

PARKING STUDY

PREPARED FOR

**DAUGHTERS OF ISRAEL
1155 PLEASANT VALLEY WAY
LOT 12, BLOCK 171**

SUBMITTED TO:

WEST ORANGE ZONING BOARD OF ADJUSTMENT

PREPARED BY:

**PETRY ENGINEERING, LLC
155 PASSAIC AVENUE
FAIRFIELD, NEW JERSEY 07004**



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NJ PROFESSIONAL ENGINEER # 36662

OCTOBER 29, 2021

REVISED MAY 20, 2022



INTRODUCTION

This parking study was undertaken as part of an overall redevelopment plan for the existing Daughters of Israel property in West Orange. The investigation was performed by Petry Engineering for purposes of establishing existing parking patterns as they relate to the occupied beds during the study period. The information contained herein is based upon actual field counts taken over three separate days, both during the week and on the weekend.

Prior to undertaking the study, our team confirmed both the occupied bed counts and the maximum number of staff on any given shift. In addition, we confirmed start times for both the administrative staff as well as the nursing staff. Generally, administrative staff begins between 8:00 and 9:00 am and runs until 4:00 or 5:00 pm. The nursing staff shifts run from 7:00 pm until 3:00 pm, then from 3:00 pm until 11:00 pm, with a night shift from 11:00 pm until 7:00 am. We understood from our discussions with the administrators that the night shift included minimal staffing and that the likely peak parking need would occur in or around the afternoon nursing shift change, as afternoon staff was arriving before the morning shift signed out. We further understood that approximately 15-20 staff members were shuttled to the bus stop by an in-house van known as “the loop”.

While we understood that there were fewer administrative staff members working on the weekend, we felt that it was necessary to understand the impact on parking during what may be a higher visiting time. While Saturday visitation was not available, Sunday visitation was available from 10:00 am until 2:00 pm. As such, we investigated Sunday as part of our study, extending slightly beyond the close of visiting hours.

Finally, we have evaluated the West Orange Parking Requirements, the RSIS Parking Requirements, and the ITE parking standards and compared them with our findings in this document.

EXISTING CONDITIONS

Daughters of Israel (DOI) is a licensed nursing home that includes a total of 303 beds. The facility sits on a campus setting that contains approximately 18 acres of land. It is located along the westerly side of Pleasant Valley Way, just south of its intersection with Route 10 (See Fig. 1). The parcel is directly across the street from the Essex County Golf Course (Byrne) and includes two separate driveways for ingress and egress (See Fig. 2).

The parcel is bordered to the south by Kessler Institute for Rehabilitation as well as the Kessler Foundation. It is bordered to the north and to the west by a residential development that includes Parson Drive and Skyline Drive. Approximately 60 percent of the property is currently developed, while the remaining 40 percent is primarily wooded buffer located along the abutting properties (See Fig. 3).

Within the developed portion of the property, there are a series of buildings that are interconnected, having been constructed over several decades. These buildings are serviced by an asphalt parking lot that includes a total of 236 parking stalls. We note that DOI has several vehicles, one of which is utilized as a shuttle for employees to and from public transportation and others are strictly for deliveries. All vehicles are stored on-site when not in use and are included in our parking counts as occupied spaces.

Over the past 20 years, the maximum occupancy of the facility was between 270-280 residents. Over that same period, the maximum staffing on any given shift at the facility was approximately 250 employees. The impact of Covid-19 has caused a significant reduction in both the number of residents and the associated staffing.

During the preparation of this study, the facility averaged between 130 and 150 residents. The maximum staffing on any given shift during this period was 125 employees.

PARKING COUNTS

Our team visited the property to establish the existing parking patterns and to determine the number of parking spaces located on-site. This information was documented into a spreadsheet and the spreadsheet was utilized to perform counts on three different days. Our two weekdays were both mid-week (Tuesdays) and in both instances weather was partly cloudy with little to no precipitation. Our final count was taken on a Sunday and was limited to the timeframe immediately surrounding visitation hours. Since staffing is reduced on the weekend, we did not compare the shift change peaks. See Parking Count Chart at the conclusion of this section.

The initial parking count was performed on Tuesday, July 20, 2021. Our team counted parked cars within the lot every 15 minutes, beginning at 6:30 am and continuing until 5:30 pm. The overnight shift included a total of 30 parked vehicles, which climbed to 83 by 10:15 am (morning peak) when the day shift and administrative staffs were both on-site. The count remained reasonably constant until early afternoon, when visitor parking drove the count into the mid-nineties. The shift change at 3:00 pm provided the peak parking requirement of the day at 98 spaces. Again, this tapered down as the administrative staff left for the day, bringing the on-site parking count down to 35 at 5:30 pm.

Our second parking count was performed on Tuesday, October 5, 2021. Again, our team counted parked cars within the lot every 15 minutes, beginning at 6:30 am and continuing until 5:30 pm. Counts on this day were noted to be slightly lower than the initial counts taken. The overnight shift included a total of 19 parked vehicles, which again, climbed to 84 by 10:30 am (morning peak) when the day shift and administrative staff were both on-site. The count remained reasonably constant throughout the day until the 3:00 pm shift change, when the parking peaked at 88 spaces. Again, this tapered down as the administrative staff left for the day, bringing the on-site parking down to 38 at 5:30 pm.

