MEMORANDUM

TO: LOMBARD PLAN COMMISSION
Leigh Giuliano, Plan Commission Chairperson

FROM: William J. Heniff, AICP, Director of Community Development

MEETING DATE: July 17, 2023

SUBJECT: **PC 23-13: 2001 S. Highland Avenue – Sonesta Suites**

The Plan Commission conducted a public hearing on the above-referenced petition at its regularly scheduled meeting on June 19, 2023. At the June Plan Commission meeting, the public hearing was continued to the July 17, 2023, Plan Commission meeting due to the length of the proceedings.

In advance of the continued hearing on July 17, 2023, Village staff transmits the following documents to the Plan Commission:

1. Written public comments received by the Village between June 19, 2023, and July 12, 2023;

2. A spreadsheet, referenced by Village staff during the public hearing on June 19, 2023, showing parking standards for nearby communities; and

3. Parking information referenced by Javier Millan of KLOA during his testimony during the public hearing on June 19, 2023.

Papke Anna

From: Heniff, William
Sent: Monday, June 26, 2023 5:57 PM
To: Kevin Kane; Dudek, Bernard
Subject: RE: Sonesta Suites Hotel/Planning Commision Meeting

Dear Kevin:

We are receipt of your email below. We will share your correspondence with the Plan Commission members for consideration at the meeting on July 17, 2023 at 7:00 p.m. at the Village Hall and it will be placed on file.

William J. Heniff, AICP
Director of Community Development
Village of Lombard
255 E. Wilson Ave. Lombard, IL 60148

Phone: (630) 620-3599
Fax: (630) 629-2374
Email: heniffw@villageoflombard.org
Web: www.villageoflombard.org
Follow us:

From: Kevin Kane [redacted]
Sent: Monday, June 26, 2023 5:33 PM
To: Heniff, William <HeniffW@villageoflombard.org>; Dudek, Bernard <DudekB@villageoflombard.org>
Subject: Sonesta Suites Hotel/Planning Commision Meeting

Mr. Heniff and Mr. Dudek,
As a condo owner living in the area of Sonesta Suites, I strongly question the need for more apartments in this area. I hope this area does not turn into Cabrini Green down the road. How much New York bull shit can one town take.

Comparing Lombard to Birmingham, Alabama.....I don't understand ??????

It was said that Lombard's Police and Fire Chief are opposed to this idea....there must be a reason ??????

100 plus studio apartments???
No talk of storage units that most condo and apartments have???
Will everything be stored outside and present an eyesore???

Most young professionals I know do not live in studio apartments.
What would be the median income of individuals living here???

Most young professionals have visitors over.....No Parking ???

Most young professionals have overnight guests.....No Parking???
Most young professionals are not worried about the nearest church???

If you could please pass this on to Bill Johnston on the planning commision.

Thank you for all you do for the city of Lombard.

Kevin Kane
Liberty Square Condominiums

Papke Anna

From: Niehaus, Scott
Sent: Monday, June 26, 2023 9:40 AM
To: Heniff, William; Aranas, Nicole; Papke Anna
Subject: FW: Sonesta Suites

Scott Niehaus
Village Manager
Village of Lombard
255 E. Wilson Avenue
Lombard, IL 60148
630-620-5700

From: Bauer, Carol <BauerC@villageoflombard.org>
Sent: Monday, June 26, 2023 9:38 AM
To: Niehaus, Scott <NiehausS@villageoflombard.org>
Subject: FW: Sonesta Suites

FYI

Carol Bauer
Executive Coordinator
Village of Lombard
255 E. Wilson Ave.
Lombard, IL 60148
(630) 620-5712 (Office)
(630) 620-8222 (FAX)

2023 Blood Drive Dates
January 10, April 18,
June 13, September 19 and
November 14
Donate Blood - It Saves Lives

From: Grunert, Larry [redacted]
Sent: Monday, June 26, 2023 9:31 AM

To: Dudek, Bernard <DudekB@villageoflombard.org>; Heniff, William <HeniffW@villageoflombard.org>
Subject: Sonesta Suites

Please be cautious
This email originated from outside of the organization. Do not click links or open attachments unless you recognize the sender and know the content is safe.

Hi Bernie, William,

This is from Larry & Myrna Grunert.

Not sure if you remember us we met a few times in the past.

We're residents of Lombard and home owners at 107 E. 20th St for 23 years.

Hope your summer is going well.

A few weeks ago we had two persons knock on our front door. They were from Sonesta Suites and asked us if we have any issues with this hotel becoming an apartment complex. I told them we are against it. And last week I read in the Suburban Life an article stating a New York real estate company bought the site and are trying to convert it to 115 mostly studio apartments.

I just want you guys to know we are against this, we hope you are too. If we can do anything to help prevent this let us know.

Thanks again for keeping Lombard a nice place to live.

Best regards,

Larry Grunert
630-965-0317

SURROUNDING NEIGHBORHOODS SURVEY OF MULTI-FAMILY PARKING REQUIREMENTS

COMMUNITY	PARKING SPACES REQUIRED	NOTED	REFERENCE
LOMBARD	**1.5 per dwelling unit**	**2 per 3+ bedrooms**	**https://library.municode.com/il/lombard/codes/code_of_ordinances?nodeId=TITXVLAUS_CH155ZOCO_ARTXOREPALORE**
INNER RING COMMUNITIES			
Addison	2 per dwelling unit	Except for R4/5: Two and one-half spaces per unit with two spaces contained within or under the building in all three bedroom dwelling units.	https://www.addisonadvantage.org/addison_code/general_requirements.php#VIII-B
Downers Grove	2 per dwelling unit		
DuPage County	1.5 per dwelling unit	1.75 for 2 bedrooms; 2 for 3 or more bedroms	https://library.municode.com/il/dupage_county/codes/code_of_ordinances?nodeId=CH37DUPACOZOOR_ARTXIIOREPALORE
Glendale Heights	2 per dwelling unit		https://codelibrary.amlegal.com/codes/glendalehtsil/latest/glendalehts_il/0-0-0-12457
Glen Ellyn	2 per dwelling unit; except efficiency unit 1.5		https://library.municode.com/il/glen_ellyn/codes/code_of_ordinances?nodeId=TIT10ZOCO_CH4DIRE_10-4-12R5REDI
Oak Brook	2 per dwelling unit		https://codelibrary.amlegal.com/codes/oakbrookil/latest/oakbrook_il/0-0-0-9761
Oakbrook Terrace	2.5 per dwelling unit		https://codelibrary.amlegal.com/codes/oakbrookterrace/latest/oakbrookter_il/0-0-0-57545
Villa Park	1 per bedroom		https://library.municode.com/il/villa_park/codes/code_of_ordinances?nodeId=MUCO_APXCBAZOOR_ART7PA
OUTER RING			
Bloomingdale	2 per dwelling unit	2.5 per dwelling unit for all units with 3 or more bedrooms. Additionally, guest parking spaces shall be provided for all multiple-family dwellings at a ratio of not less than 1 space for every 4 units	https://codelibrary.amlegal.com/codes/bloomingdaleil/latest/bloomingdale_il/0-0-0-10381
Carol Stream	1.5 per dwelling unit		https://codelibrary.amlegal.com/codes/carolstream/latest/carolstream_il/0-0-0-33436
Darien	2 per dwelling unit		https://codelibrary.amlegal.com/codes/darienil/latest/darien_il/0-0-0-4620#JD_5A-11-2-2
Elmhurst	2.5 per dwelling unit		https://library.municode.com/il/elmhurst/codes/code_of_ordinances?nodeId=CH22ZO_ARTXOREPALORE
Hinsdale	2 per dwelling unit	1 per efficiency dwelling unit; 3 per 3+ bedrooms; plus 1 for each 20 parking spaces	https://codelibrary.amlegal.com/codes/hinsdaleil/latest/hinsdale_il_zoning/0-0-0-1053#JD_9-104
La Grange	1.5 per dwelling unit		https://www.villageoflagrange.com/94/La-Grange-Zoning-Code#ten
Lisle	2 per dwelling unit	Plus 0.25 guest parking spaces per each dwelling unit within a duplex, townhouse, or multi-unit building located within a development.	https://codelibrary.amlegal.com/codes/lisleil/latest/lisle_il/0-0-0-18681
Wheaton	2 per dwelling unit	Plus 0.25 guest parking spaces per dwelling unit for guest parking.	https://www.wheaton.il.us/584/Zoning-Ordinance
Wood Dale	1.25 per dwelling unit		https://codelibrary.amlegal.com/codes/wooddaleil/latest/wooddale_il/0-0-0-12530
Woodridge	1.5 per dwelling unit		https://codelibrary.amlegal.com/codes/woodridgeil/latest/woodridge_il/0-0-0-10558

1 Introduction

Purpose

The purpose of *Parking Generation Manual* is to present data and information that will enable an analyst to forecast parking demand by time of day on a specific day of the week, at a specific land use. This manual represents the 5th full edition and incorporates data from the previous four editions.

Data contained in *Parking Generation Manual* are presented for informational purposes. The manual describes the composition of the database, presents parking demand information in data plots and tables, and explains the various statistics that are presented to help the analyst. The manual does not provide parking supply standards or recommendations on the preferred application of the data.

Contents

Parking Generation Manual contains text, tables, data plots, and statistics that describe current state-of-the-practice understanding of the relationship between parking demand and the many characteristics associated with an individual development site or land use. The manual presents land use descriptions and data plots for all combinations of available land uses, time periods, independent variables, and settings contained in the ITE database. The manual is available in both hardcopy form and as an electronic file.

The manual is supplemented by ITEParkGen, a desktop application that allows electronic access to the entire ITE parking generation dataset. The web app enables an analyst to reproduce the data plots and statistics presented in the manual. The web app also provides numerous filtering capabilities for the analyst to view subsets of the complete database. Subsets can be created according to the geographic location of the study site, the age of the parking demand count, and the development size.

