MacKenzie
Engineering & Planning, Inc.
1172 SW 30th Street, Suite 500 • Palm City • Florida • 34990
(772) 286-8030 • www.mackenzieengineeringinc.com

August 4, 2020

Mr. Clyde Cuffy
Engineering Department
121 SW Port St. Lucie Boulevard, Building B
Port St. Lucie, FL 34984

Re: Verano South PUD 1, Pod G
Parking Justification

MacKenzie Engineering and Planning, Inc. (MEP) prepared this Parking Justification for the proposed two bedroom attached Villas. The applicant proposes one garage parking space and one driveway parking space.

This request is in-line with the existing City of Port St. Lucie code *Sec. 158.221.C.7.A* for dwelling units without a garage providing two spaces per dwelling unit with two or more bedrooms. Additionally, The ITE's report, *Parking Generation Manual (5th Edition), Multi- Family Housing (Low-Rise)* provides parking data for multi-family housing. The 85th percentile peak period parking demand per bedroom is 0.88 spaces per bedroom.

The applicant proposes a parking rate of 1 space per bedroom.

Based on the parking rate of 1 space per bedroom, the proposed Villas are projected to have an adequate parking supply.

Shaun G. MacKenzie LICENSE No. 61751 STATE OF FLORIDA PROFESSIONAL ENGINEER

THIS ITEM HAS BEEN DIGITALLY SIGNED AND SEALED BY SHAUN G. MACKENZIE, P.E. ON THE DATE ADJACENT TO THE SEAL.
PRINTED COPIES OF THIS DOCUMENT ARE NOT CONSIDERED SIGNED AND SEALED AND THE SIGNATURE MUST BE VERIFIED ON ANY ELECTRONIC COPIES.
MACKENZIE ENGINEERING AND PLANNING, INC.
1172 SW 30TH STREET, SUITE 500
PALM CITY, FL 34990
CERTIFICATE OF AUTHORIZATION 29013
SHAUN G. MACKENZIE, P.E. NO. 61751

Digitally signed by Shaun G MacKenzie
Date: 2020.08.04 16:38:38 -04'00'

Shaun G. MacKenzie P.E.
PE Number 61751

002024
August 2020
© MacKenzie Engineering and Planning, Inc.
CA 29013

Land Use: 220 Multifamily Housing (Low-Rise)

Description

Low-rise multifamily housing includes apartments, townhouses, and condominiums located within the same building with at least three other dwelling units and with one or two levels (floors) of residence. Multifamily housing (mid-rise) (Land Use 221), multifamily housing (high-rise) (Land Use 222), and affordable housing (Land Use 223) are related land uses.

Time of Day Distribution for Parking Demand

The following table presents a time-of-day distribution of parking demand (1) on a weekday (10 study sites) and a Saturday (11 study sites) in a general urban/suburban setting and (2) on a weekday (three study sites) and a Saturday (three study sites) in a dense multi-use urban setting.

	Percent of Peak Parking Demand			
	General Urban/Suburban		Dense Multi-Use Urban	
Hour Beginning	Weekday	Saturday	Weekday	Saturday
12:00–4:00 a.m.	100	93	86	100
5:00 a.m.	97	100	100	94
6:00 a.m.	90	98	94	91
7:00 a.m.	77	96	81	85
8:00 a.m.	56	92	58	79
9:00 a.m.	45	80	56	76
10:00 a.m.	40	78	53	71
11:00 a.m.	37	71	58	74
12:00 p.m.	36	68	56	68
1:00 p.m.	36	66	53	68
2:00 p.m.	37	65	47	68
3:00 p.m.	43	68	56	56
4:00 p.m.	45	70	53	59
5:00 p.m.	55	73	61	53
6:00 p.m.	66	77	81	50
7:00 p.m.	73	81	67	56
8:00 p.m.	77	82	61	65
9:00 p.m.	86	86	64	74
10:00 p.m.	92	87	75	85
11:00 p.m.	97	92	86	91

Additional Data

In prior editions of *Parking Generation*, the low-rise multifamily housing sites were further divided into rental and condominium categories. An investigation of parking demand data found no clear differences in parking demand between the rental and condominium sites within the ITE database. As more data are compiled for future editions, this land use classification can be reinvestigated.

The average parking supply ratios for the study sites with parking supply information are shown in the table below.

		Parking Supply Ratio	
Setting	Proximity to Rail Transit	Per Dwelling Unit	Per Bedroom
Dense Multi-Use Urban	Within ½ mile of rail transit	0.6 (12 sites)	0.4 (10 sites)
	Not within ½ mile of rail transit	0.9 (18 sites)	0.6 (18 sites)
General Urban/ Suburban	Within ½ mile of rail transit	1.5 (10 sites)	0.9 (10 sites)
	Not within ½ mile of rail transit	1.7 (52 sites)	1.0 (52 sites)

The sites were surveyed in the 1980s, the 1990s, the 2000s, and the 2010s in Alberta (CAN), California, Colorado, District of Columbia, Maryland, Massachusetts, Oregon, Pennsylvania, Texas, Washington, and Wisconsin.