Our final parking count was performed on Sunday, October 17, 2021. During this period, our team counted parked cars within the lot every 15 minutes, beginning at 10:30 am and continuing until 3:30 pm. This schedule was established to understand the impact of visitors on the

weekend parking needs. Visitation is limited to 11:00 am through 2:00 pm on Sundays. No visitors are scheduled on Saturdays.

Upon arrival, the parking lot contained a total of 32 vehicles. This number increased slightly over the course of the morning to a peak of 52 vehicles at 11:45 am. The visitation period resulted in an afternoon peak of 70 vehicles at 1:30 pm. We counted the 3:00 pm shift change, to understand that need on the weekend and found a total of 47 vehicles at what we had found to be the weekday peak timeframe.

Based upon the counts taken, the weekday peak observed was 98 vehicles, servicing 140 beds or a total of 0.70 spaces per bed. The weekend peak observed was 70 vehicles, servicing the same 140 beds or a total of 0.50 spaces per bed.

PROPOSED DEVELOPMENT

The proposed development will, over a period of several phases, remove and replace the existing buildings within the property and re-configure the parking to allow for an Age-in-Place community that will include one and two-bedroom Independent Living Units, Assisted Living Beds, and Skilled Nursing Beds. The overall facility will be constructed generally within the existing developed areas of the property. The following is a breakdown of the various unit types within the proposed community:

One-bedroom Independent Living Units	85
Two-bedroom Independent Living Units	97
Assisted Living Beds	64
Skilled Nursing Beds	80

Included in the proposed development are 266 surface parking spaces and another 115 resident spaces in a covered parking area within the building. Included in those numbers are a total of 58 electric vehicle charging stations (38 exterior and 20 interior) in accordance with N.J.S.A. 40:55D-66.20. This provides for a total of 381 on-site parking spaces (See Fig. 4). However, N.J.S.A. 40:55D-66.20 – indicates that the electric vehicle charging stations count as two spaces towards the parking count up to 10% of the total parking requirement. In this instance, the required parking is 479 (see parking calculations), so 48 of the 58 electric vehicle charging stations count as 2 parking stalls, for a grand total of $381 + 48 = 429$ parking stalls provided.

In accordance with the regulations, 1/3 of the electric vehicle charging spaces are to be functional prior to obtaining a C.O., another 1/3 of the spaces are to be functional within 3 years of receipt of the C.O. and the final 1/3 of the spaces are to be functional within 6 years of receipt of the C.O.

WEST ORANGE PARKING STANDARDS

Chapter 25 of the West Orange Code is entitled Land Use Regulations. Within this Chapter, Section 25-12.2 Minimum Number of Parking Spaces provides a chart that outlines the required number of spaces for a variety of uses. While the existing facility is limited to a single use (Nursing Home), the proposed use represents an age-in-place community that incorporates three separate uses; Skilled Nursing Units, Assisted Living Units and Independent Living Units.

Skilled Nursing Units (Nursing Home) requires a calculation based upon the number of beds plus staffing. The requirement includes one parking space per bed plus one parking space for every two non-resident employees and one parking space for every resident employee. In comparison to the existing occupied beds/staff, the West Orange requirement would be:

1 space per bed (140 beds)	140 parking spaces
1 space per 2 employees (125 employees)	62.5 parking spaces
1 space per resident employee (0 resident employees)	0 parking spaces
TOTAL REQUIREMENT EXISTING OCCUPANCY	203 parking spaces
ACTUAL PARKING DEMAND EXIST. OCCUPANCY	98 parking spaces

When we apply the standard to the proposed Nursing Home component of the new project, we find the following:

1 space per bed (80 beds)	80 parking spaces
1 space per 2 employees (40 employees)*	20 parking spaces
1 space per resident employee (0 resident employees)	0 parking spaces

*The employees listed in this requirement are those that are solely dedicated to the Skilled Nursing Facility. All shared employees have been excluded from the calculation, as they are not stipulated in any of the other uses for parking calculation purposes.

TOTAL REQUIRED FOR PROPOSED SKILLED NURSING 100 parking spaces

Assisted Living or congregate Care Facilities require 1 parking space for each bed under the West Orange Ordinance. There is no separate requirement for staffing. The proposed facility will have a total of 64 units of Assisted Living as part of the proposed facility. However, the West Orange Ordinance specifically references RSIS for residential parking and this use is specifically listed in RSIS. As such, the RSIS standard of 0.5 spaces per bed is utilized. When we apply that standard, we find the following:

0.5 space per bed (64 beds)	32 parking spaces
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TOTAL REQUIREMENT FOR PROPOSED ASSISTED LIVING	32 parking spaces
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The Independent Living Component is classified under the West Orange Ordinance as apartment units. Given the IBC definitions, the apartment units are classified as Mid-Rise Apartments. There are both one-bedroom units and two-bedroom units within the development. Some units include dens, but this is not a factor considered in the ordinance, as it relates to parking requirements.