The analyst is encouraged to review and become familiar with the six chapters of the manual prior to using its data and statistics.

Cautions

The quality and quantity of parking demand data vary significantly by land use code. *Parking Generation Manual* should be considered only the beginning point of information to be used in estimating parking demand. Local conditions and area type can influence parking demand. The wide array of data in the manual blends many site conditions and may not best reflect a particular local condition. Therefore, a survey of a site in a comparable local condition should always be considered as one potential means to estimate parking demand.

While *Parking Generation Manual* is not the final word on parking demand or an authoritative standard, this report contains the best available data on the subject of parking demand related to land use.

3 Definition of Terms

The definitions presented in this chapter are intended for use in the *Parking Generation Manual*. The terms are grouped as follows:

- Setting/Location
- Time Periods
- Independent Variables
- Land Use Subcategories
- Data Page Terms
- Land Use Description Page Terms

Setting/Location

Center City Core—the downtown area for a major metropolitan region at the focal point of a regional light- or heavy-rail transit system. This area type is typified by multi-storied buildings, a wide range of land uses, an extensive pedestrian sidewalk network, and shared and priced parking both on-street and in structured garages or surface lots. The area typically has more jobs than residents and therefore is typically an employment destination. The area also includes the immediate vicinity of the commercial core.

Dense Multi-Use Urban—a fully developed area (or nearly so), with diverse and interacting complementary land uses, good pedestrian connectivity, and convenient and frequent transit. This area type can be a well-developed urban area outside a major metropolitan downtown or a moderate size urban area downtown. The land use mix typically includes office, retail, residential, and often entertainment, hotel, and other commercial uses. The residential uses are typically multifamily or single-family on lots no larger than one-fourth acre. The commercial uses often have little or no setback from the sidewalk. Because the motor vehicle still represents the primary mode of travel to and from the area, there typically is on-street parking and often off-street public parking. The complementary land uses provide the opportunity for short trips within the Dense Multi-Use Urban area, made convenient by walking, biking, or transit. The area is served by significant transit (either rail or bus) that enables a high level of transit usage to and from area development.

General Urban/Suburban—an area associated with almost homogeneous vehicle-centered access. Nearly all person trips that enter or exit a development site are by personal passenger or commercial vehicle. The area can be fully developed (or nearly so) at low-medium density with a mix of residential and commercial uses. The commercial land uses are typically concentrated at intersections or spread along commercial corridors, often surrounded by low-density, almost entirely residential development. Most commercial buildings are located behind the parking area or surrounded by parking. The mixing of land uses is only in terms of their proximity, not in terms of function. A retail land use may focus on serving a regional clientele whereas a service land use may target motorists or pass-by vehicle trips for its customers. Even if the land uses are complementary, a lack of pedestrian, bicycling, and transit facilities or services limit non-vehicle travel.

Proximity to Rail Transit—a qualifier term appended to the study site setting categories that is intended to identify whether a study site is within close proximity of rail transit service. For multifamily housing (Land Uses 220, 221, and 222), the threshold walking distance used for defining a study site as being within close proximity of rail transit is ½ mile to the nearest rail transit station.

Rural—agricultural or undeveloped except for scattered parcels and at very low densities.

Time Periods

December—the period of time during the holiday shopping season between the weekend after Thanksgiving in late November (U.S.) and Christmas in late December. For Movie Theater (Land Use 444) and Multiplex Movie Theater (Land Use 445), the designation of December includes the week between Christmas Day and New Year's Day.

Non-December—anytime during the calendar year except for the period of time during the holiday shopping season between the weekend after Thanksgiving in late November (U.S.) and Christmas in late December.

Weekday—for some land uses, a weekday can represent Monday, Tuesday, Wednesday, Thursday, or Friday and is denoted as Weekday (Monday through Friday). For other land uses, a weekday can represent Monday, Tuesday, Wednesday, or Thursday and is denoted as Weekday (Monday through Thursday). For the latter land uses, Friday is treated separate from the other weekdays in *Parking Generation Manual*.

Independent Variables

Acre—a unit of measurement equal to 43,560 sq. ft. For the purpose of *Parking Generation Manual*, this measure is used to quantify the total gross area of a development site (including land dedicated to public agencies). The distinction between total acres and total developed acres is not always clearly defined in the site acreage reported to ITE. Therefore, caution should be used with this variable. When submitting data, the analyst should indicate the percent of developed acreage and the total acreage of the property.

Acre of Ski Trails—acreage of ski slopes cleared for skiing.

Attendee—a person who is present on a given occasion, during a given event or at a given place.

Bed—a designated place to sleep for a group quarters resident or medical facility patient. An occupied bed is a bed for which there is an assigned person.

Bedroom—a designated room for sleeping with one or more beds.

Berth—a designated place where a boat can anchor at a marina or wharf.

Boarding—a passenger whose bus or light rail transit trip originates at the station under study on a given day.

Bowling Lane—a single lane available for the purposes of bowling.

Cage—a designated location available for the purpose of a single person hitting baseballs or softballs within a contained area.

Daily Enplanement—a passenger whose commercial airline flight originates at the airport under study on a given day.

Daily Lift Ticket—a ticket or pass sold to a person to enable their use of a ski lift on a specific day. This value does not include season passes.

Dwelling Unit—a residential location such as a house, apartment, condominium, townhouse, mobile home, or manufactured home in which people may live. An occupied dwelling unit is a dwelling unit in which people currently live.

Employee—a full-time, part-time, or per diem/contract worker. The number of employees refers to the total number of persons employed at a facility, not just those in attendance at the particular hour or day the data are collected.

Field—any area constructed, equipped, and/or marked for outdoor activities and sports.

Gross Floor Area (GFA)—the sum of the area of each floor level of a building (expressed in square feet), including cellars, basements, mezzanines, penthouses, corridors, lobbies, stores, and offices, that are within the principal outside faces of exterior walls, not including architectural setbacks or projections. Included are all areas that have floor surfaces with clear standing head room (6 ft. 6 in. minimum) regardless of their use. With the exception of buildings containing enclosed malls or atriums, GFA is equal to gross leasable area and gross rentable area. Occupied gross floor area refers to GFA within the facility which is currently being utilized. If a ground-level area, or part thereof, within the principal outside faces of the exterior walls is not enclosed, this floor area is considered part of the overall GFA of the building. However, unroofed areas and unenclosed roofed-over spaces, except those contained within the principal outside faces of exterior walls, should be excluded from the area calculations. For the purpose of parking generation calculation, the floor area of all parking garages within the building should not be included in the GFA of the entire building. The majority of land uses in *Parking Generation Manual* use GFA as an independent variable.

Gross Leasable Area (GLA)—the total floor area designed for tenant occupancy and exclusive use, including any basements, mezzanines, or upper floors, expressed in square feet and measured from the centerline of joint partitions and from outside wall faces. For the purpose of parking generation calculation, the floor area of all parking garages within the building should not be included within the GLA of the entire building. GLA is the area for which tenants pay rent; it is the area that produces income for the property owner. Occupied gross leasable area refers to GLA within the facility which is currently in use. Leased space that is not in productive use is not considered occupied. In the retail business, GLA lends itself readily to measurement and comparison and it has been adopted by the shopping center industry as its standard for statistical comparison. Accordingly, GLA is used in *Parking Generation Manual* for shopping centers. For a specialty retail center, strip center, discount store, and free-standing retail facility, GLA usually equals GFA.

Hole—a single combination of a tee, fairway, and green on a golf course.

Member—an individual who belongs to a group or organization.

Movie Screen—a room within a movie theater that contains seats and the presentation of a movie.

Occupied Bed (see Bed)

Occupied Dwelling Unit (see Dwelling Unit)

Occupied Gross Floor Area (see Gross Floor Area)

Occupied Room (see Room)

Operating Room—a room that is equipped and staffed for a surgical procedure.

Parking Space—an individual stall within a parking lot or garage designated for the use of a parked private motor vehicle. An occupied space is a parking space in which a vehicle is parked.

Rink—an enclosed area for skating.

Room—the partitioned part of the inside of a building used for lodging such as a hotel or motel. An occupied room is a room that is rented by a lodging guest.

School Population—the total number of full-time equivalent students plus employees (staff and faculty) at a college or university.

Seat—a place on which an individual can sit. It may be a chair or stool. Multiple seats may be present. A bench or pew could provide multiple seats. The number includes outdoor seating if it is being provided at the time of the survey.

Storage Unit—a vault rented for the storage of goods in what is typically referred to as a self-storage facility. An occupied storage unit is one that is rented.

Student—a person enrolled in an institution such as a school, college, or day care center on either a full-time or part-time basis. The number of students refers to the total number of persons enrolled at a facility, not just those present at the time the study is conducted.

Table—a bounded table with a flat surface on which cue sports are played.

Tennis Court—an indoor or outdoor facility specifically designed for an individual tennis match.

Land Use Subcategories

Family—used for High-Turnover Sit-Down Restaurant (Land Use 932) to denote a site without a bar or lounge facility.

Income Limits—used for Affordable Housing (Land Use 223) to denote a site with household income limitations for its tenants. If the site also has a minimum age threshold, the site falls in the Senior subcategory. If there is no minimum age threshold and the site consists entirely of single-room-only units, the site falls in the Single Room Only subcategory.

Lounge/Bar—used for High-Turnover Sit-Down Restaurant (Land Use 932) to denote a site that includes a bar or lounge facility.

Senior—used for Affordable Housing (Land Use 223) to denote a site with a minimum age threshold for its tenants (i.e., senior housing).

Single Room Only—used for Affordable Housing (Land Use 223) to denote a site with only single-room-only units. If the site also has a minimum age threshold, the site falls in the Senior subcategory.

