



DiPrete Engineering

December 7, 2022

James D. Rabbitt, AICP, Planning Director
South Kingstown Planning Department
180 High Street
Wakefield, RI 02879

RE: Supplemental Parking Analysis
South County Commons – District 5 Apartments
South Kingstown, RI
DE Project #: 0267-059-A08

Dear Mr. Rabbitt,

On behalf of the owner, Suffolk Realty, LLC, DiPrete Engineering respectfully submits this parking analysis to supplement the Master Plan submission for the Comprehensive Permit for the above-referenced project. The parking analysis is broken down into the following topics:

- Apartment Parking Zoning Requirement
- Apartment Parking Property Manager Needs
- Hotel Parking Zoning Requirement
- Hotel Parking Developer Needs
- Existing Parking Available
- Future Parking

For what the applicant believes the actual parking needs are (herein referred to as Apartment Parking Property Manager Needs, and Hotel Parking Developer Needs), we evaluated data from 3 categories:

- 1) Published Studies. Included is data published by the Institute of Transportation Engineers (ITE) for parking requirements for suburban midrise apartments by unit and by bedroom, and parking demands for business class hotels.
- 2) Observed/actual parking counts of a similar apartment project in North Kingstown, and for the Fairfield Inn on the subject property.
- 3) Interviews of apartment managers and the hotel manager for what they believe their needs are and trends they are seeing in their industry.

Apartment Parking Zoning Requirement:

Per Section 711 “Minimum Off-Street Parking Requirements” of the South Kingstown Zoning Ordinance, “Apartments or Multi-Household Dwellings” require a minimum of 2 parking spaces per unit. Given the proposed 70 unit apartment building, 140 parking spaces would be required by Ordinance. It is important to note that the Ordinance does not take into consideration whether the unit is a 1-bedroom, 2-bedroom, 3-bedroom or more bedrooms per unit.

Apartment Parking Property Manager Needs:

Our research and experience on similar apartment developments has found that the required number of parking spaces correlates more closely with bedroom count as opposed to units. For example, a 1-bedroom unit needs 1 space or less, and 2-bedroom unit needs 2 spaces or less. The proposed apartment building includes a mixture of 1-bedroom and 2-bedroom units with a breakdown of 36 units and 34 units respectively. Assuming the 1 space per bedroom maximum, the proposed apartment building would need 104 parking spaces. The proposed apartment building provides 106 parking

spaces, which is adequate to meet the 1 space per bedroom requirement. Additional data is provided in the Appendix regarding parking counts of existing similar apartment buildings to qualify the assumptions. Our recent conversations with apartment property managers on parking requirements not only indicates that they measure it by bedroom, but they also see the parking demand dropping. They attribute some of this to the increasing number of tenants that work from home and utilize a second bedroom as an office. This estimate is consistent with the ITE studies.

Hotel Parking Zoning Requirement:

Per Section 711 "Minimum Off-Street Parking Requirements" of the South Kingstown Zoning Ordinance, "Hotels and Motels and Bed & Breakfast" require 1 space for every unit/room plus 2 spaces for every 12 rooms or fraction thereof. Given the existing 100 room hotel, 117 parking spaces would be required by Ordinance.

Hotel Parking Property Manager Needs:

In consulting with the Fairfield Inn management company (who also operates several other similar regional hotels), the actual number of parking spaces needed to safely and conveniently operate the hotel is 1 space or less per room (including hotel staff) which is 100 parking spaces. This is because there are very limited overnight hotel staff (2-3 employees) during peak parking times and not every hotel guest has their own vehicle. A majority of hotel staff (cleaning/maintenance) are during daytime hours when guest cars/parking have lesser peak demand. Additional data is provided in the Appendix regarding parking counts of the existing Fairfield Inn during various peak times to qualify the assumptions. It was also made clear from conversations with the hotel management company that they see the trend towards even fewer parking requirements being necessary. This is a reflection on their guests being more dependent on ride sharing apps and less on rental cars companies. The value we used is more conservative than the ITE number as the ITE hotel counts were lower than the 1 space per room that we are recommending and was based on a business class hotel. Leisure class hotels have a greater number of families that arrive in 1 vehicle. The management staff for the hotel believe they have a blended guest characteristic.

Existing Parking Available:

In regard to the parking for the existing Fairfield Inn and Phase 1 approval, there are currently 135 parking spaces to the east of Fairfield Way (adjacent/near the hotel). This does not account for the additional 34 spaces in the "overflow" lot (west of Fairfield Way). There are currently an additional 18 parking spaces (135 existing vs. 117 required by zoning) in the vicinity of the existing hotel without the need to use the "overflow" lot. Therefore, the existing 34 spaces in the "overflow" lot can be utilized by the proposed apartment building.

Future Parking:

If the proposed apartment building and associated parking is approved and built, there will be 241 total parking spaces available for the 100 room hotel and 70 unit apartment building. This includes the 135 existing spaces east of Fairfield Way and the 106 spaces west of Fairfield Way (existing 34 "overflow" spaces plus the 72 new apartment spaces). Upon construction completion, the District 5 campus will have excess parking of about 36 spaces given the real world demands.

Summary of Parking:

- Apartment Parking Zoning Requirement
 - 2 spaces per unit @ 70 units = 140 spaces
- Apartment Parking Property Manager Needs
 - 1 space per bedroom @ 36 x 1-bed and 34 x 2-bed = 104 spaces (106 provided)
- Hotel Parking Zoning Requirement
 - 1 space per room @ 100 rooms plus 2 spaces for every 12 rooms or fraction thereof = 117 spaces
- Hotel Parking Property Manager Needs
 - 1 space per room (includes staff) = 100 spaces
 - Very limited overnight hotel staff (2-3 employees) during peak parking time
 - Majority of hotel staff (cleaning/maintenance) are during daytime hours when guest cars/parking have lesser peak demand
- Existing Parking Available
 - 135 spaces east of Fairfield Way (adjacent to building)
 - 34 "overflow" spaces west of Fairfield Way
- Future Parking
 - 135 spaces east of Fairfield Way
 - 106 spaces west of Fairfield Way (34 "overflow" plus 72 new apartment spaces)

Additional Notes:

- The hotel and apartment management companies are experienced operators and understand the parking demands for their businesses.
- There is no benefit to the hotel and apartment companies to being under parked (insufficient parking). If there is insufficient parking for the use, there will be guest/tenant complaints and vacancies within the buildings. They believe that the future demand will be less than the parking being provided.
- Reduced parking requirements allows for decreased impervious surface, decreased stormwater runoff, and less need for stormwater quality treatment.
- The District 5 campus anticipated 3 buildings: 1.) the hotel which is built and operating, 2.) a future restaurant or office which is now being revised to an apartment building, and 3.) a future restaurant or bank which is not yet built or nearing construction. This 3rd building had more parking spaces in front of the building which are not yet built.

Conclusions:

- After the proposed apartments and additional apartment parking is built, the District 5 campus will have excess parking of about 36 spaces given the real world demands.
- When the use of the 3rd building (eastern front pad site) is known, the shared parking allowance as spelled out in the Route 1 Special Management District zoning should be re-evaluated against the actual demands existing at that time.

Please feel free to contact me with any questions. We look forward to further discussing with the Planning Staff, Technical Review Committee, and Planning Board.

Sincerely,
DiPrete Engineering Associates, Inc.



Eric Prive, PE
Senior Project Manager
eprive@diprete-eng.com

APPENDICES

- Institute of Transportation Engineers (ITE) – Parking Generation Manual, 5th Edition
- Observed/Actual Parking Counts of Similar Projects

Institute of Transportation Engineers (ITE)

Parking Generation Manual, 5th Edition

Land Use: 221 Multifamily Housing (Mid-Rise)

Description

Mid-rise multifamily housing includes apartments, townhouses, and condominiums located within the same building with at least three other dwelling units and with between three and 10 levels (floors) of residence. Multifamily housing (low-rise) (Land Use 220), 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 on a weekday (one general urban/suburban study site), a Saturday (two general urban/suburban study sites), and a Sunday (one dense multi-use urban study site).