Mid-rise Apartments with one bedroom require 1.8 spaces per unit. Two-bedroom units require 2.0 spaces per unit. There is no distinction in the ordinance regarding independent living units in an age-in-place facility. However, West Orange does have a separate standard for Senior Citizen Housing Project, which requires 1.48 spaces per unit. While this development does not meet the definition set forth in your ordinance for this project type, we felt it was worthy of mentioning in this section of the requirements. When we apply the Mid-rise apartment standards, we find the following:

1.8 spaces per one-bedroom unit (85 units)	153 parking spaces
2.0 spaces per two-bedroom unit (97 units)	194 parking spaces

TOTAL REQUIREMENT FOR INDEPENDENT LIVING	347 parking spaces
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GRAND TOTAL WEST ORANGE PARKING REQUIREMENT	479 parking spaces
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REFERENCE STANDARDS

A. ITE

The Institute of Transportation Engineers (ITE) provides data in their Parking Generation Manual, 5th Edition for a variety of uses. The various uses are listed by Code number, with Nursing Homes being considered code 620, Assisted Living Facilities being considered as code 254, Multi-family Housing (Mid-Rise) being considered as code 221, Senior Adult Housing – Attached being considered as code 252, Congregate Care Facilities considered as code 253 and Continuing Care Retirement Community considered as code 255.

There are two approaches to analyzing the development based upon the ITE Land Use Codes. The first is to apply the Continuing Care Retirement Community criteria (Code 255) to the entire development. This Land Use Code was literally developed to reflect an age-in-place campus, such as what is being proposed here. We do note that there were limited studies for this Land Use Code, but the 85th percentile parking requirement for weekdays was 1.19 spaces per dwelling unit (in this study, dwelling unit is used to denote independent units, assisted living beds or skilled nursing beds). If applied to our overall development, that would produce a parking demand of 387.94 (say 388) parking spaces required.

If we continued to look at the breakdown via the various uses, we start with the Nursing Home (Land Use Code 620). We would continue to apply the West Orange measurement of BEDS, as ITE evaluates Beds, Occupied Units, Square Footage and Employees each as separate categories.

The weekday period showed an 85th percentile parking need of 0.51 spaces per bed. Using this criteria, the parking requirement for the Nursing Home would be 40.8 spaces. A similar study comparing the parking to Occupied Dwelling Units (in this instance, occupied beds) showed an 85th percentile parking need of 0.72 spaces per unit (which we note is similar to what we established at the existing facility).

The Assisted Living (Land Use Code 254) has similar categories for evaluation. Again, we have continued to follow the West Orange measurement of BEDS. In this instance, the 85th percentile parking need is 0.58 spaces per bed as a weekday peak. Using this criteria, the parking requirement for Assisted Living would be 37.12 spaces.

When evaluating the Independent Living Units, we looked at both the Mid-Rise Apartment Category as well as the Senior Adult Housing Criteria. In both instances, while bus service is available at Route 10, near the intersection of Pleasant Valley Way, we took a conservative approach and evaluated parking based upon no nearby transit. We applied the General Urban/Suburban setting and utilized the criteria for parking demand vs. bedrooms, since we are proposing both one and two-bedroom units. This remains consistent with the West Orange measurement set forth in the parking ordinance.

Applying the Multi-Family Housing (Mid-Rise) Land Use Code (221), we find a weekday 85th percentile parking need of 0.87 spaces per bedroom during the overnight hours. This would generate a parking requirement of 242.73 for this use. Combining this with the other two uses would generate an overall parking requirement of 320.65, or 321 parking spaces required.

Applying the Senior Adult Housing Criteria – Land Use Code (252), we note that the measurement is based upon Dwelling Units, not beds. We further note that the study count is low (only 3), so the data is noted to be a small sample size. However, applying the same criteria, the 85th percentile parking requirement is 0.67 per unit, which would generate a parking requirement of 121.94. Combining this with the other two uses would generate an overall parking requirement of 199.86, or 200 parking spaces required.

Finally, we evaluated the Independent Living units as a Congregate Care Facility. This Land Use Code is described as “An independent living development that provides for centralized amenities such as dining, housekeeping, communal transportation, and organized social/recreational activities. Each individual dwelling unit often has a kitchenette, rather than a full kitchen.”

Utilizing this Land Use Code (253), the 85th percentile parking need is 0.46 per dwelling unit. This would generate a parking requirement of 83.72 spaces. Combining this with the other two uses would generate an overall parking requirement of 161.64 or 162 parking spaces required.

As such the ITE establishes parking need between 162 spaces and 321 spaces for the overall development if evaluated by the individual uses. This represents a substantially lower requirement than that set forth under the West Orange standards. Section 25-12.2a.1 of the Land Use Regulations states that “Alternative parking standards to those shown in the Schedule below shall be accepted if the applicant demonstrates that these standards better reflect local conditions.”

CONCLUSIONS

This parking study was prepared to evaluate both the existing parking need at the current nursing home as well as evaluating reasonable parking standards for the proposed development.

We developed a peak parking need of 0.70 parking spaces per occupied bed for the Nursing Home Use. This is in keeping with the study criteria prepared by ITE (0.72 spaces) for Nursing Homes based upon Occupied Beds. We further offer that the ITE criteria for Assisted Living Facilities (0.58 spaces per bed) is in keeping with the RSIS standard of 0.5 spaces per bed. We offer that the ITE standards for parking for these two uses are more appropriate than the West Orange Standards set forth in the Ordinance as it relates to this particular development.