Data Page Terms

33rd Percentile—the point at which 33 percent of the values fall at or below and 67 percent of the values are above. If the number of study sites for a combination of independent variable, time period, and setting for an individual land use is comprised of relatively few data points, the percentile value can represent an interpolation between actual values. This number is not intended to recommend a policy about the level of parking that should be supplied. It is provided solely as qualitative reference for the analyst.

85th Percentile—the point at which 85 percent of the values fall at or below and 15 percent of the values are above. If the number of study sites for a combination of independent variable, time period, and setting for an individual land use is comprised of relatively few data points, the percentile value can represent an interpolation between actual values. This number is not intended to recommend a policy about the level of parking that should be supplied. It is provided solely as qualitative reference for the analyst.

95 Percent Confidence Interval—a measure of confidence in the statistical data to the average. It indicates the range within which there is 95 percent likelihood the average will fall. This range is shown when data for 20 or more study sites are available. It is computed as two standard errors plus or minus the average.

Average Number of [Independent Variable]—the average value of the independent variable for data presented on the specific data page.

Average Peak Period Parking Demand—the observed peak period parking demand (vehicles parked) divided by the quantity of the independent variable (such as building area, employees) expressed as a rate. For examples, the rate is commonly expressed as vehicles per 1,000 sq. ft. GFA, vehicles per employee, or vehicles per dwelling unit.

Average Rate (or Weighted Average Rate)—the weighted average number of parked vehicles at a development site per one unit of the independent variable. It is calculated by dividing the sum of all parked vehicles for all contributing data point sites by the sum of all independent variable units for all contributing data point sites. The weighted average rate is used rather than the average of the individual rates because of the variance within each data set or generating unit. Data sets with a large variance will over-influence the average rate if they are not weighted. The data plot includes a dashed line corresponding to the weighted average rate, extending between the lowest and highest independent variable values for data points.

Coefficient of Determination (R^2)—the percent of the variance in the number of parked vehicles associated with the variance in the independent variable value. This value is presented for every fitted curve equation. If the R^2 value is 0.75, then 75 percent of the variance in the number of parked

vehicles is accounted for by the variance in the size of the independent variable. As the R^2 value approaches 1.0 the better the fit; as the R^2 value approaches zero, the worse the fit.

Coefficient of Variation—an indicator of the precision of the results of a data set. It is computed by dividing the standard deviation by the mean (average) and expressed as a percentage. The smaller the coefficient of variation is (i.e., closer to 0 percent), the lower the variation in the data points in the data set.

Fitted Curve and Fitted Curve Equation—the single-variable regression analysis of the independent and dependent variable expressed in an optimal mathematical relationship. The fitted curve and equation are presented if the coefficient of determination (R^2) for the curve is at least 0.50. If the variables are related linearly, the equation has the following format: $T = aX + b$. In a logarithmic relationship, the equation has the following format: $Ln(T) = a\ Ln(X) + b$. The data plot includes a solid line corresponding to the equation, extending between the lowest and highest independent variable values for data points.

Independent Variable, X—a physical, measurable, and predictable characteristic that describes the study site or baseline site (for example, gross floor area) and that has a direct relationship to the variation in the number of parked vehicles generated by a land use. The term "explanatory variable" is also used.

Number of Studies—the total number of studies reported for the specific data set.

Parked Vehicles, P—the total number of parked vehicles, the dependent variable in the data plot; shown on the y-axis.

Peak Period of Parking Demand—the hour (or hours) of the day during which the highest parking demand rate occurs. If a single hour is shown, the available parking demand data suggest that it is the hour during which peak parking demand typically occurs. If a several-hour period is shown, there are two possibilities:

- There are insufficient data available to determine a definitive peak hour, or
- Data suggest that the peak hour for an individual site could fall within any of the peak period hours and that all peak period hours have parking demand ratios typically within 15 percent of the peak parking demand calculation.

Analysts should attempt to obtain parking demand data throughout (and possibly beyond) the identified peak period of parking demand for each parking study conducted.

Range of Rates—the minimum and maximum parking generation rates from all the studies reported.

Standard Deviation—a measure of data dispersion relative to the calculated average. The lower the standard deviation, the less data dispersion there is in the data and the better the data fit to the average rate. In *Parking Generation Manual*, the reported standard deviation is based on the weighted average, not the mean.

Study Site—a data point plotted on the graph based on a study performed for the specific land use code.

Land Use Description Page Terms

Parking Supply (or Parking Spaces)—the total number of parking spaces that are provided or available at the study site, regardless of whether or not they are occupied. Parking supply should include only marked spaces and should not include areas designated for standing vehicles. Parking supply is different from parking demand.

Parking Supply Ratio—expressed in terms of spaces per an independent variable (i.e., spaces per 1,000 sq. ft. GFA or spaces per dwelling unit). The ratio denominator is based on total units, rather than occupied units.

Time-of-Day Distribution [of Parking Demand]—the variation of the parking demand rates for various hours of the day divided by the peak period parking demand rate. The time-of-day distribution is expressed as a percentage (100 percent represents the hour(s) of peak parking demand). This information is generally only provided for the study sites with at least five consecutive hours of parking demand data.

Total Parking Demand—the accumulation of vehicles parked at a given site at any associated point in time. This value should be the highest observed number of vehicles within the period of observation. Total parking demand includes all parking associated with that land use whether in an off-street parking facility, parked illegally, parked on-street, or in a remote parking lot. Total parking demand does not include standing vehicles, awaiting the pick-up or drop-off of a passenger, or in a drive-through lane.

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

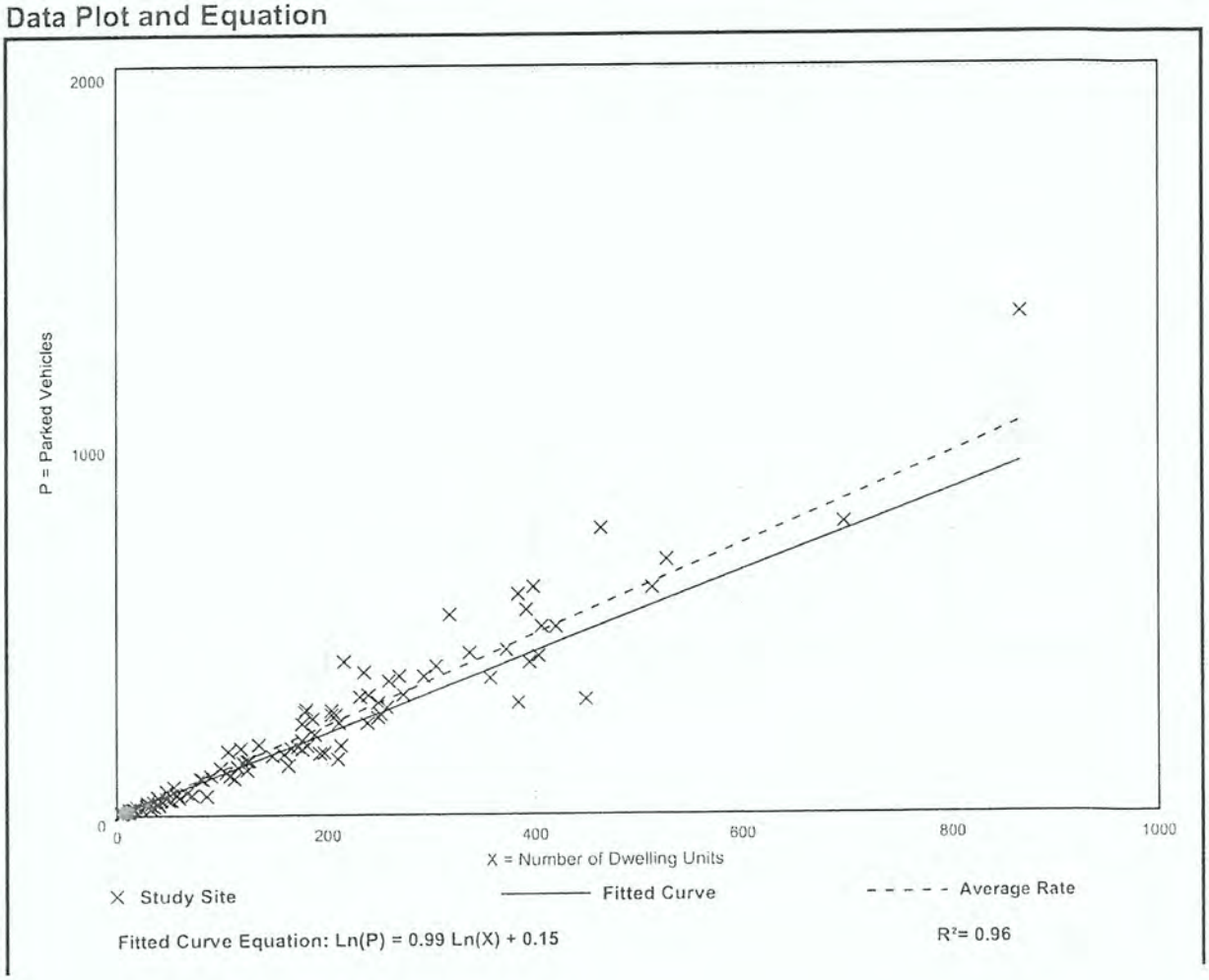
Multifamily Housing (Low-Rise)
(220)

Peak Period Parking Demand vs: Dwelling Units
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: 119
Avg. Num. of Dwelling Units: 156

Peak Period Parking Demand per Dwelling Unit

Average Rate	Range of Rates	33rd / 85th Percentile	95% Confidence Interval	Standard Deviation (Coeff. of Variation)
1.21	0.58 - 2.50	1.03 / 1.52	1.16 - 1.26	0.27 (22%)