It is expected that the number of bedrooms and number of residents are likely correlated to the parking demand generated by a residential site. Parking studies of multifamily housing should attempt to obtain information on occupancy rate and on the mix of residential unit sizes (i.e. number of units by number of bedrooms at the site complex). Future parking studies should also indicate the number of levels contained in the residential building.

Source Numbers

72, 124, 152, 154, 209, 215, 216, 218, 219, 255, 257, 314, 414, 419, 432, 437, 505, 512, 533, 535, 536, 537, 544, 545, 577, 578, 579, 580, 584, 585, 587

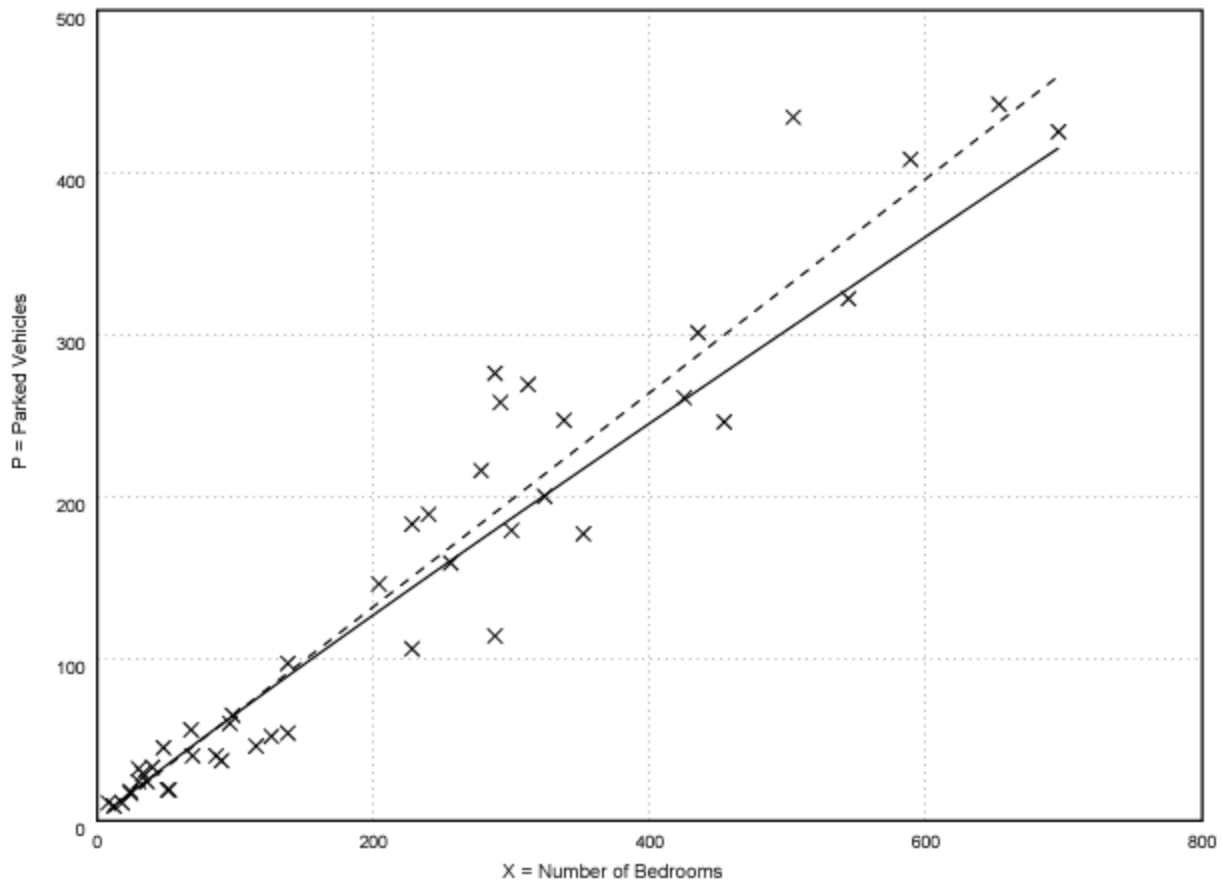
Multifamily Housing (Low-Rise)
(220)

Peak Period Parking Demand vs: Bedrooms
On a: Weekday (Monday - Friday)
Setting/Location: General Urban/Suburban (no nearby rail transit)
Peak Period of Parking Demand: 11:00 p.m. - 6:00 a.m.
Number of Studies: 45
Avg. Num. of Bedrooms: 215

Peak Period Parking Demand per Bedroom

Average Rate	Range of Rates	33rd / 85th Percentile	95% Confidence Interval	Standard Deviation (Coeff. of Variation)
0.66	0.37 - 1.38	0.61 / 0.86	0.62 - 0.70	0.15 (23%)