With regard to the Independent Living Units in these Continuing Care Retirement Communities, the industry has found that the requirements generally start with about one car per unit and, over time with the aging of the population, that number drops. This is in keeping with the ITE findings of the Senior Adult Housing Criteria (at 0.67 spaces per unit). However, ITE does not indicate if the parking need includes visitors. RSIS suggests that residential requirements should include 0.5 spaces per unit for visitors. We suggest that this is added to the ITE unit needs, thereby producing a requirement of 1.17 spaces per unit. We have taken a more conservative approach and suggested that the one car per unit plus 0.5 spaces per unit for visitors would be the high-end of the industry range (1.5 spaces per unit). Over time, this need would drop to 1.3 spaces per unit as residents give up their vehicles.

Based upon the evaluation of the above information, an appropriate standard for the property would be as follows:

Skilled Nursing Beds	0.75 spaces per bed	60 spaces required
Assisted Living Beds	0.50 spaces per bed	32 spaces required
Independent Living Units	1.3-1.5 spaces per unit	236.6 – 273 spaces required
Grand Total Parking Required		328.6 - 365 spaces

Parking Provided

381 spaces (plus the EV bonus)

These totals are in keeping with the overall totals suggested by ITE for an Age-in-Place Facility such as this (see ITE, Code 255) which produces a total requirement of 388.

In summary, the West Orange Ordinance breakdown of uses produces a parking requirement of 479 parking spaces. Recognized standards within the industry suggest a need of between 329 and 365 spaces for the same breakdown of uses.

Our proposed plan includes 381 stalls on-site. These stalls include 58 electric vehicle charging stations, of which 48 of those spaces count as two towards the requirement. This produces an overall deficit of 50 spaces when compared to the West Orange standards. It also produces a surplus of at least 64 spaces over industry standards (or 16 if we exclude the bonus for EV spaces).

FIGURES





- REFERENCES:
1. TAX MAP INFORMATION TAKEN FROM THE TOWNSHIP OF WEST ORANGE, NEW JERSEY. JUNE 2011.

PREPARED FOR

DAUGHTERS OF ISRAEL

1155 PLEASANT VALLEY WAY
BLOCK 171 LOT 12
TOWNSHIP OF WEST ORANGE
ESSEX COUNTY, NEW JERSEY

TAX MAP

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Designer: JMP

Draftsman: DJK

Checked By: JMP

Project No.: 19-265

Scale: 1" = 500'

Sheet:

FIG-1



REFERENCES:

1. TOPOGRAPHIC INFORMATION SHOWN IS FROM A CERTAIN MAP ENTITLED "MAP OF PROPERTY OF JCF 1155 PLEASANT VALLEY WAY LLC (DAUGHTERS OF ISRAEL GERIATRIC CENTER) 1155 PLEASANT VALLEY WAY LOT 12 BLOCK 171 TOWNSHIP OF WEST ORANGE ESSEX COUNTY NEW JERSEY" PREPARED BY MICHAEL P. FERSCHMAN FROM MPF LAND SURVEYING, LLC AND DATED 04/22/20.

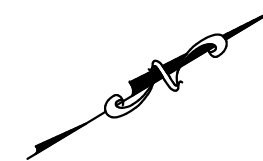
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DAUGHTERS OF ISRAEL
1155 PLEASANT VALLEY WAY
BLOCK 171 LOT 12
TOWNSHIP OF WEST ORANGE
ESSEX COUNTY, NEW JERSEY

EXISTING CONDITIONS



Designer: JMP
Draftsman: DJK
Checked By: JMP
Project No.: 19-265
Scale: 1" = 500'
Sheet:

FIG-2



- REFERENCES:
1. AERIAL PHOTOGRAPH TAKEN FROM NJGIN WAREHOUSE 2015

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1155 PLEASANT VALLEY WAY
BLOCK 171 LOT 12
TOWNSHIP OF WEST ORANGE
ESSEX COUNTY, NEW JERSEY

AERIAL MAP



Designer: JMP
Draftsman: DJK
Checked By: JMP
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Scale: 1" = 250'
Sheet:

FIG-3



PREPARED FOR
DAUGHTERS OF ISRAEL
 1155 PLEASANT VALLEY WAY
 BLOCK 171 LOT 12
 TOWNSHIP OF WEST ORANGE
 ESSEX COUNTY, NEW JERSEY

PROPOSED DEVELOPMENT



Designer: JMP
 Draftsman: DJK
 Checked By: JMP
 Project No.: 19-265
 Scale: 1" = 100'
 Sheet:

FIG-4

APPENDIX



Continuing Care Retirement Community (255)

Peak Period Parking Demand vs: Dwelling Units

On a: Weekday (Monday - Friday)

Setting/Location: General Urban/Suburban

Peak Period of Parking Demand: 8:00 a.m. - 4:00 p.m.