Data Plot and Equation



Eq. Rate
@ 144 units = 159 174

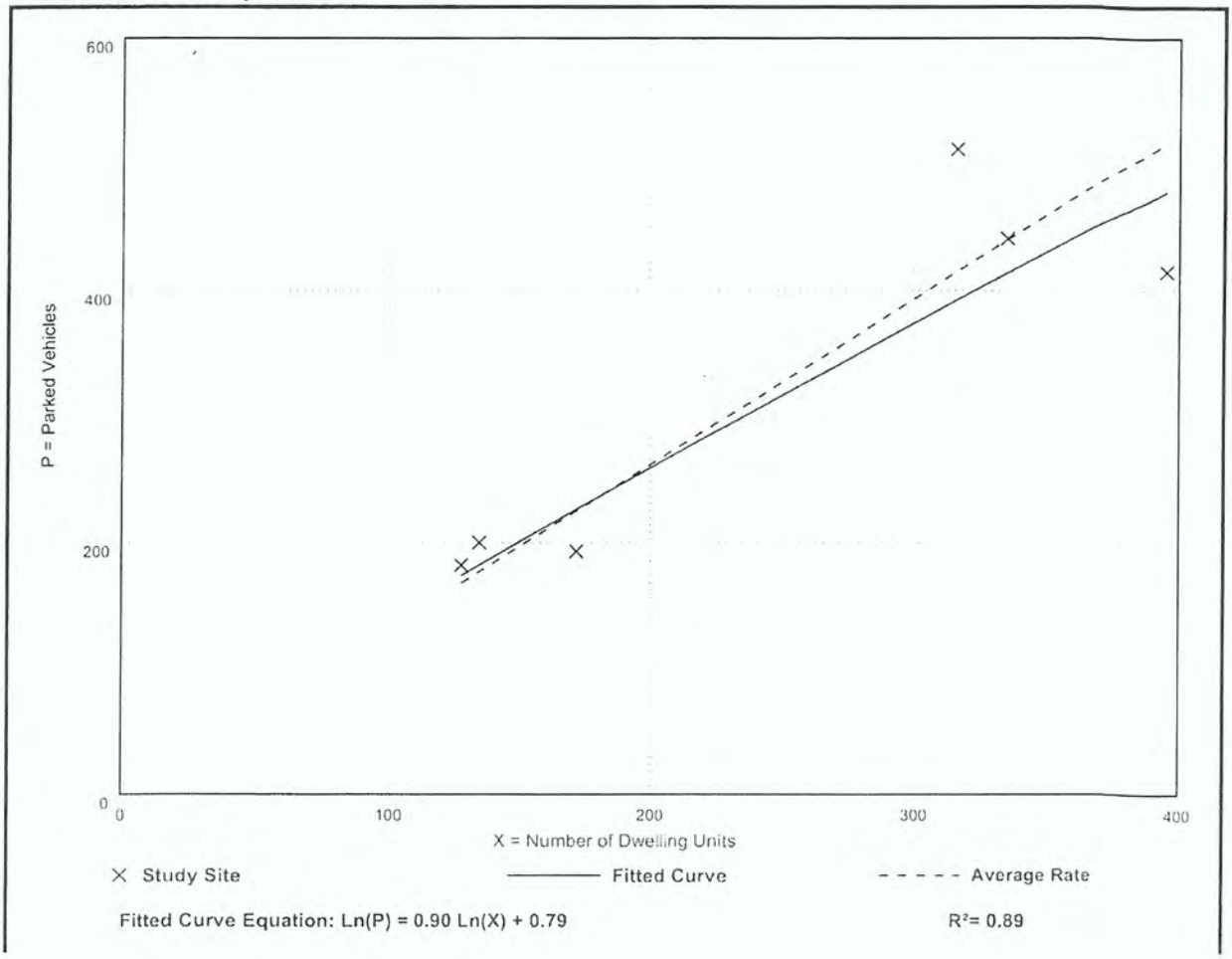
Multifamily Housing (Low-Rise)
(220)

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: 6
Avg. Num. of Dwelling Units: 247

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	1.05 - 1.62	1.18 / 1.61	***	0.23 (18%)

Data Plot and Equation



Fitted Curve Equation: Ln(P) = 0.90 Ln(X) + 0.79

R^2= 0.89

@ 144 Eq 193 Rate 189

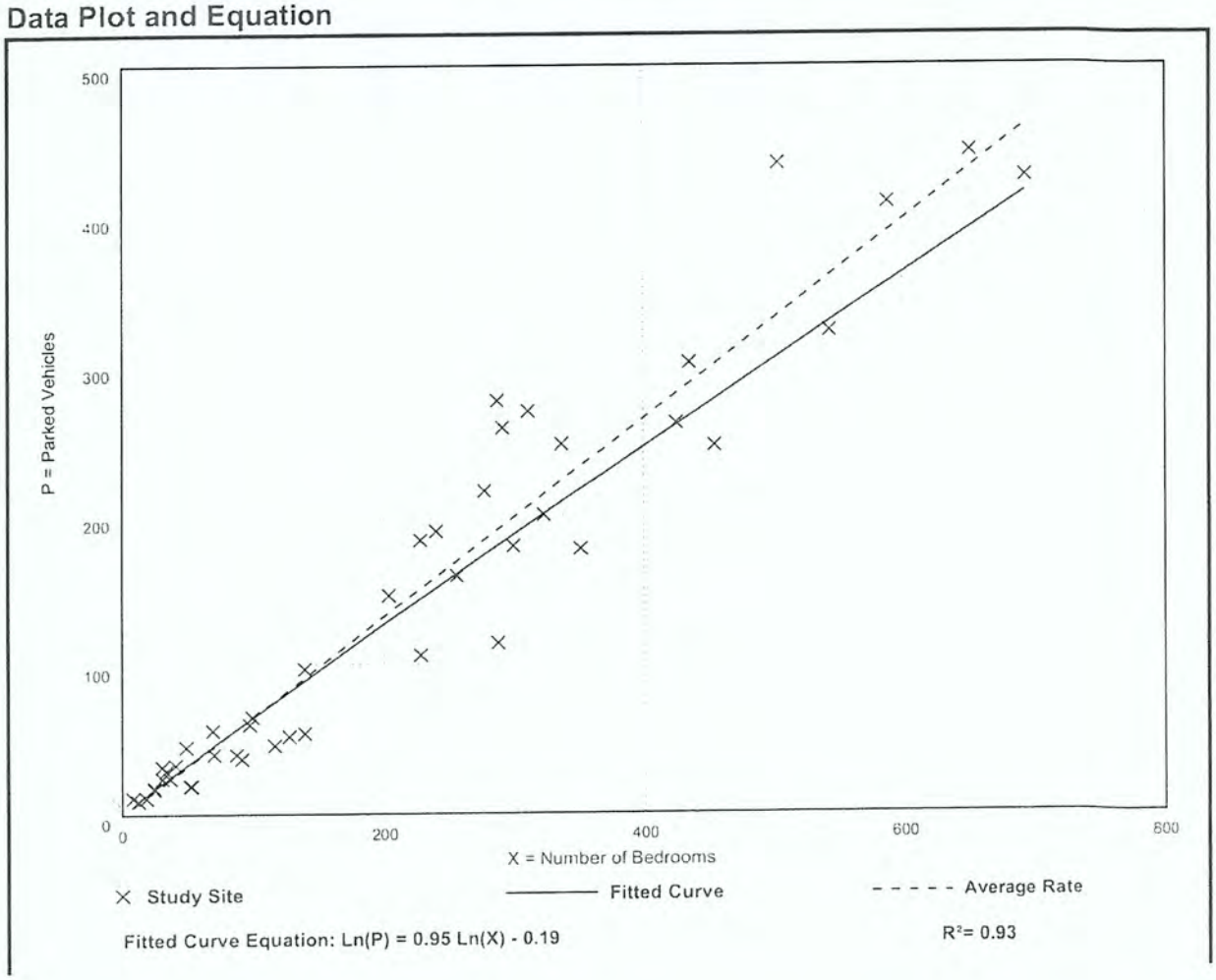
Multifamily Housing (Low-Rise)
(220)

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



@ 144

eq 93

rate 95

Multifamily Housing (Low-Rise)
(220)