Hour Beginning	Percent of Peak Parking Demand		
	Weekday	Saturday	Sunday
12:00–4:00 a.m.	100	100	100
5:00 a.m.	94	99	–
6:00 a.m.	83	97	–
7:00 a.m.	71	95	–
8:00 a.m.	61	88	–
9:00 a.m.	55	83	–
10:00 a.m.	54	75	–
11:00 a.m.	53	71	–
12:00 p.m.	50	68	–
1:00 p.m.	49	66	33
2:00 p.m.	49	70	40
3:00 p.m.	50	69	27
4:00 p.m.	58	72	13
5:00 p.m.	64	74	33
6:00 p.m.	67	74	60
7:00 p.m.	70	73	67
8:00 p.m.	76	75	47
9:00 p.m.	83	78	53
10:00 p.m.	90	82	73
11:00 p.m.	93	88	93

Additional Data

In prior editions of *Parking Generation*, the mid-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.

Setting	Proximity to Rail Transit	Parking Supply Ratio	
		Per Dwelling Unit	Per Bedroom
Center City Core	Within ½ mile of rail transit	1.1 (15 sites)	1.0 (12 sites)
Dense Multi-Use Urban	Within ½ mile of rail transit	1.2 (39 sites)	0.9 (34 sites)
	Not within ½ mile of rail transit	1.2 (65 sites)	0.8 (56 sites)
General Urban/Suburban	Within ½ mile of rail transit	1.5 (25 sites)	0.8 (12 sites)
	Not within ½ mile of rail transit	1.7 (62 sites)	1.0 (39 sites)

The sites were surveyed in the 1980s, the 1990s, the 2000s, and the 2010s in California, Colorado, District of Columbia, Maryland, Massachusetts, New Jersey, New York, Oregon, Virginia, 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

21, 209, 247, 255, 277, 401, 402, 419, 505, 512, 522, 533, 535, 536, 537, 538, 545, 546, 547, 575, 576, 577, 579, 580, 581, 583, 584, 585, 587

Multifamily Housing (Mid-Rise) (221)

Peak Period Parking Demand vs: Dwelling Units

On a: **Weekday (Monday - Friday)**

Setting/Location: General Urban/Suburban (no nearby rail transit)

Peak Period of Parking Demand: 10:00 p.m. - 5:00 a.m.

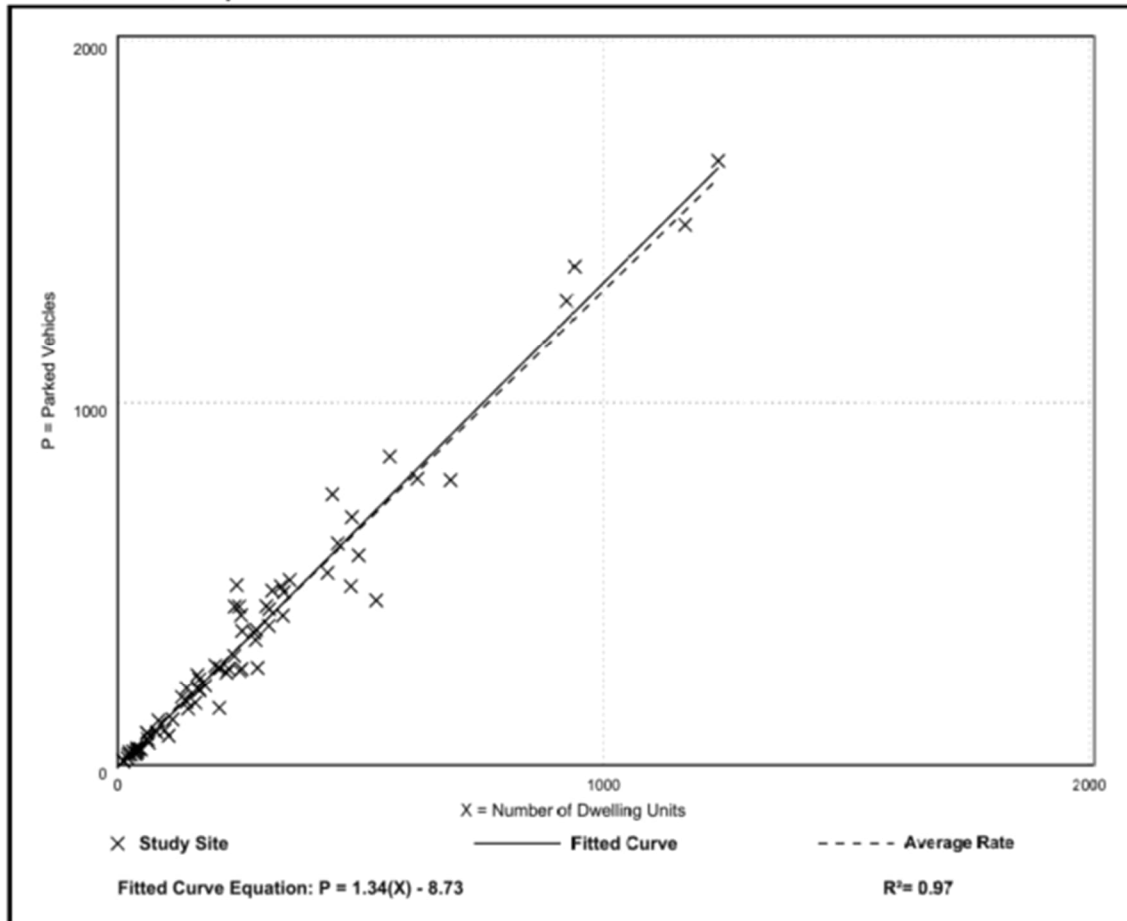
Number of Studies: 73

Avg. Num. of Dwelling Units: 261

Peak Period Parking Demand per Dwelling Unit

Average Rate	Range of Rates	33rd / 85th Percentile	95% Confidence Interval	Standard Deviation (Coeff. of Variation)
1.31	0.75 - 2.03	1.13 / 1.47	1.26 - 1.36	0.22 (17%)

Data Plot and Equation



Multifamily Housing (Mid-Rise) (221)