Number of Studies: 4

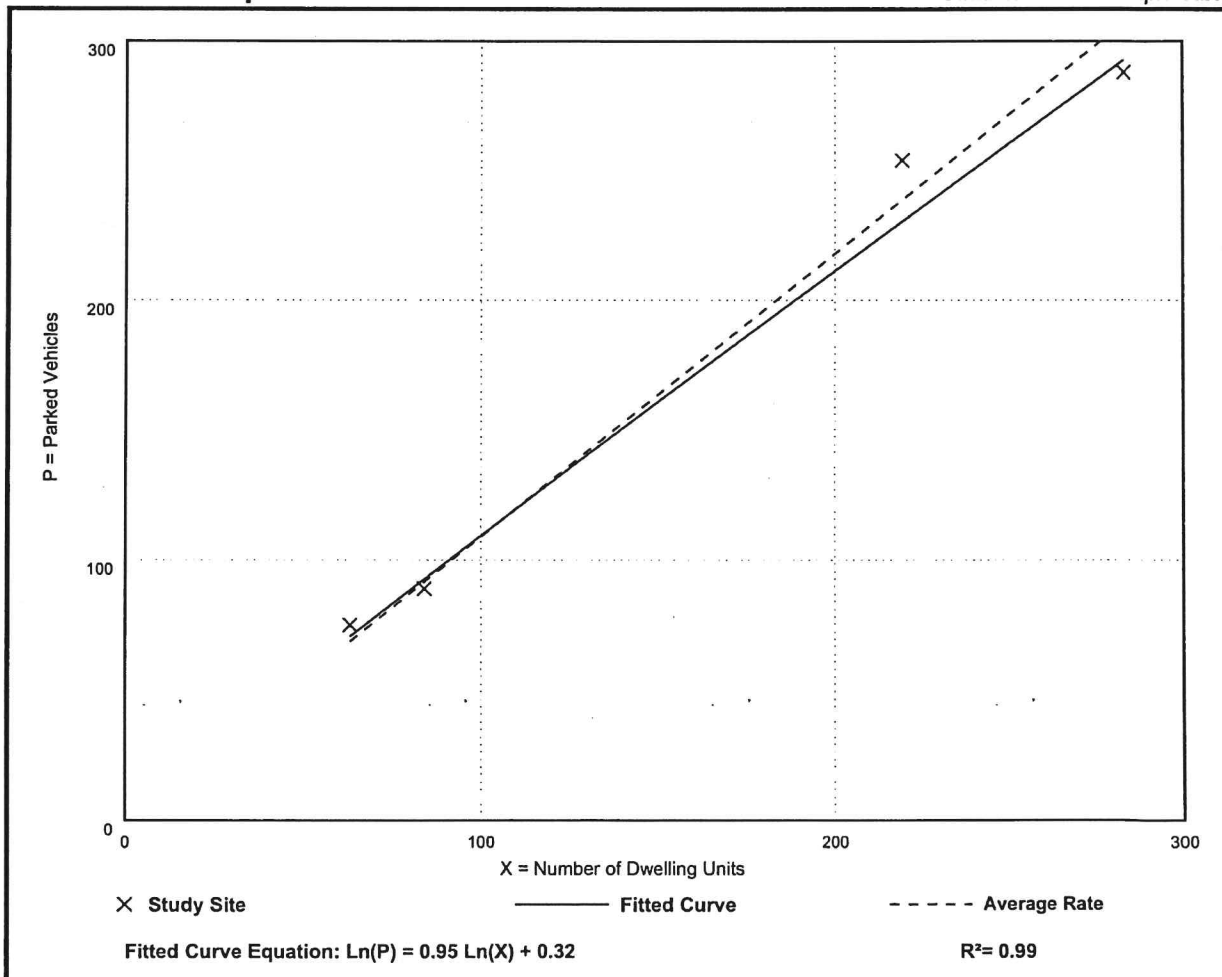
Avg. Num. of Dwelling Units: 162

Peak Period Parking Demand per Dwelling Unit

Average Rate	Range of Rates	33rd / 85th Percentile	95% Confidence Interval	Standard Deviation (Coeff. of Variation)
1.09	1.02 - 1.19	1.05 / 1.19	***	0.08 (7%)

Data Plot and Equation

Caution – Small Sample Size



Nursing Home (620)

Peak Period Parking Demand vs: Beds

On a: Weekday (Monday - Friday)

Setting/Location: General Urban/Suburban

Peak Period of Parking Demand: 9:00 a.m. - 3:00 p.m.