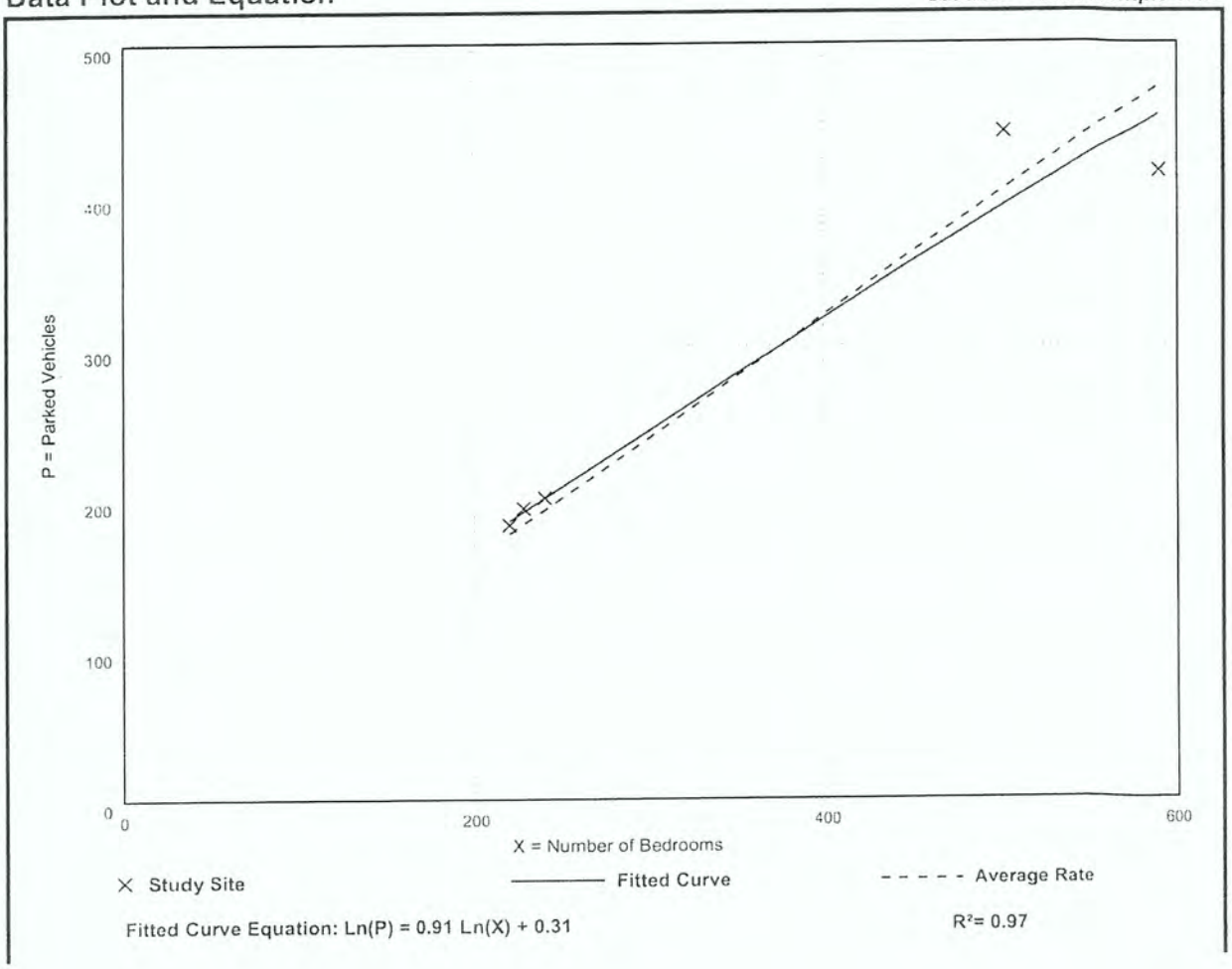
Peak Period Parking Demand vs: Bedrooms
On a: Saturday
Setting/Location: General Urban/Suburban (no nearby rail transit)
Peak Period of Parking Demand: 11:00 p.m. - 7:00 a.m.
Number of Studies: 5
Avg. Num. of Bedrooms: 356

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

Table 5
COMPARISON OF PARKING RATIOS AT SIMILAR DEVELOPMENTS

Development Name	Number of Units	Number of Bedrooms	Number of Parking Spaces	Spaces/Unit	Spaces/ Bedroom
AMLI – Deerfield	240	329	396	1.65	1.2
8700 Waukegan - Morton Grove	184	258	276	1.50	1.1
Tapestry – Glenview	290	403	490	1.69	1.2
Northshore 770 - Northbrook	347	545	571	1.65	1.0
Woodview - Deerfield	248	369	412	1.49	1.1
Mellody Farms – Vernon Hills	260	388	485	1.76	1.2
IL 62/Plum Grove Road - Schaumburg	372	--	635	1.71	--
Cedarlake – Plainfield	284	--	443	1.56	--
404 Social - Lincolnshire	302	458	534	1.77	1.2
The Elaine – Northbrook	338	--	580	1.72	--
			Average:	**1.65**	**1.14**
Proposed Apartment Development	281	371	464	1.63	1.25

Table A
PARKING RATIOS OF APARTMENT DEVELOPMENTS (NEAR PUBLIC TRANSIT)

Development	Location	Units	Parking	Parking Ratio
River 595	Des Plaines	60	104	1.73
Walker & Parker	Clarendon Hills	42	42	1.00
Forest & Gilbert	Downers Grove	89	102	1.15
Burlington Station	Downers Grove	89	106	1.19
Maple & Main	Downers Grove	115	161	1.40
Adriatic Grove	Downers Grove	48	64	1.33
Residences at the Grove	Downers Grove	294	345	1.17
100 North Addison	Elmhurst	165	199	1.21
1717 Ridge	Evanston	175	205	1.17
AMLI Evanston	Evanston	214	312	1.46
Central Station	Evanston	80	80	1.00
E2	Evanston	356	371	1.04
The Reserve at Evanston	Evanston	195	219	1.12
Midtown Square	Glenview	138	160	1.16
The Reserve at Glenview	Glenview	239	333	1.39
Uptown La Grange	La Grange	254	336	1.32
Ninety7Fifty on the Park	Orland Park	295	300	1.02
Wheaton 121	Wheaton	306	400	1.31
	Average	**175**	**213**	**1.23**

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).

	Percent of Peak Parking Demand		
Hour Beginning	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.

		Parking Supply Ratio	
Setting	Proximity to Rail Transit	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

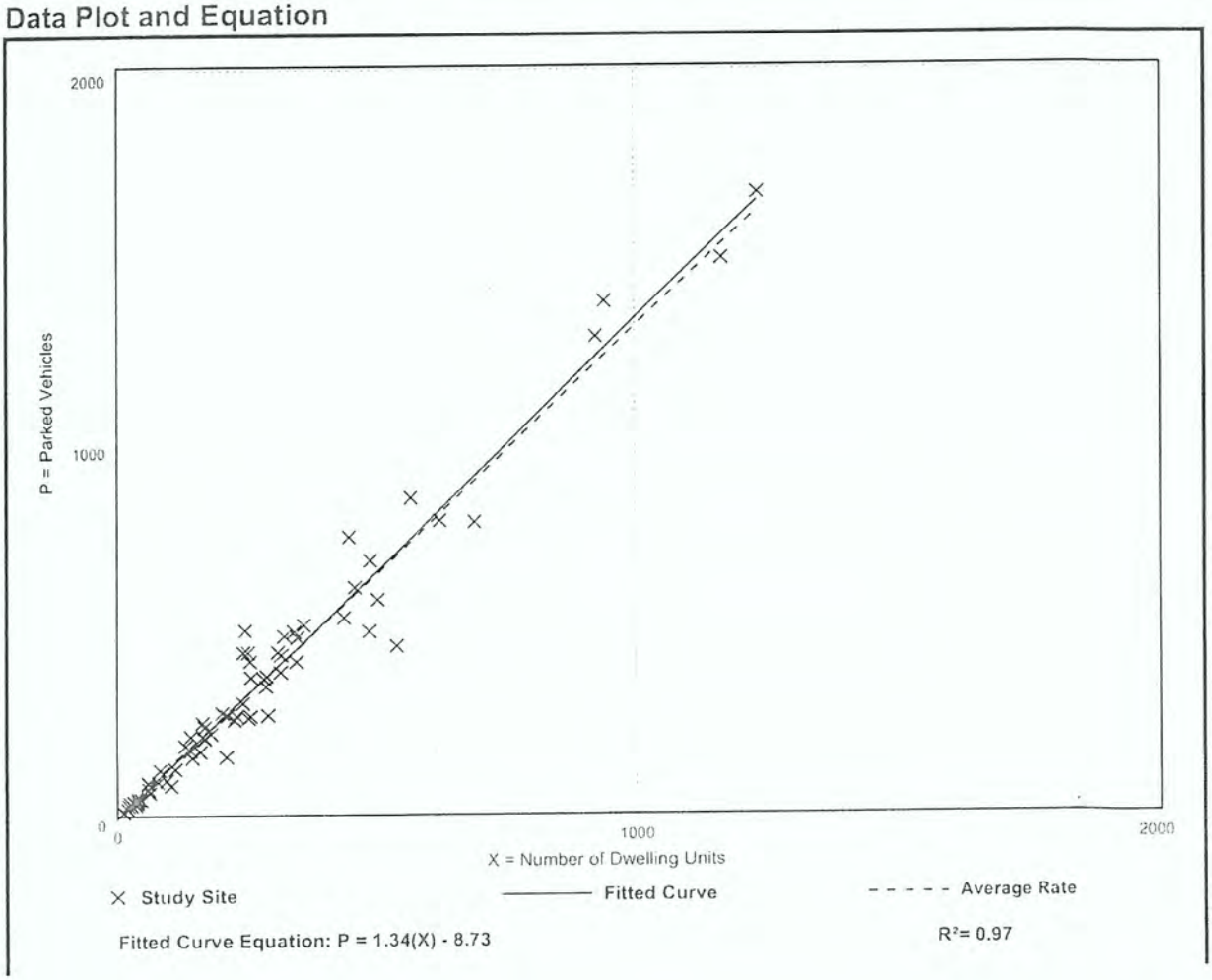
Multifamily Housing (Mid-Rise)
(221)

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



@ 144

Eq 184

Rate 189

Multifamily Housing (Mid-Rise)
(221)