Peak Period Parking Demand vs: Dwelling Units

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: 3

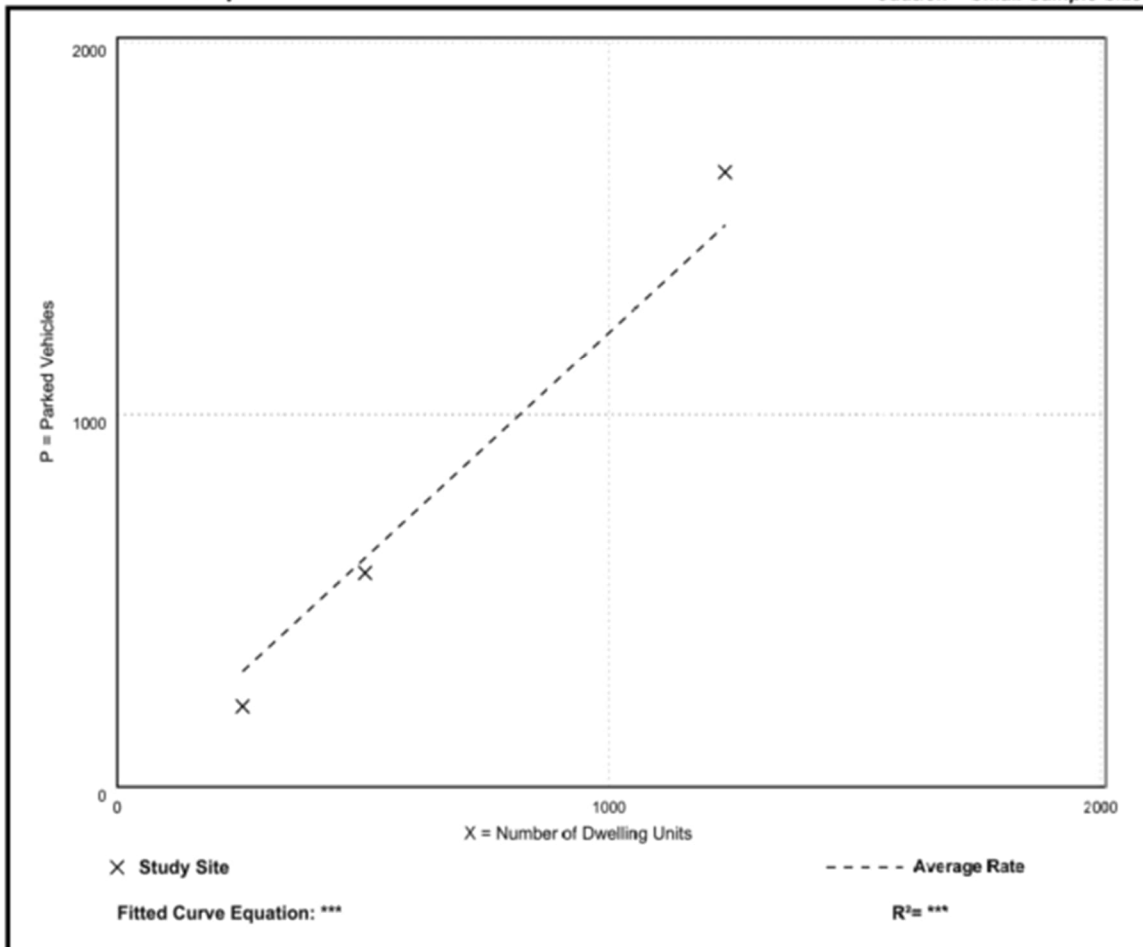
Avg. Num. of Dwelling Units: 665

Peak Period Parking Demand per Dwelling Unit

Average Rate	Range of Rates	33rd / 85th Percentile	95% Confidence Interval	Standard Deviation (Coeff. of Variation)
1.22	0.84 - 1.33	0.94 / 1.33	***	0.20 (16%)

Data Plot and Equation

Caution – Small Sample Size



Multifamily Housing (Mid-Rise) (221)

Peak Period Parking Demand vs: Dwelling Units

On a: **Sunday**

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: 1

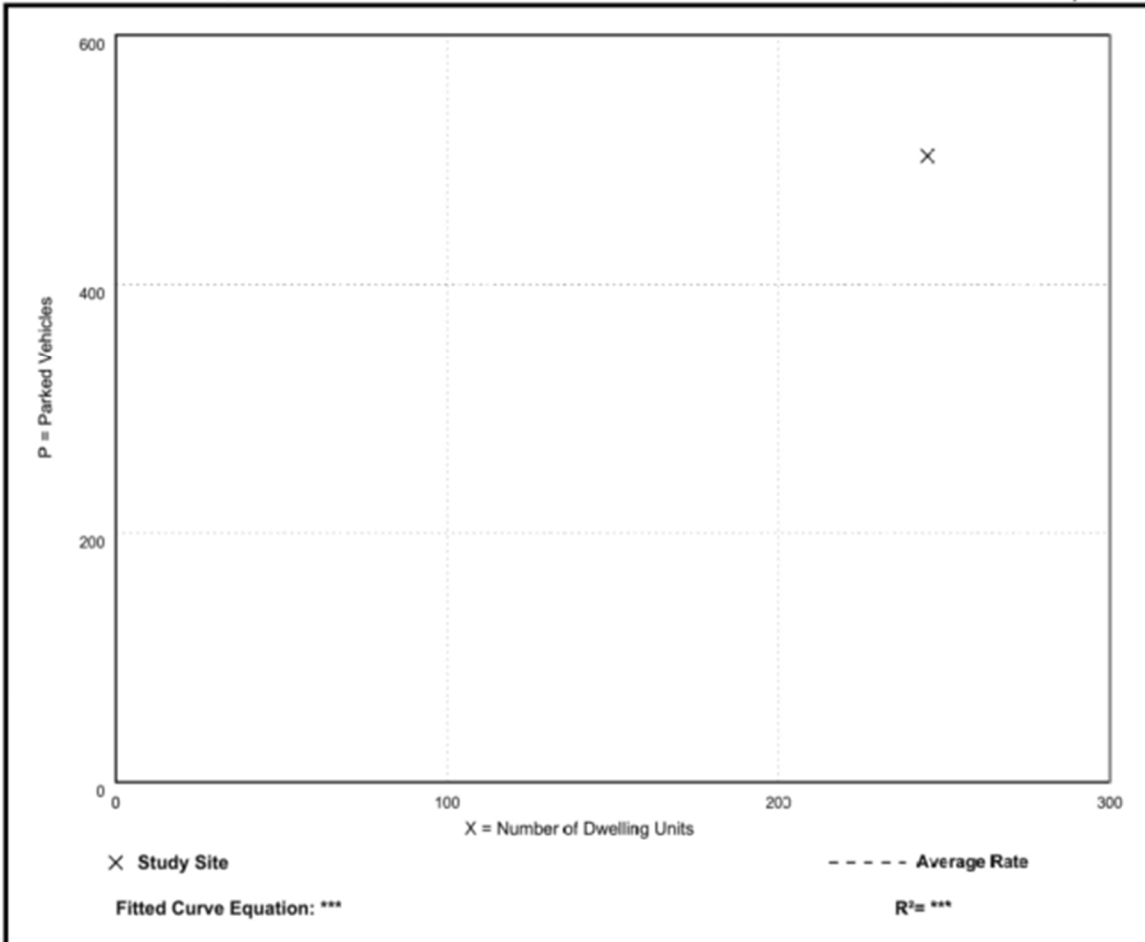
Avg. Num. of Dwelling Units: 245

Peak Period Parking Demand per Dwelling Unit

Average Rate	Range of Rates	33rd / 85th Percentile	95% Confidence Interval	Standard Deviation (Coeff. of Variation)
2.05	2.05 - 2.05	*** / ***	***	*** (***)

Data Plot and Equation

Caution – Small Sample Size



Multifamily Housing (Mid-Rise) (221)

Peak Period Parking Demand vs: Occupied Dwelling Units

On a: Weekday (Monday - Friday)

Setting/Location: General Urban/Suburban (no nearby rail transit)

Peak Period of Parking Demand: 10:00 p.m. - 5:00 a.m.

