaces By Use		
Use	Minimum Standard	
Residential		
Single Residence, detached or attached, including Manufactured Home Subdivisions	2 spaces per dwelling which may be in tandem with Zoning Administrator approval	
Multiple Residence (Typical)	See sub categories, below	
Apartments, multiple residence condominiums, and mixed-use residential, townhomes, patio homes and similar multiple residence buildings: development site located within ¼ mile radius (1320-feet) of bus rapid transit or light rail station, regardless of bedroom count	9 or fewer total units	1.4 spaces per dwelling unit
	10-25 total units	1.3 spaces per dwelling unit
	26 or more total units	1.2 spaces per dwelling unit
Apartments, multiple residence condominiums, mixed-use residential, townhomes, patio homes, and similar multiple residence buildings: development site not located within ¼ mile radius (1320-feet) of bus rapid transit or light rail station, regardless of bedroom count	2.1 spaces per dwelling unit	
Group Residential (Boarding House, Assisted Living, Group Homes for the Handicapped in excess of 10 persons)	1.2 spaces per dwelling unit for development with distinguishable dwelling units 1.0 space for each room plus 2 additional spaces for development with congregate dining and no distinguishable separate dwelling units	
Group Home for the Handicapped (10 or less persons)	Same as Single Residence	

Live-Work Units	2.1 spaces per unit
Residential Care, General (Nursing Home, Hospice)	1.0 space per room or dwelling unit plus 2 additional spaces
RV Parks	1 full-sized space for each RV space, plus 1 guest parking space per 10 (or fraction thereof) RV spaces for the overall development
RV Subdivisions	1 full-sized space and 1 golf cart space for each lot; plus 1 full-sized guest parking space per 10 (or fraction thereof) dwelling units for the overall development
Manufactured Home Parks	2 full-sized space for each lot (may include tandem spaces); plus 1 guest parking space per 10 (or fraction thereof) dwelling units for the overall development
Public Assembly and Schools	
Theaters, auditoriums, assembly halls, places of worship, clubs, lodges and fraternal buildings, funeral homes, community centers, libraries	1 space per 75 square feet used for public assembly
Museums	1 space per 250 square feet used for public assembly plus accessory uses
Stadiums	1 space per 5 seats plus 1 space per 300 square feet for accessory uses
School, kindergarten through 9th grade	1 space per 75 feet for public assembly space, such as auditoriums and theaters, and 1 space per 600 square feet for all other areas
High schools, academies, colleges, universities, trade or vocational schools	1 space per 200 square feet
Health Care	

Medical/dental offices and outpatient clinics	1 space per 200 square feet
Hospitals, hospices, nursing, and convalescent homes	1 space per 400 square feet
Day care centers	1 space per 375 square feet
Group Commercial Developments	
Shell buildings (no specified use)	1 space per 275 square feet
Independent Commercial Buildings and Uses	
General offices, retail, and services	1 space per 375 square feet
General auto repair, garages, service stations, car washes, and drive-through lubrication shops	1 space per 375 square feet, including service bays, wash tunnels, and retail areas
Hotels and motels	1 space per room or suite of rooms with individual exits plus ancillary use requirements
Eating and Drinking Establishments (no drive through window)	1 space per 75 square feet for indoor area, and 1 space per 200 square feet for outdoor seating area
Eating Establishments (with drive-through window and associated queuing drive aisle)	1 space per 100 square feet for indoor area, and 1 space per 200 square feet for outdoor seating area
Outdoor sales and service areas (car lots, plant nurseries, building supplies, etc.)	1 space per 375 square feet of sales and service building, but not less than 4 spaces per use
Temporary Outdoor Uses	
Swap Meets (See Section 11-20-29)	1 space per 300 square feet of designated vendor area
Farmer's Markets (See Section 11-20-29)	1 space per 400 square feet of designated vendor area