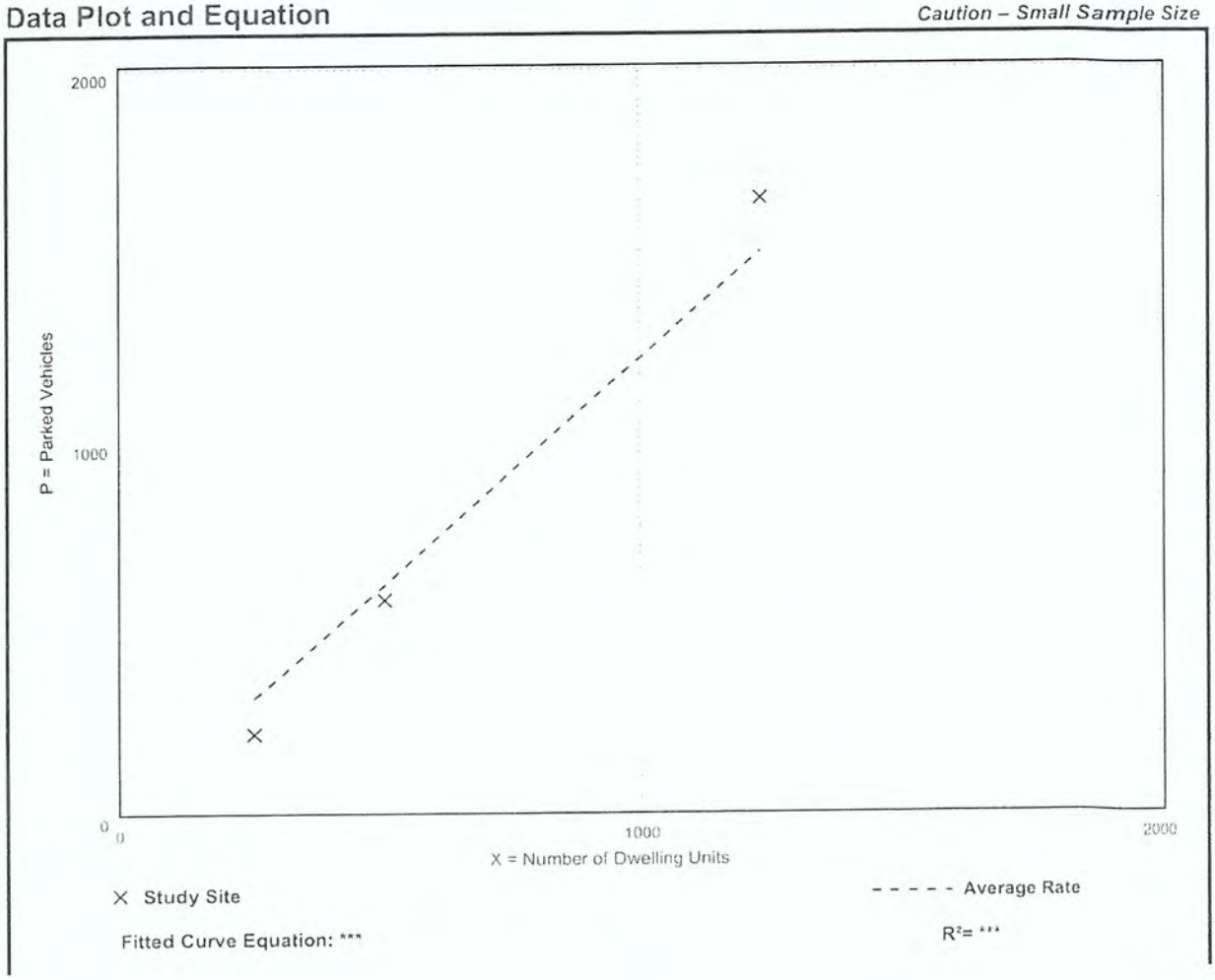
Peak Period Parking Demand vs: Dwelling Units
On a: Saturday
Setting/Location: General Urban/Suburban (no nearby rail transit)
Peak Period of Parking Demand: 11:00 p.m. - 7:00 a.m.
Number of Studies: 3
Avg. Num. of Dwelling Units: 665

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



Rate
1.16

Multifamily Housing (Mid-Rise)
(221)

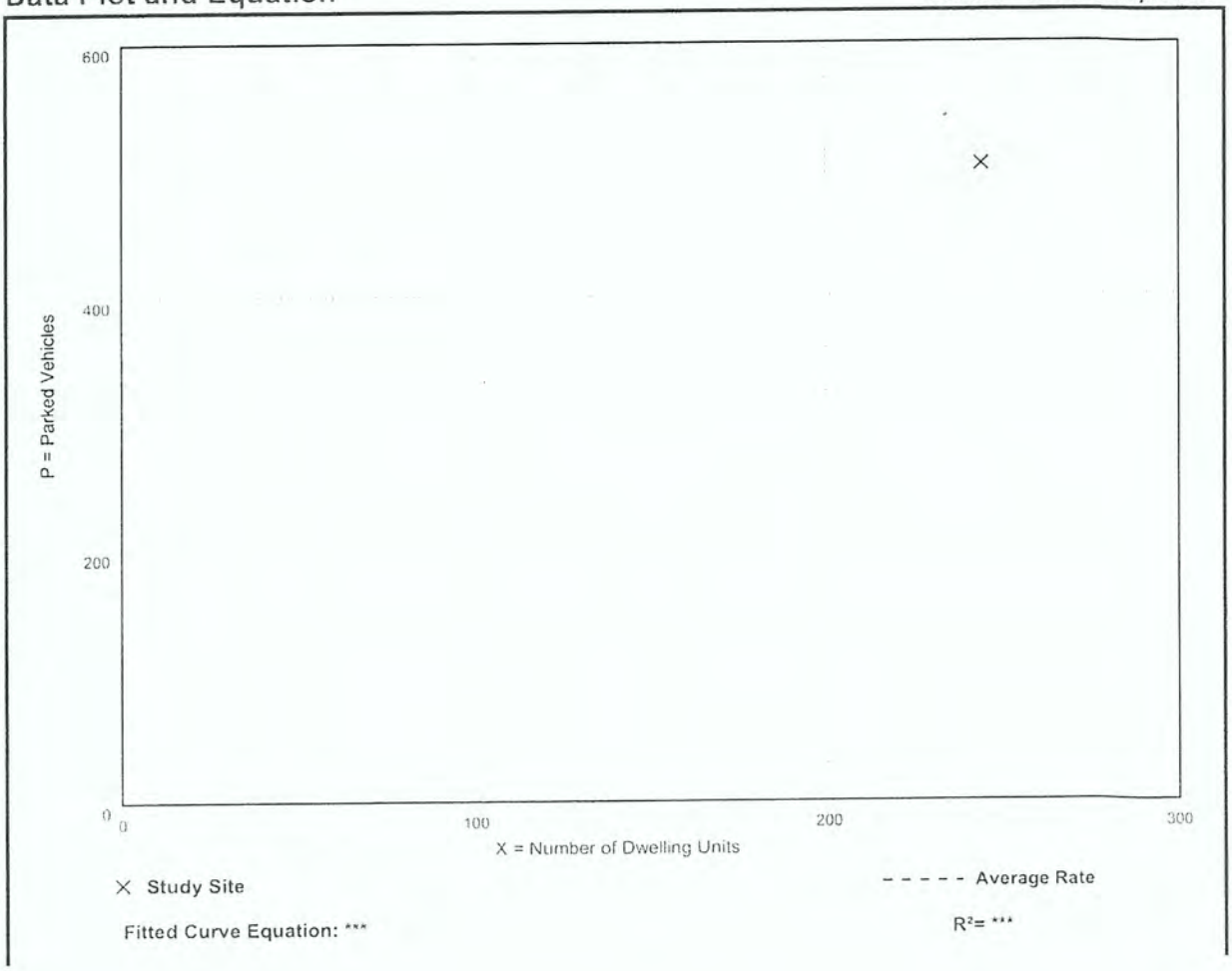
Peak Period Parking Demand vs: Dwelling Units
On a: Sunday
Setting/Location: General Urban/Suburban (no nearby rail transit)
Peak Period of Parking Demand: 11:00 p.m. - 7:00 a.m.
Number of Studies: 1
Avg. Num. of Dwelling Units: 245

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



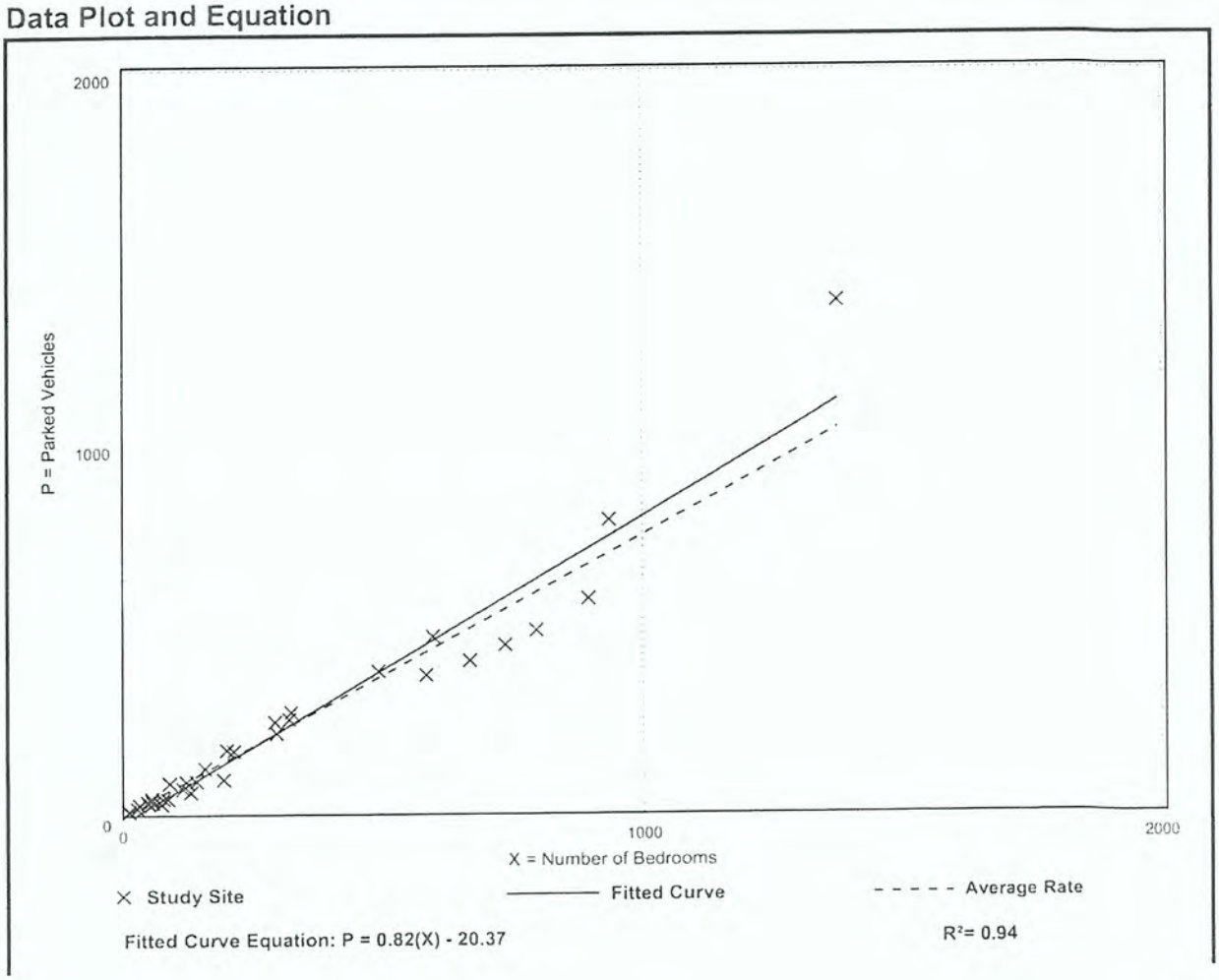
Multifamily Housing (Mid-Rise)
(221)