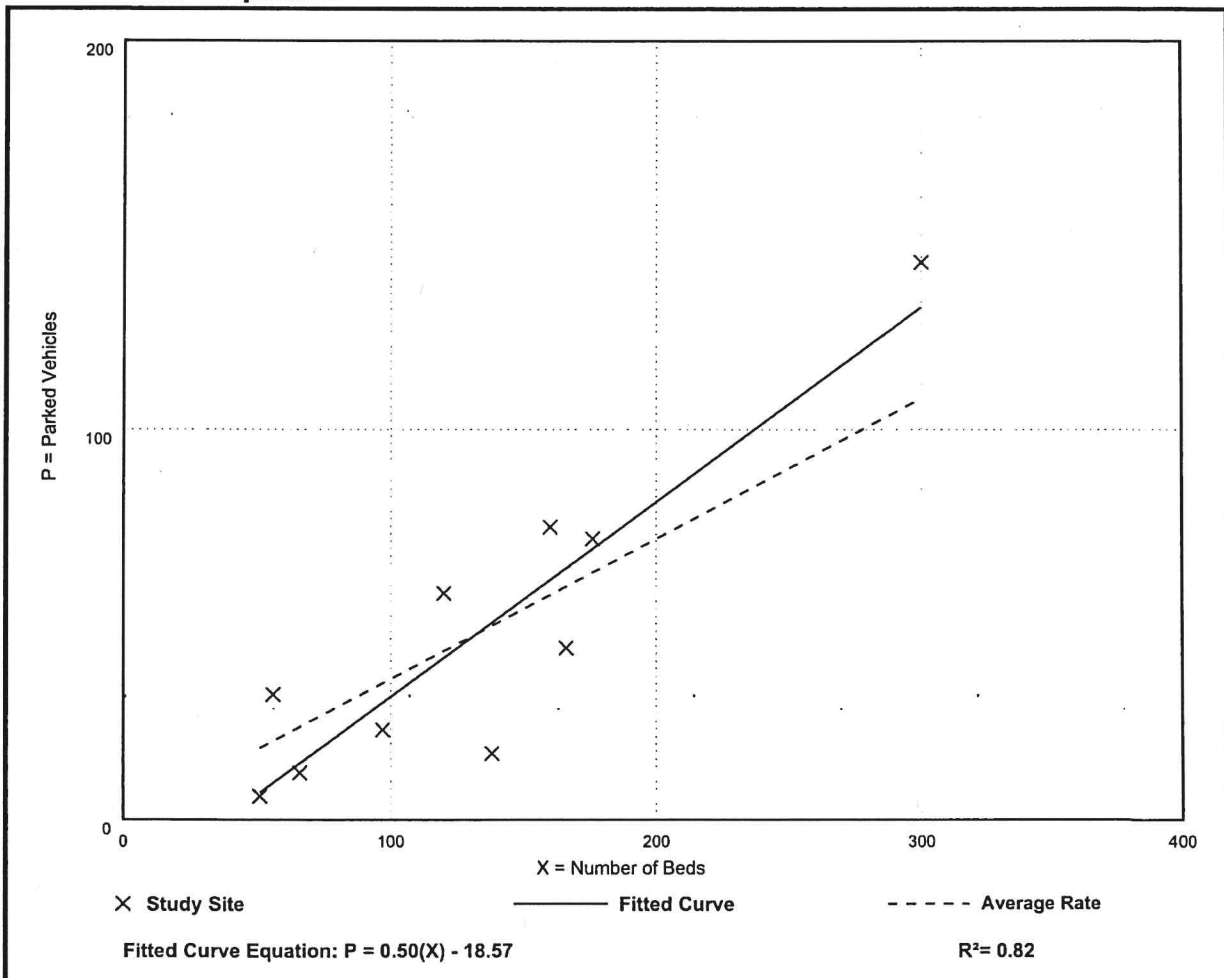
Number of Studies: 10

Avg. Num. of Beds: 133

Peak Period Parking Demand per Bed

Average Rate	Range of Rates	33rd / 85th Percentile	95% Confidence Interval	Standard Deviation (Coeff. of Variation)
0.36	0.12 - 0.57	0.22 / 0.51	***	0.15 (42%)

Data Plot and Equation



Nursing Home (620)

Peak Period Parking Demand vs: Occupied Dwelling Units

On a: Weekday (Monday - Friday)

Setting/Location: General Urban/Suburban

Peak Period of Parking Demand: 9:00 a.m. - 3:00 p.m.