Data Plot and Equation



Fitted Curve Equation: Ln(P) = 0.95 Ln(X) - 0.19

R^2= 0.93

Multifamily Housing (Low-Rise)
(220)

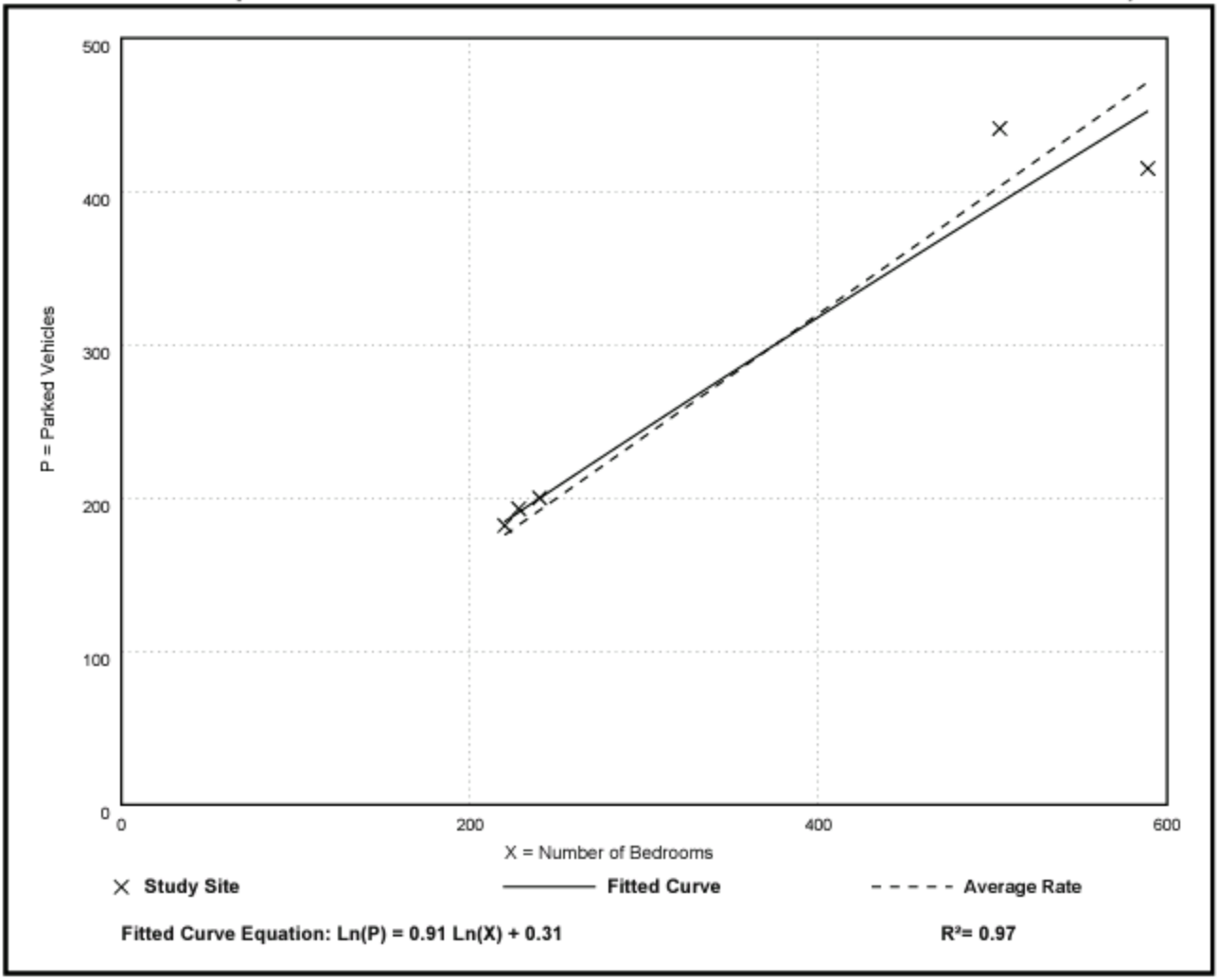
Peak Period Parking Demand vs: Bedrooms
On a: Saturday
Setting/Location: General Urban/Suburban (no nearby rail transit)
Peak Period of Parking Demand: 11:00 p.m. - 7:00 a.m.
Number of Studies: 5
Avg. Num. of Bedrooms: 356

Peak Period Parking Demand per Bedroom

Average Rate	Range of Rates	33rd / 85th Percentile	95% Confidence Interval	Standard Deviation (Coeff. of Variation)
0.80	0.70 - 0.88	0.82 / 0.88	***	0.08 (10%)

Data Plot and Equation

Caution – Small Sample Size



Fitted Curve Equation: Ln(P) = 0.91 Ln(X) + 0.31

R^2= 0.97