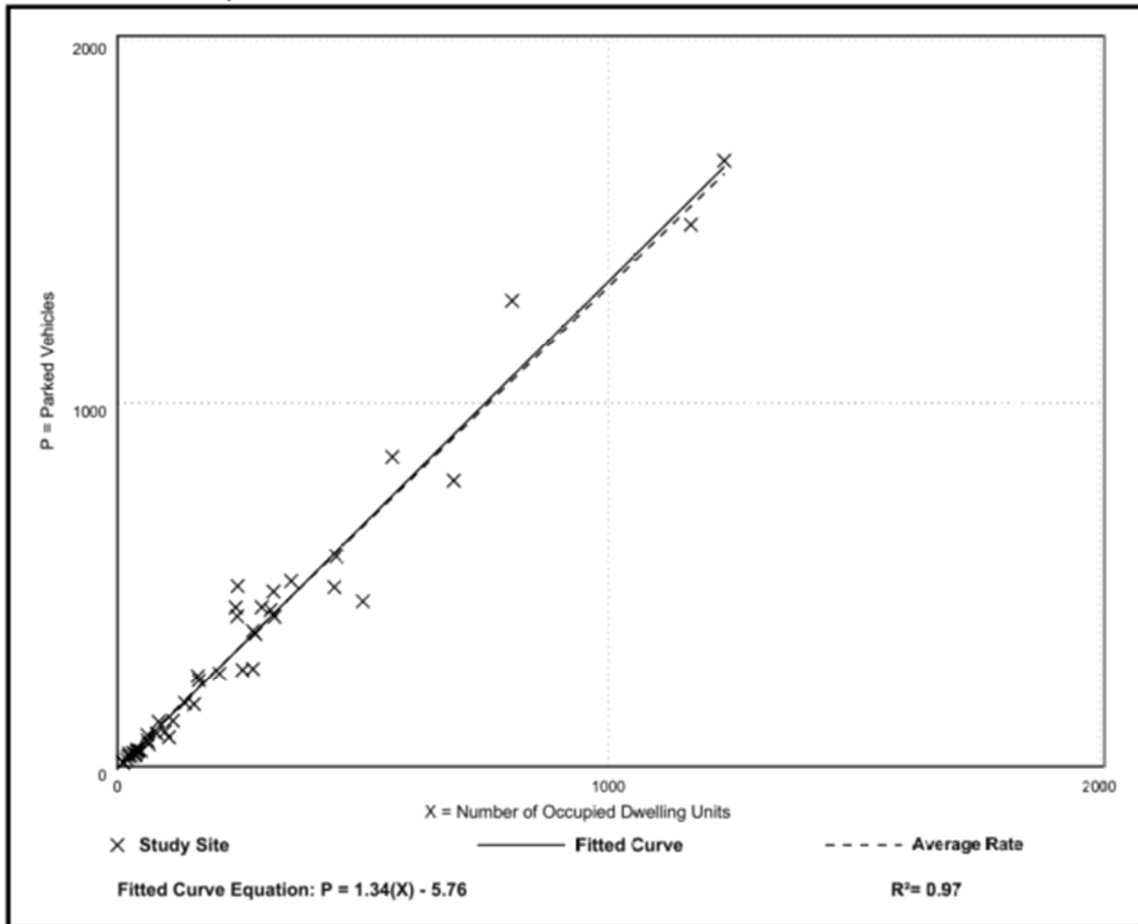
Number of Studies: 48

Avg. Num. of Occupied Dwelling Units: 234

Peak Period Parking Demand per Occupied Dwelling Unit

Average Rate	Range of Rates	33rd / 85th Percentile	95% Confidence Interval	Standard Deviation (Coeff. of Variation)
1.32	0.75 - 2.03	1.04 / 1.51	1.25 - 1.39	0.24 (18%)

Data Plot and Equation



Multifamily Housing (Mid-Rise) (221)

Peak Period Parking Demand vs: Occupied Dwelling Units

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: 2

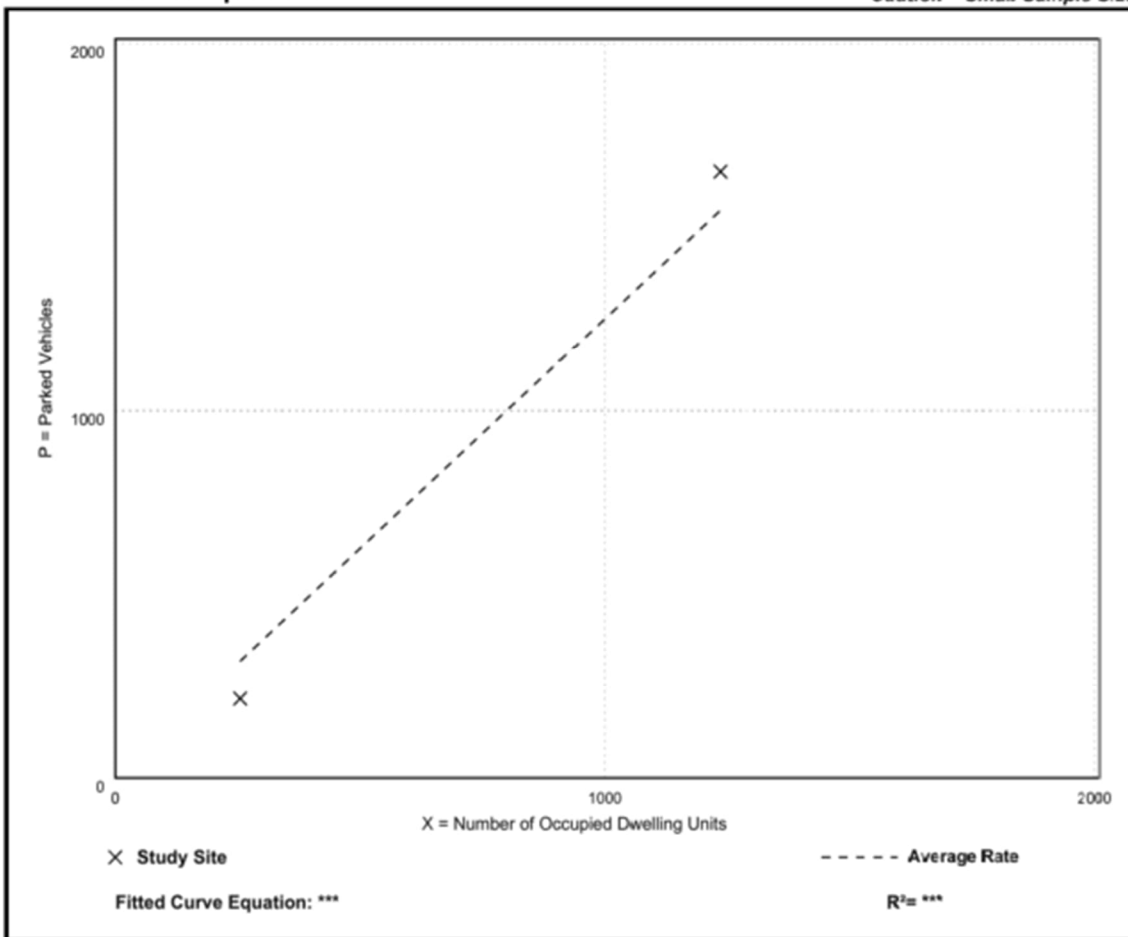
Avg. Num. of Occupied Dwelling Units: 746

Peak Period Parking Demand per Occupied Dwelling Unit

Average Rate	Range of Rates	33rd / 85th Percentile	95% Confidence Interval	Standard Deviation (Coeff. of Variation)
1.25	0.84 - 1.33	*** / ***	***	*** (***)

Data Plot and Equation

Caution – Small Sample Size



Multifamily Housing (Mid-Rise) (221)