Peak Period Parking Demand vs: 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)

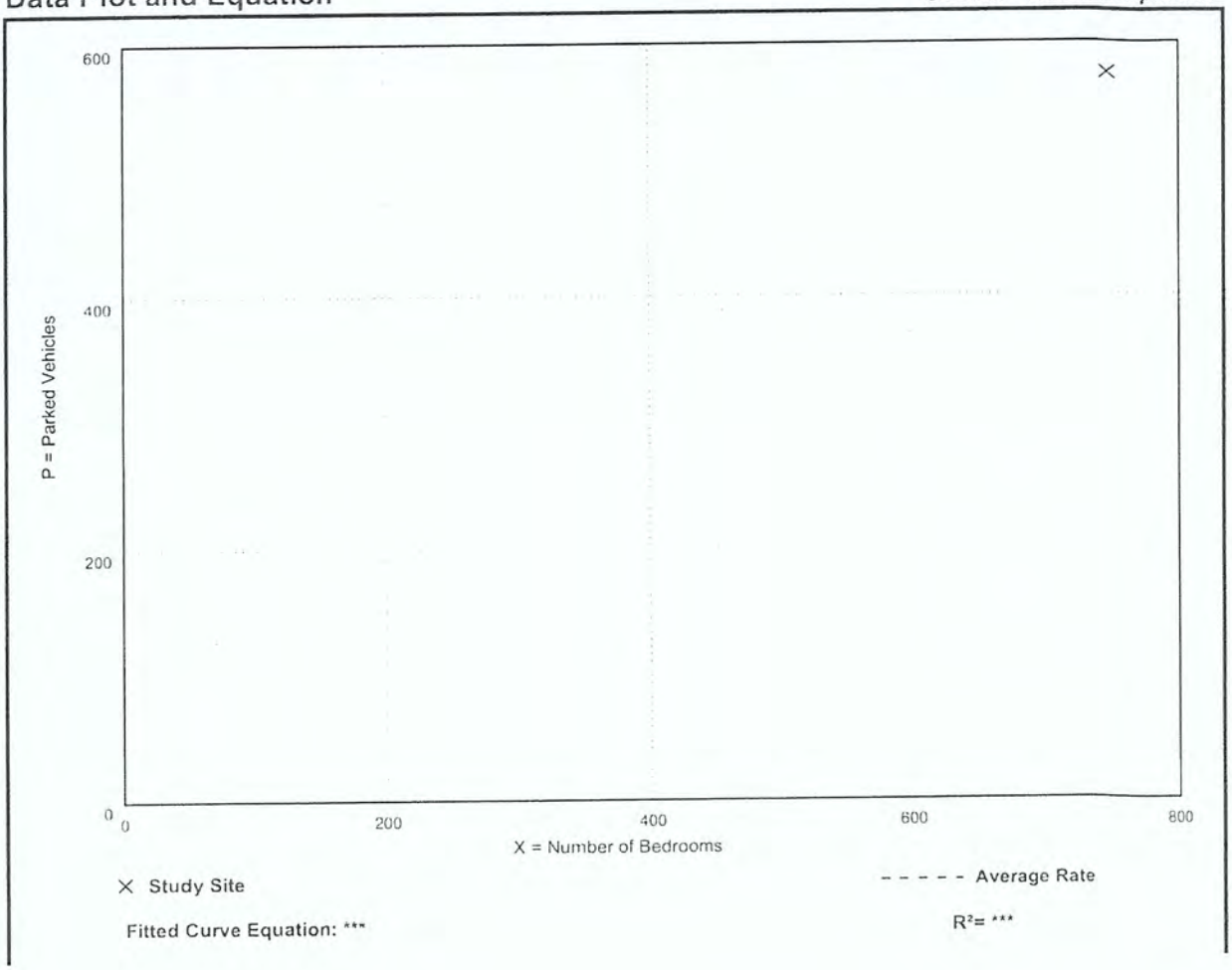
Peak Period Parking Demand vs: Bedrooms
On a: Saturday
Setting/Location: General Urban/Suburban (no nearby rail transit)
Peak Period of Parking Demand: 11:00 p.m. - 7:00 a.m.
Number of Studies: 1
Avg. Num. of Bedrooms: 749

Peak Period Parking Demand per Bedroom

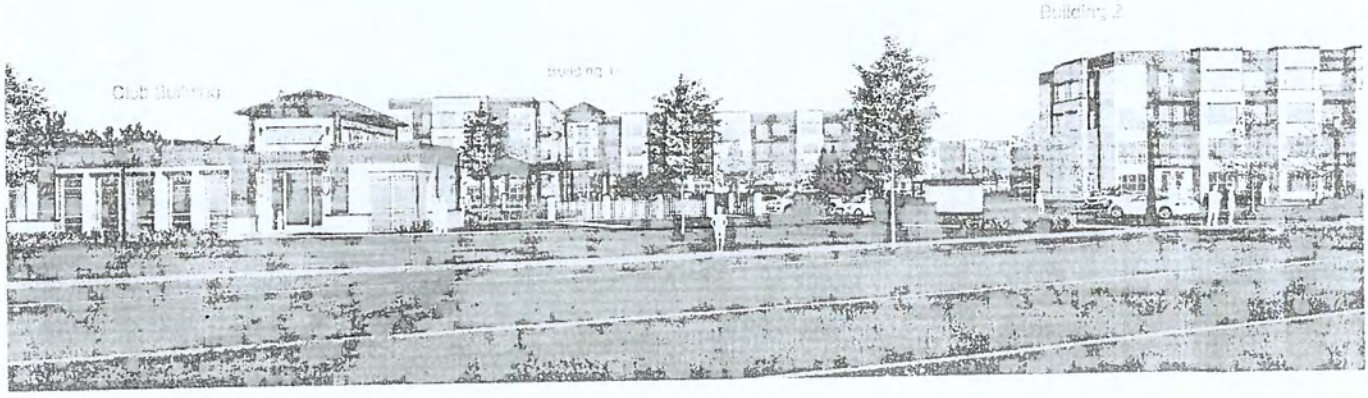
Average Rate	Range of Rates	33rd / 85th Percentile	95% Confidence Interval	Standard Deviation (Coeff. of Variation)
0.77	0.77 - 0.77	*** / ***	***	*** (***)

Data Plot and Equation

Caution – Small Sample Size



Traffic Impact Study
Esplanade Place Residential Development
Downers Grove, Illinois



Prepared For:

m&r
DEVELOPMENT

KLOA
Kenig, Lindgren, O'Hara, Aboona, Inc.

March 9, 2017

1. Introduction

This report summarizes the methodologies, results, and findings of a traffic impact study conducted by Kenig, Lindgren, O'Hara, Aboona, Inc. (KLOA, Inc.) for the proposed Esplanade Place residential development to be located in Downers Grove, Illinois. The site, which is currently vacant, is located in the northwest corner of the intersection of Lacey Road with Woodcreek Drive with the Esplanade within Locust Creek business park. As proposed, the site will be developed with three, four-story apartment buildings with 99 units each for a total of 297 units. Parking will be accommodated via a 65-space parking garage within each building and 295 exterior parking spaces for a total of 490 parking spaces. Access to the development will be provided via a right-in/right-out access drive on Lacey Road and via two full-movement access drives on Woodcreek Drive.

The purpose of this study was to examine background traffic conditions, assess the impact that the proposed development will have on traffic conditions in the area, and determine if any additional roadway or access improvements are necessary to accommodate traffic generated by the proposed development. **Figure 1** shows the location of the site in relation to the area roadway system. **Figure 2** shows an aerial view of the site.