Recreation	
Bowling centers	5 spaces per lane plus ancillary use requirements
Golf driving range	1 space per tee plus ancillary use requirements
Miniature golf, amusement parks, batting ranges, and water slides	1 space per 500 square feet of outdoor recreations area plus ancillary use requirements
Health space and clubs, gyms, and tennis, handball, and racquetball courts and clubs	1 space per 100 square feet, excluding courts, plus 2 spaces per court
Skating rinks and dance halls	1 space per 75 square feet used for recreational activities plus ancillary use requirements
Group Industrial Buildings and Uses	
Shell buildings (no specified use)	75% at 1 space per 500 square feet plus 25% at 1 space per 375 square feet
Independent Industrial Buildings and Uses	
Mini-storage (dead storage only)	4 spaces plus 2 for manager's quarters; Drive aisles between buildings shall maintain minimum distance of 24 feet
Warehousing and Storage, excluding Mini-storage	1 space per 900 square feet
Industrial	1 space per 600 square feet
Airport Buildings and Uses	
Aircraft Hangars	2 per aircraft, plus ancillary use requirements
Public Facilities and Uses	
Fire stations	1 space per bed, plus 1 space per 75 square feet for Community Room

Police Substations	1 space per 300 square feet, plus 1 space per 75 square feet for Community Room, plus ancillary use requirements
--------------------	--

B. **Basis of Calculation.** The on-site parking requirements specified in this Section are based on gross floor area unless otherwise stated.

1. In the case of mixed uses, the total requirements for off-street parking spaces shall be the sum of the requirements of the various uses computed separately as specified in this Section, and the off-street parking space for one use shall not be considered as providing the required off-street parking for any other use, unless a Shared Parking Plan has been approved in accordance with the requirements of Section 11-32-5.
2. In case of fractional results in calculating parking requirements from the chart above, the required number shall be rounded up to the nearest whole number.

C. **Maximum Parking Spaces.** The number of parking spaces provided by any development in surface parking lots shall not exceed 125% of the minimum required spaces in Table 11-32-3(A), except as follows:

1. Office developments may provide higher parking ratio not to exceed 8 spaces per 1,000 square feet GFA when office development includes the following:
 - a. A minimum of 60,000 square feet.
 - b. The minimum density ratio of employees per gross floor area shall be 1 employee per 200 square feet.
2. Parking within the building footprint of a structure (e.g., rooftop parking, below grade parking, multi-level parking structure);
3. When a change in use to an existing development causes a lower parking requirement;
4. Parking spaces managed for shared parking;
5. An Administrative Use Permit is required to provide more surface parking than the maximum standard and additional landscape is required in compliance with Section 11-33-4, Interior Parking Lot Landscaping.
6. Phased projects do not need to comply with the maximum parking space requirement until the final phase is constructed.

D. **Covered Spaces.** Covered parking spaces shall be provided as follows:

1. Single-residences shall provide a minimum of 2 covered parking spaces per unit.
2. Multiple-residence projects shall provide a minimum of 1 covered parking space per unit.
3. Office-use developments requiring a minimum of 10 parking spaces or more shall provide a minimum of 1 covered parking space per office or suite plus 1 additional space.
4. Covered spaces may be counted concurrently with the minimum aggregate parking space requirements for the development.

E. **Minimum Number.** Unless otherwise specifically stated in this Ordinance, all uses, except single residences,

shall provide at least 4 on-site parking spaces.

- F. **Credit for On-Street Spaces.** On-street parking spaces located immediately adjacent to the frontage of properties in the EO, MX, DB, and DC districts or districts with a "-U" designator, may be counted toward required off-street parking for non-residential uses. One on-street parking space may be substituted for each required off-street space. These provisions only apply to street frontages where on-street parking is allowed and provided. The parking space credit shall be determined at the time of site plan approval.
- G. **Uses not Specified.** The parking requirement for any use not listed in Table 11-32-3(A) shall be determined by the Zoning Administrator based upon the requirements for the most similar comparable use, the particular characteristics of the proposed use, and any other relevant data regarding parking demand. In order to make this determination, the Zoning Administrator may require the applicant to submit a parking demand study or other information, at the applicant's cost.
- H. **Credit for On-Street Spaces.** On-street parking spaces immediately adjacent to the frontage of properties in the EO, ME, PE, and DC districts or districts with a "-U" designator, may be counted toward required off-street parking for non-residential uses. One on-street parking space may be substituted for each required off-street space. These provisions only apply to street frontages where on-street parking is allowed and provided. The parking space credit shall be determined at the time of site plan approval.

(Ord. No. 5281, 5-4-15)