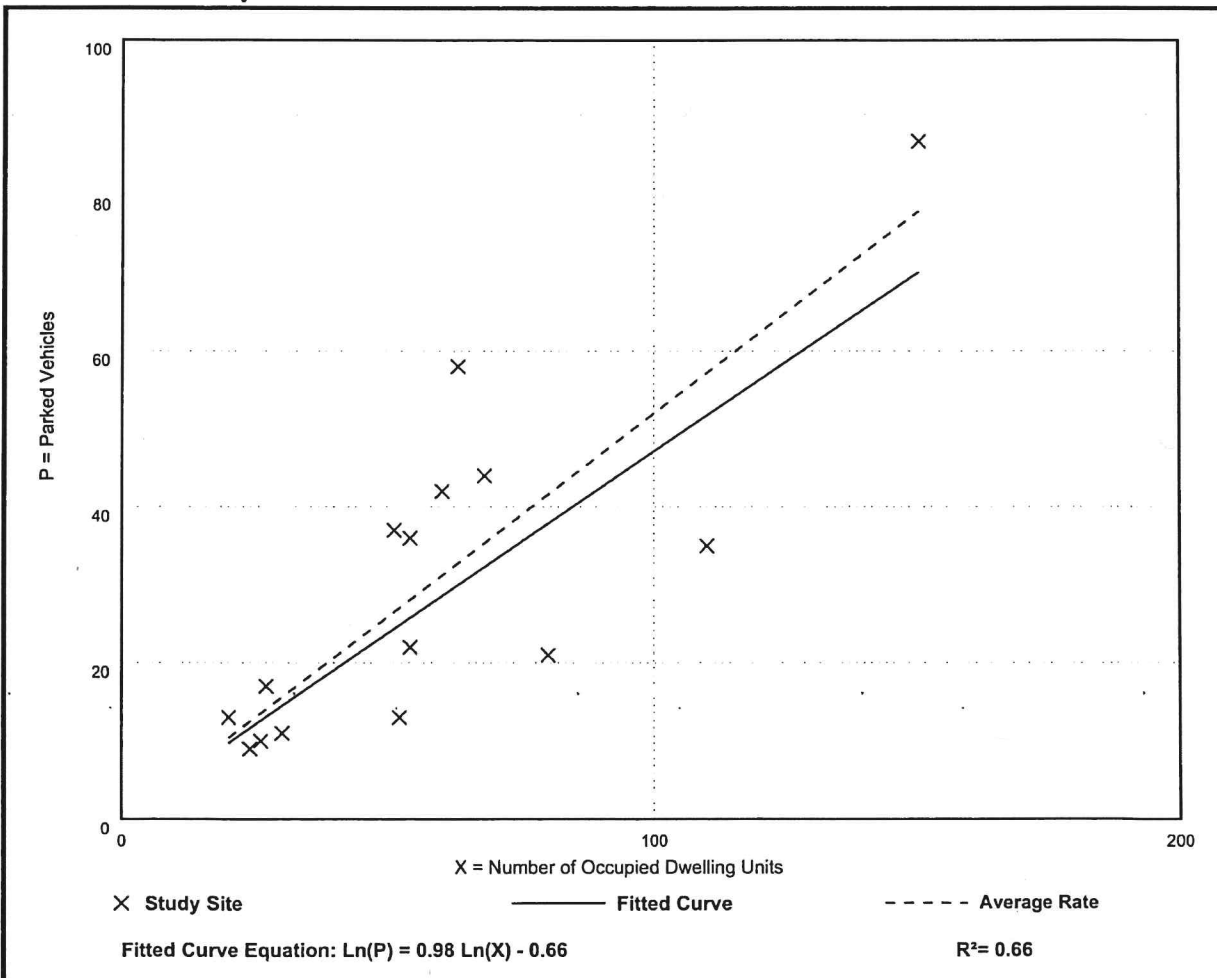
Number of Studies: 15

Avg. Num. of Occupied Dwelling Units: 58

Peak Period Parking Demand per Occupied Dwelling Unit

Average Rate	Range of Rates	33rd / 85th Percentile	95% Confidence Interval	Standard Deviation (Coeff. of Variation)
0.52	0.25 - 0.92	0.38 / 0.72	***	0.20 (38%)

Data Plot and Equation



Assisted Living (254)

Peak Period Parking Demand vs: Beds

On a: Weekday (Monday - Friday)

Setting/Location: General Urban/Suburban

Peak Period of Parking Demand: 11:00 a.m. - 3:00 p.m.