Peak Period Parking Demand vs: Occupied Dwelling Units

On a: **Sunday**

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: 1

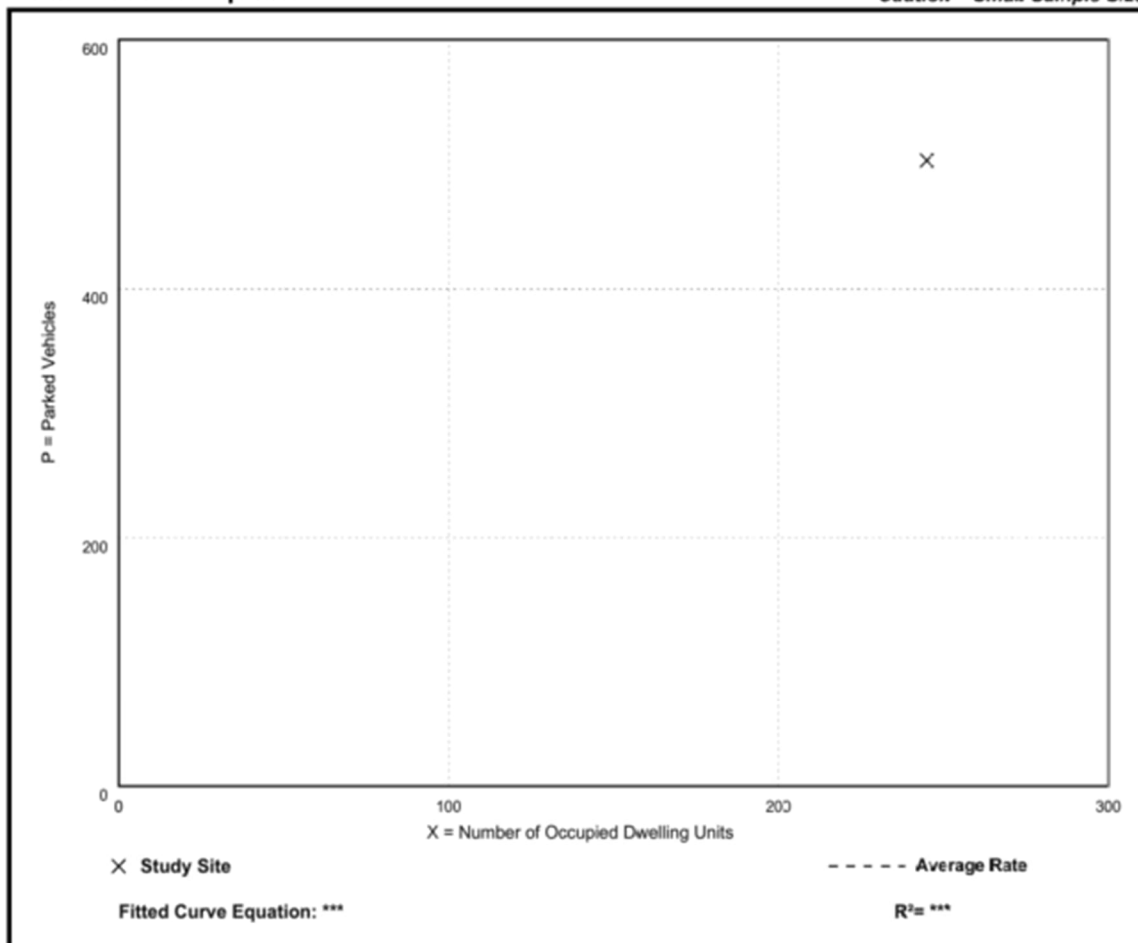
Avg. Num. of Occupied Dwelling Units: 245

Peak Period Parking Demand per Occupied Dwelling Unit

Average Rate	Range of Rates	33rd / 85th Percentile	95% Confidence Interval	Standard Deviation (Coeff. of Variation)
2.05	2.05 - 2.05	*** / ***	***	*** (***)

Data Plot and Equation

Caution – Small Sample Size



Multifamily Housing (Mid-Rise) (221)

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: 10:00 p.m. - 5:00 a.m.

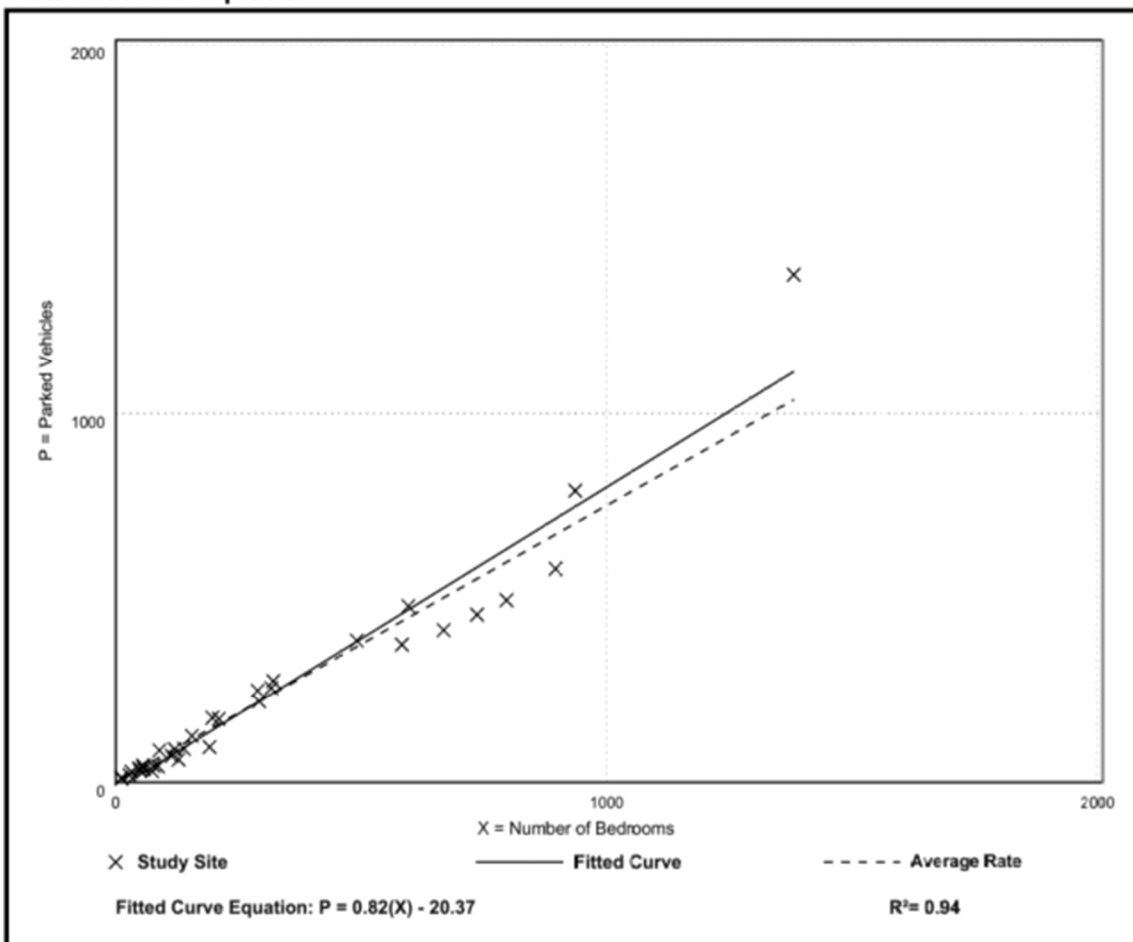
Number of Studies: 35

Avg. Num. of Bedrooms: 294

Peak Period Parking Demand per Bedroom

Average Rate	Range of Rates	33rd / 85th Percentile	95% Confidence Interval	Standard Deviation (Coeff. of Variation)
0.75	0.41 - 1.00	0.65 / 0.87	0.70 - 0.80	0.15 (20%)

Data Plot and Equation



Multifamily Housing (Mid-Rise) (221)

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: 1

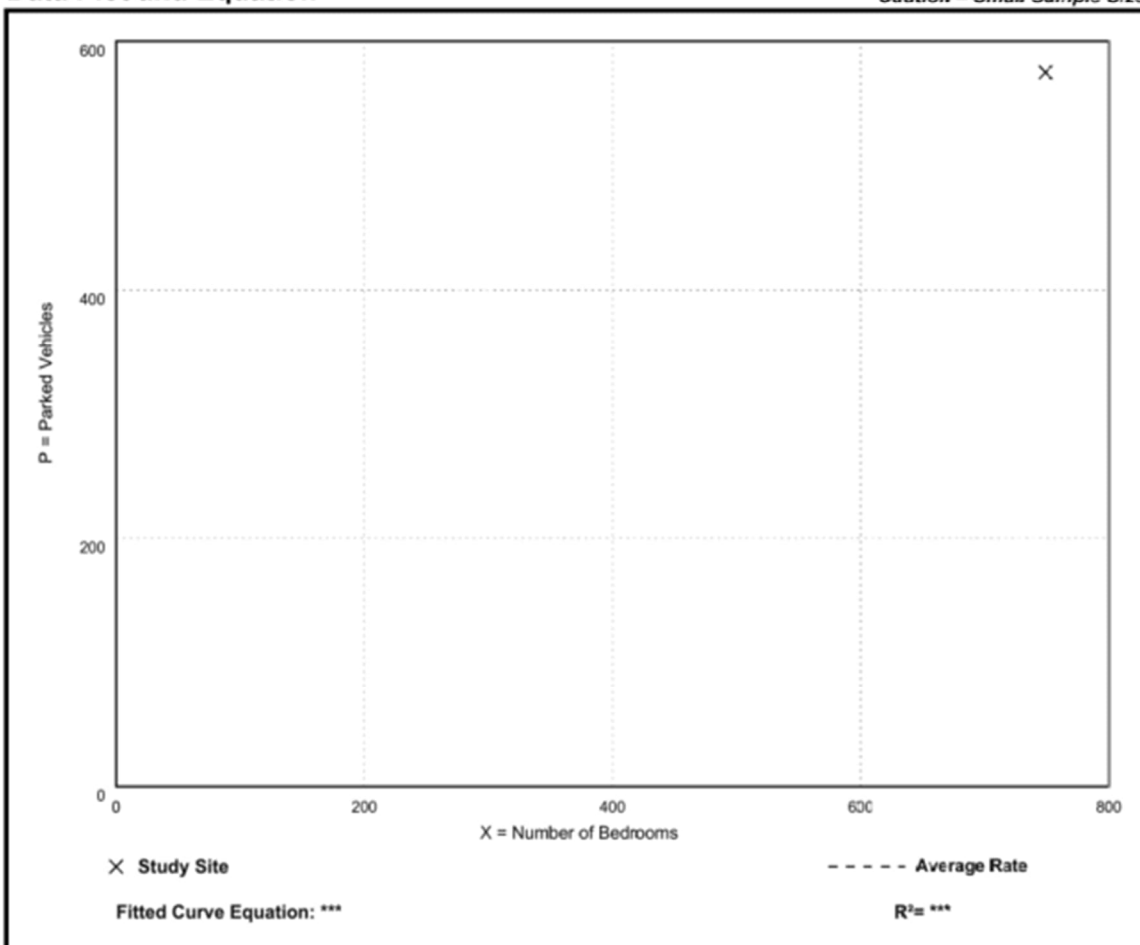
Avg. Num. of Bedrooms: 749

Peak Period Parking Demand per Bedroom

Average Rate	Range of Rates	33rd / 85th Percentile	95% Confidence Interval	Standard Deviation (Coeff. of Variation)
0.77	0.77 - 0.77	*** / ***	***	*** (***)

Data Plot and Equation

Caution – Small Sample Size



Land Use: 312 Business Hotel

Description

A business hotel is a place of lodging aimed toward the business traveler but also accommodates a growing number of recreational travelers. These hotels provide sleeping accommodations and other limited facilities, such as a breakfast buffet bar and afternoon beverage bar. Some provide a full-service restaurant geared toward hotel guests. Some provide a swimming pool; most provide fitness facilities. Limited space for meeting facilities may be provided. Each unit is a large single room. Hotel (Land Use 310), all suites hotel (Land Use 311), motel (Land Use 320), and resort hotel (Land Use 330) are related uses.

Time of Day Distribution for Parking Demand

The following table presents a time-of-day distribution of parking demand on a weekday (two study sites) and a Saturday (one study site) in a general urban/suburban setting.

Hour Beginning	Percent of Peak Parking Demand	
	Weekday	Saturday
12:00–4:00 a.m.	100	82
5:00 a.m.	–	–
6:00 a.m.	–	96
7:00 a.m.	89	98
8:00 a.m.	64	87
9:00 a.m.	56	74
10:00 a.m.	49	64
11:00 a.m.	45	56
12:00 p.m.	45	48
1:00 p.m.	41	44
2:00 p.m.	39	40
3:00 p.m.	39	46
4:00 p.m.	44	48
5:00 p.m.	48	55
6:00 p.m.	51	60
7:00 p.m.	54	64
8:00 p.m.	62	67
9:00 p.m.	72	81
10:00 p.m.	86	88
11:00 p.m.	93	100

Additional Data

The average parking supply ratio for the eight study sites in a general urban/suburban setting and with parking supply information is 1.1 spaces per room. For one dense multi-use urban site, the parking ratio is 0.9 spaces per room.

The sites were surveyed in the 1980s, the 1990s, the 2000s, and the 2010s in California, Georgia, and Washington.

For all lodging uses, it is important to collect data on occupied rooms as well as total rooms.

Parking demand at a hotel may be related to the presence of supporting facilities such as convention facilities, restaurants, meeting/banquet space and retail facilities. Future data submissions should indicate the presence of these amenities and specify their size. Reporting the level of activity at the supporting facilities (such as full, empty, partially active, number of people attending a meeting/banquet) during observation may also be useful in further analysis of this land use.

Source Numbers

6, 217, 311, 314, 401, 512, 526

Business Hotel (312)

Peak Period Parking Demand vs: Rooms

On a: **Weekday (Monday - Friday)**

Setting/Location: General Urban/Suburban

Peak Period of Parking Demand: 10:00 p.m. - 7:00 a.m.