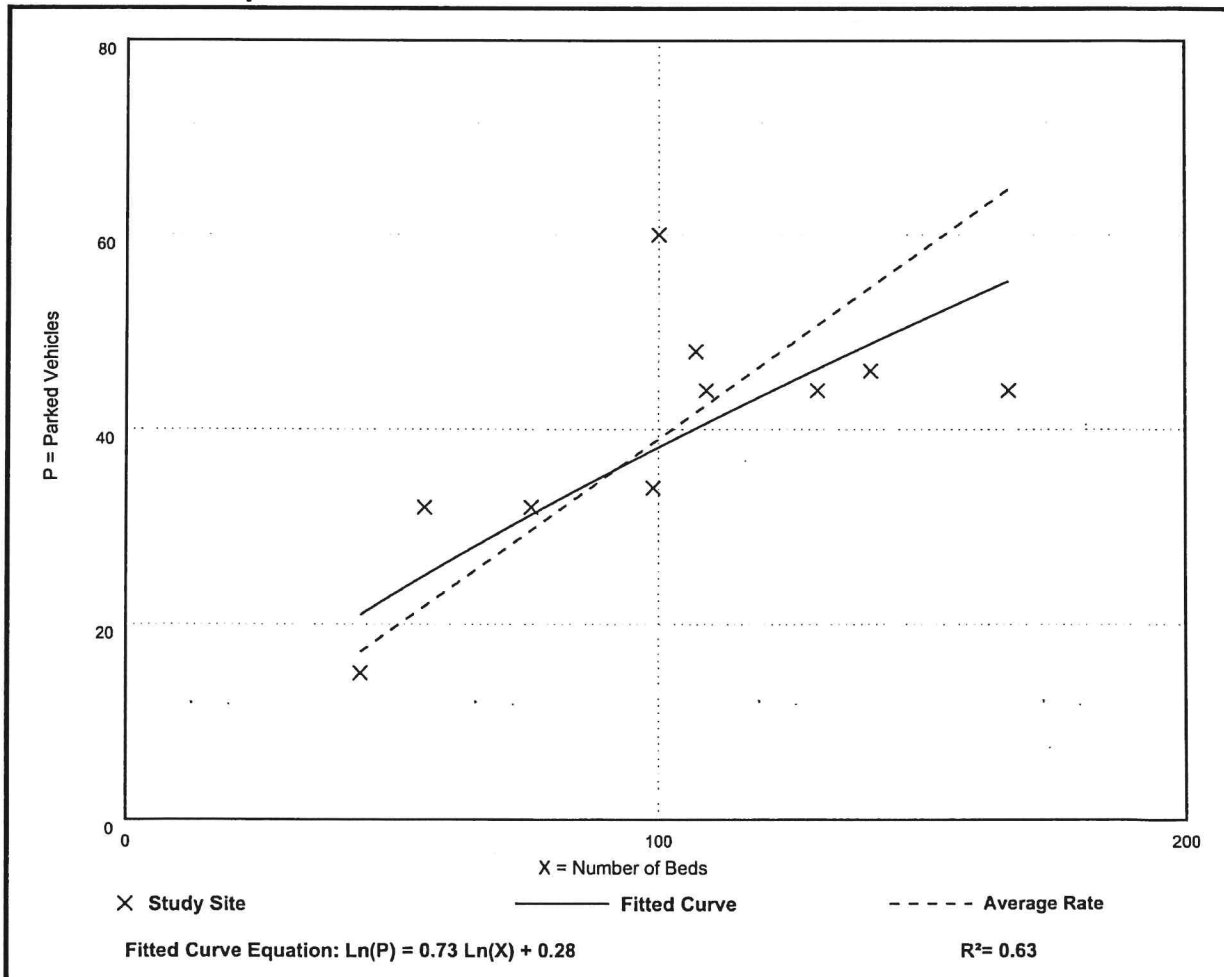
Number of Studies: 10

Avg. Num. of Beds: 103

Peak Period Parking Demand per Bed

Average Rate	Range of Rates	33rd / 85th Percentile	95% Confidence Interval	Standard Deviation (Coeff. of Variation)
0.39	0.27 - 0.60	0.34 / 0.58	***	0.11 (28%)

Data Plot and Equation



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.

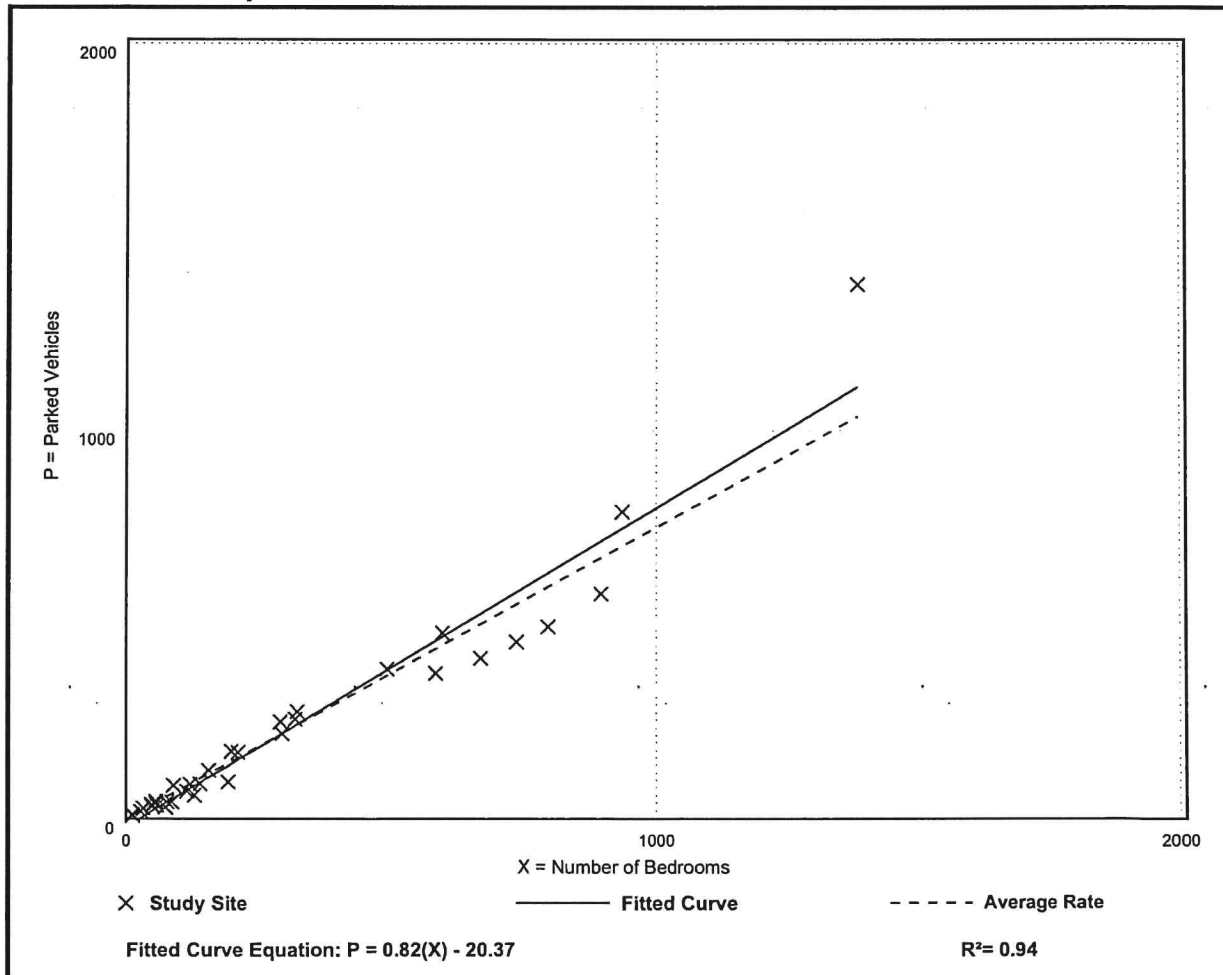
Number of Studies: 35

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



Senior Adult Housing - Attached (252)

Peak Period Parking Demand vs: Dwelling Units

On a: Weekday (Monday - Friday)

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 Dwelling Units: 58

Peak Period Parking Demand per Dwelling Unit

Average Rate	Range of Rates	33rd / 85th Percentile	95% Confidence Interval	Standard Deviation (Coeff. of Variation)
0.61	0.45 - 0.67	0.51 / 0.67	***	0.11 (18%)

Data Plot and Equation

Caution - Small Sample Size