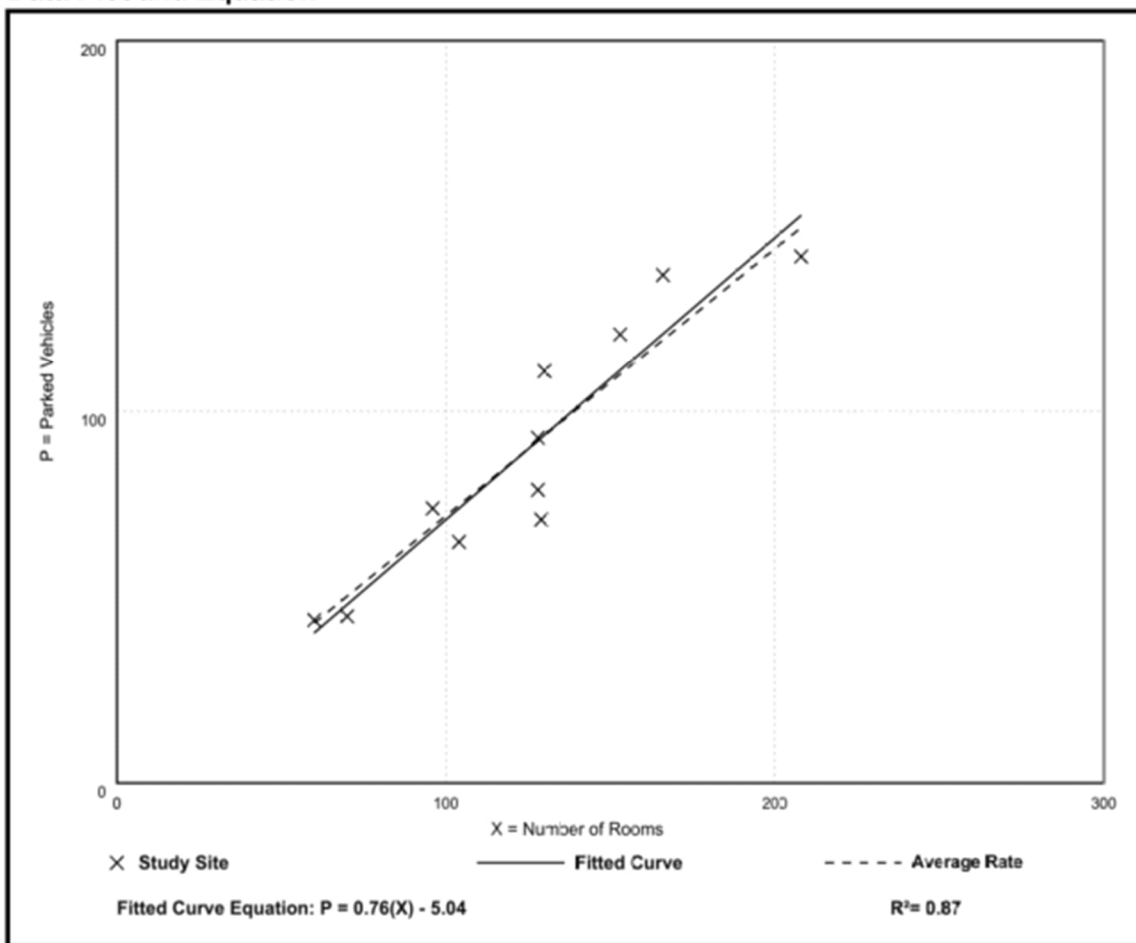
Number of Studies: 11

Avg. Num. of Rooms: 125

Peak Period Parking Demand per Room

Average Rate	Range of Rates	33rd / 85th Percentile	95% Confidence Interval	Standard Deviation (Coeff. of Variation)
0.72	0.55 - 0.85	0.64 / 0.83	***	0.10 (14%)

Data Plot and Equation



Business Hotel (312)

Peak Period Parking Demand vs: Rooms

On a: **Saturday**

Setting/Location: General Urban/Suburban

Peak Period of Parking Demand: 10:00 p.m. - 8:00 a.m.

Number of Studies: 3

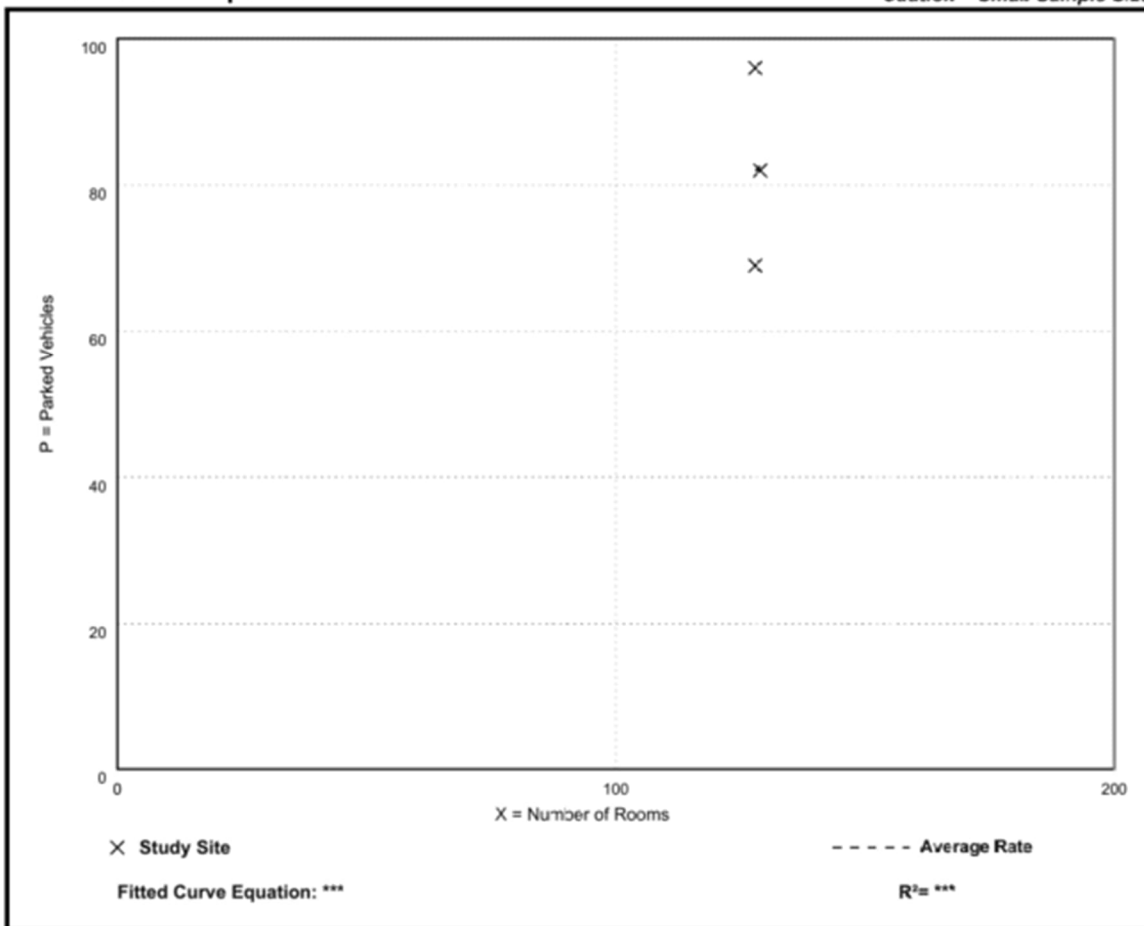
Avg. Num. of Rooms: 128

Peak Period Parking Demand per Room

Average Rate	Range of Rates	33rd / 85th Percentile	95% Confidence Interval	Standard Deviation (Coeff. of Variation)
0.64	0.54 - 0.75	0.57 / 0.75	***	0.11 (17%)

Data Plot and Equation

Caution – Small Sample Size



Business Hotel (312)

Peak Period Parking Demand vs: Occupied Rooms

On a: **Weekday (Monday - Friday)**

Setting/Location: General Urban/Suburban

Peak Period of Parking Demand: 10:00 p.m. - 7:00 a.m.

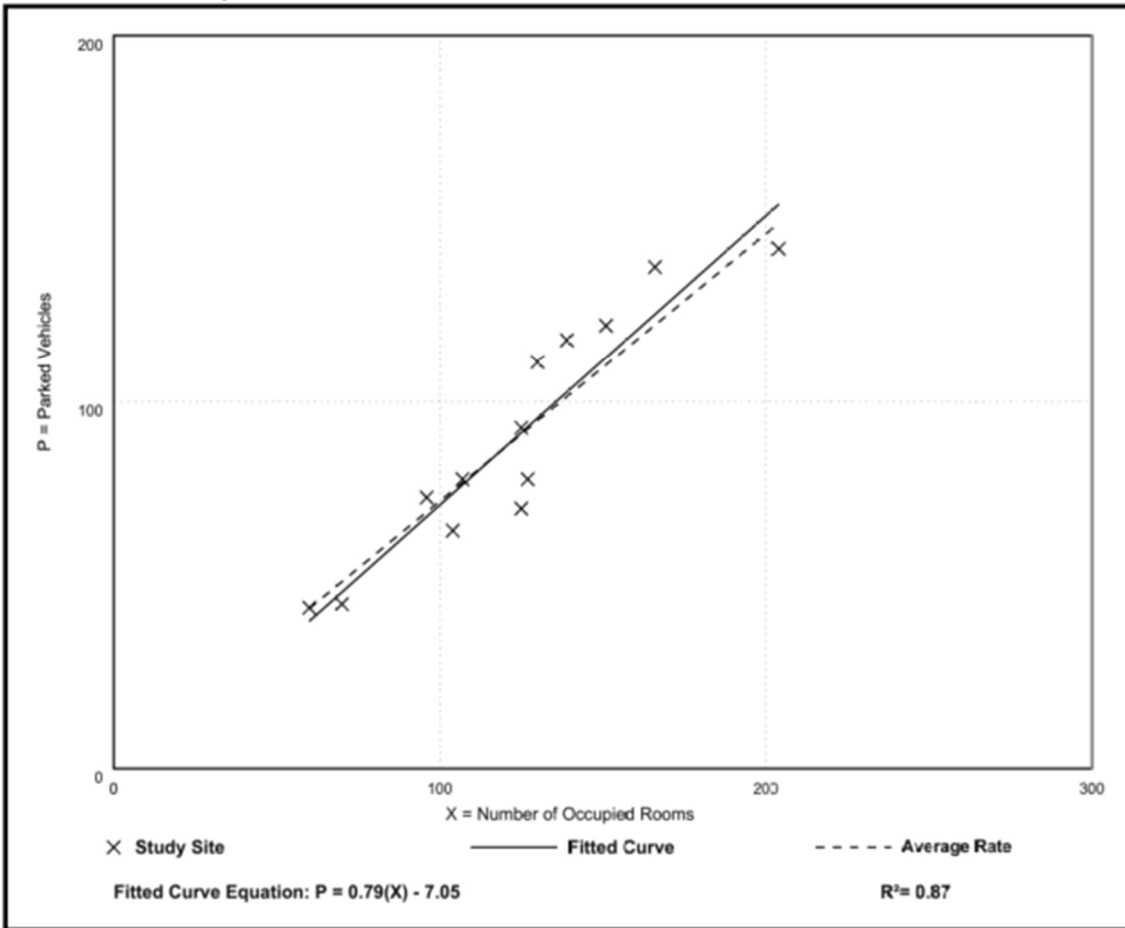
Number of Studies: 13

Avg. Num. of Occupied Rooms: 123

Peak Period Parking Demand per Occupied Room

Average Rate	Range of Rates	33rd / 85th Percentile	95% Confidence Interval	Standard Deviation (Coeff. of Variation)
0.73	0.57 - 0.85	0.68 / 0.84	***	0.09 (12%)

Data Plot and Equation



Business Hotel (312)

Peak Period Parking Demand vs: Occupied Rooms

On a: **Saturday**

Setting/Location: General Urban/Suburban

Peak Period of Parking Demand: 10:00 p.m. - 8:00 a.m.

Number of Studies: 4

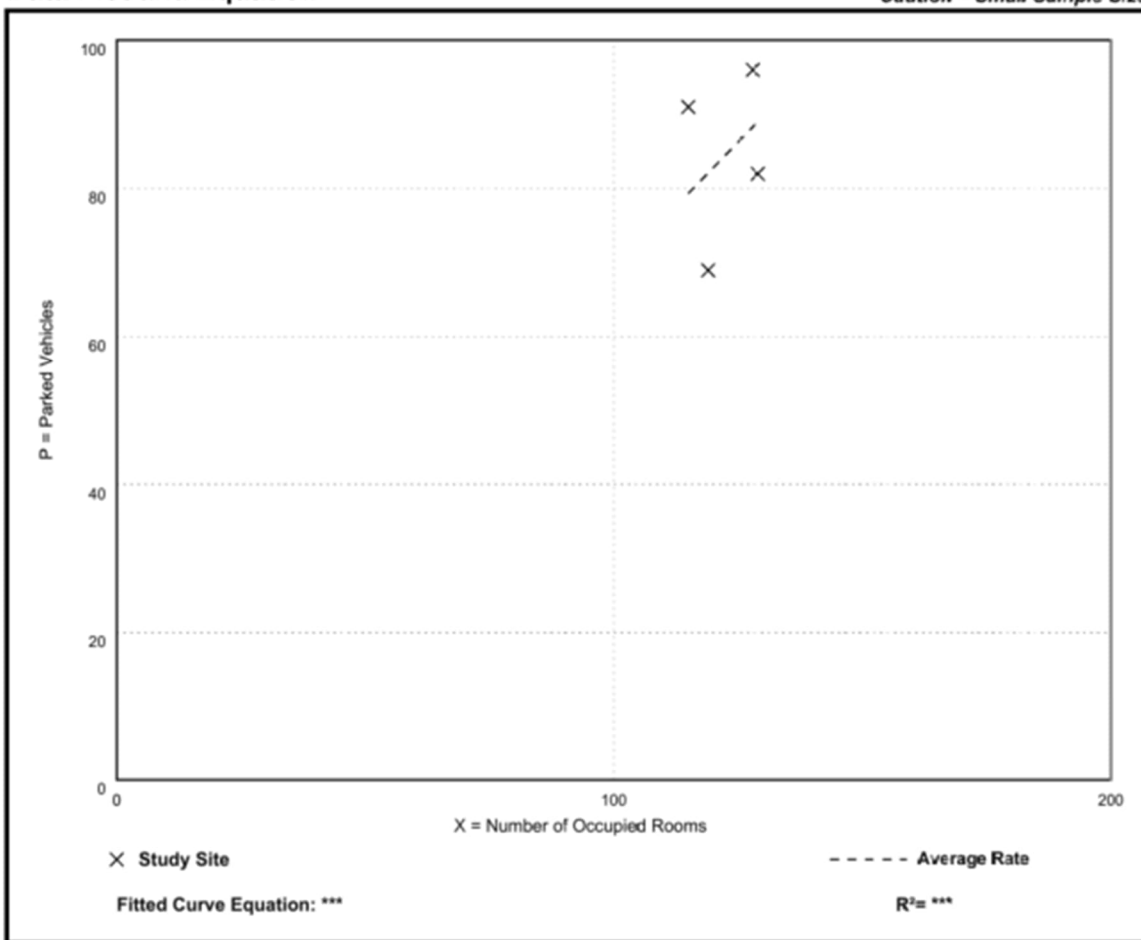
Avg. Num. of Occupied Rooms: 123

Peak Period Parking Demand per Occupied Room

Average Rate	Range of Rates	33rd / 85th Percentile	95% Confidence Interval	Standard Deviation (Coeff. of Variation)
0.69	0.58 - 0.79	0.62 / 0.79	***	0.10 (14%)

Data Plot and Equation

Caution – Small Sample Size



Observed/Actual Parking Counts of Similar Projects

Fairfield Inn (3 Fairfield Way, South Kingstown, RI)

100 Room Suburban Hotel

Fairfield Inn Parking Observations

Date	Time	Rooms Occupied	Spaces Utilized	Spaces Vacant	Total Spaces	Parking Ratio per Room (unit)	Parking Ratio per Occupied Room
11-Nov	9:00 PM	90	56	84	140	0.56	0.62
11-Nov	1:00 AM	90	81	59	140	0.81	0.90
12-Nov	9:00 PM	100	66	74	140	0.66	0.66
12-Nov	1:00 AM	100	96	44	140	0.96	0.96

Reynolds Farm Apartments (84 Mulberry Drive, North Kingstown, RI)

225 Unit Suburban Multifamily

Reynolds Farm - Parking Details

Units		225	225
Beds		340	340
Count Date		11-Nov	18-Nov
Count Time		8:30 PM	8:45-9:00 pm
Total Existing Garage Spaces		89	89
Surface Total Existing Spaces		310	310
Garage + surface Total Parking		399	399

Parking Observations

Surface	Parking Spaces Occupied	178	192
Garage	<i>Assuming 100% of Gar. Spaces occupied</i>	89	89
	Total Occupied Spaces	267	281

Ratios (<i>Assumes garage spaces are 100% Occupied</i>)		11-Nov	18-Nov
Total Spaces	Per Unit	1.77	1.77
Utilized Spaces	Per Unit	1.19	1.25
Total Spaces	Per Bedroom	1.17	1.17
Utilized Spaces	Per Bedroom	0.79	0.83