The sections of this report present the following:

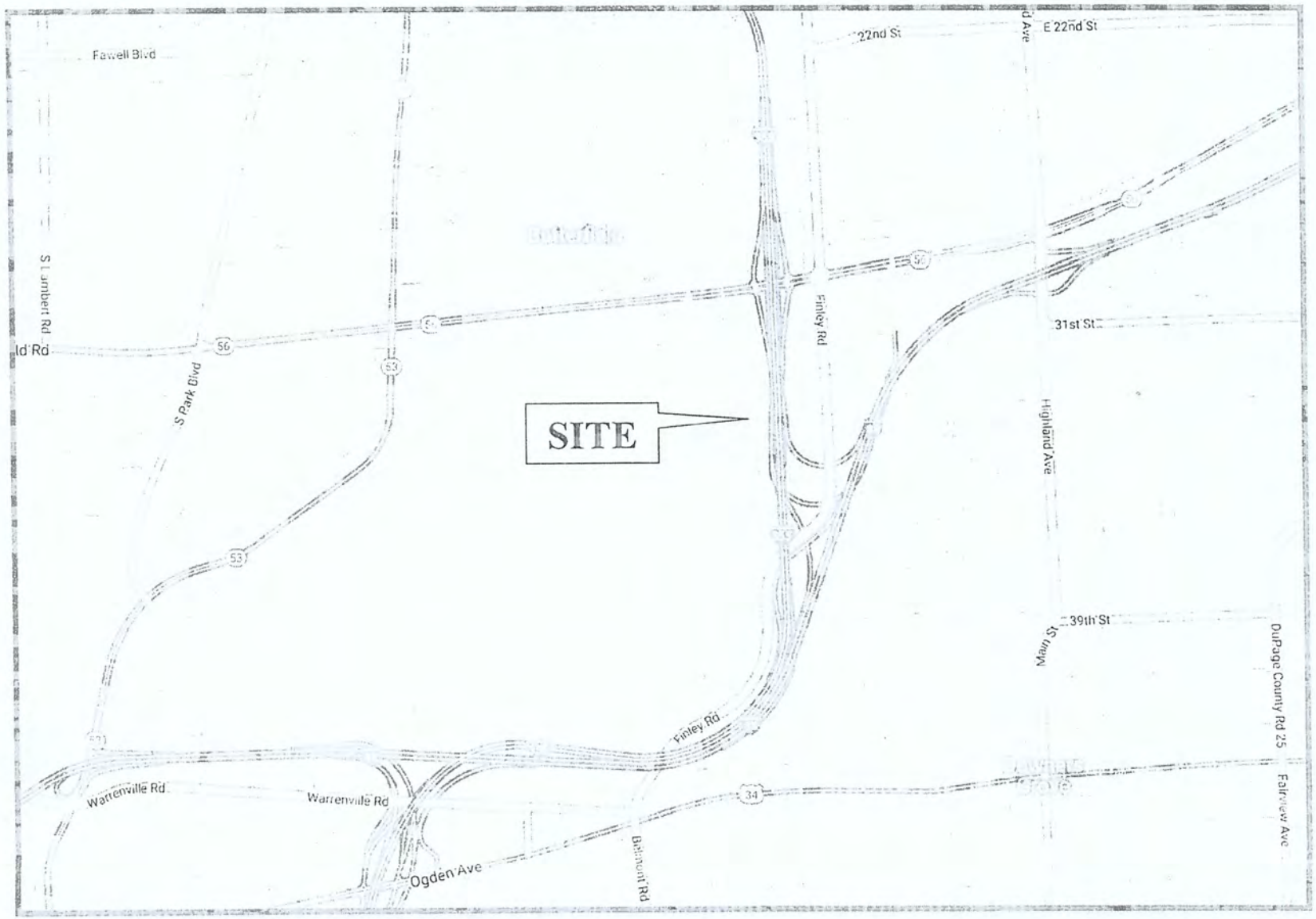
- Existing roadway conditions
- A description of the proposed development
- Directional distribution of the development traffic
- Vehicle trip generation for the development
- Future traffic conditions including access to the development
- Traffic analyses for the weekday morning and weekday evening peak hours
- Recommendations with respect to adequacy of the site access and adjacent roadway system
- Evaluation of the adequacy of the proposed parking supply

Traffic capacity analyses were conducted for the weekday morning and weekday evening peak hours for the following conditions:

1. Existing Traffic Conditions – Analyzes the capacity of the existing roadway system using peak hour traffic volumes conducted in 2023.

2. Year 2029 No-Build Conditions – Analyzes the capacity of the existing roadway system using existing traffic volumes increased by an ambient area growth factor not attributable to any particular development.

3. Year 2029 Total Projected Conditions – Analyzes the capacity of the future roadway system using the projected traffic volumes that include the Year 2029 no-build volumes and the traffic estimated to be generated by the proposed development.



Site Location

Figure 1

KLOA
Kenig,Lindgren,O'Hara,Aboona,Inc.

-Aerial View of Site

Figure 2

KLOA
Kenig,Lindgren,O'Hara,Aboona,Inc.

2. Existing Conditions

Existing transportation conditions in the vicinity of the site were documented based on field visits conducted by KLOA, Inc. in order to obtain a database for projecting future conditions. The following provides a description of the geographical location of the site, physical characteristics of the area roadway system including lane usage and traffic control devices, and existing peak hour traffic volumes.

Site Location

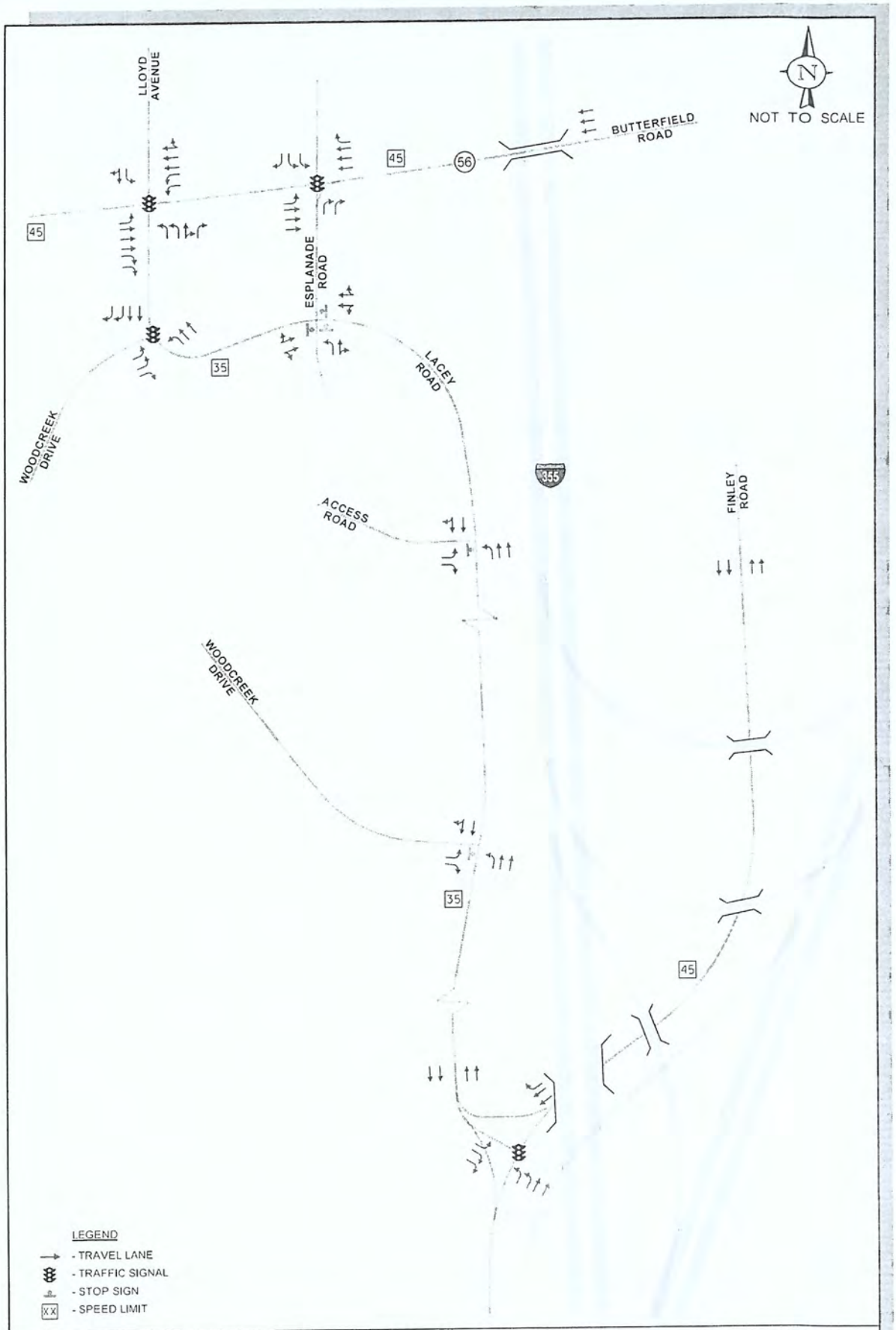
The site, which is currently vacant, is bounded by vacant space to the north, Lacey Road to the east, and Woodcreek Drive to the south and west. The site is located within the Esplanade at Locust Creek business park. Land uses within the vicinity are primarily office to the north and medical or industrial to the south.

Existing Roadway System Characteristics

The characteristics of the existing roadways near the development are described below and illustrated in **Figure 3.**

Butterfield Road (Illinois Route 56) is an east-west other principal arterial roadway that provides three lanes in each direction narrowing to two lanes in each direction west of Woodcreek Drive. At its signalized intersection with Woodcreek Drive and Lloyd Avenue, Butterfield Road provides an exclusive left-turn lane, three through lanes, and dual right-turn lanes on the eastbound approach and dual left-turn lanes, two through lanes, and a shared through/right-turn lane on the westbound approach. At its signalized intersection with Esplanade Road, Butterfield Road provides an exclusive left-turn lane and three through lanes on the eastbound approach. This intersection is located within the storage length of the westbound dual left-turn lanes from the intersection of Butterfield Road with Lacey Road and as such the westbound approach provides two lanes that are the remainder of the dual left-turn lanes, three through lanes and an exclusive right-turn lane. A full diamond interchange with I-355 is provided approximately 1,200 feet east of Esplanade Road. Butterfield Road is under the jurisdiction of the Illinois Department of Transportation (IDOT), is designated as a Strategic Regional Arterial (SRA), carries an annual average daily traffic (AADT) volume of 30,700 vehicles (IDOT 2021), and has a posted speed limit of 45 miles per hour.

Finley Road is a north-south minor arterial roadway that provides two through lanes in each direction generally separated by a raised landscaped median. At its signalized intersection with Lacey Road, Finley Road provides dual left-turn lanes and two through lanes on the northbound approach and two through lanes and an exclusive right-turn lane on the southbound approach. Finley Road is under the jurisdiction of the DuPage County Division of Transportation (DuDOT) and has a posted speed limit of 45 miles per hour. Finley Road carried an AADT volume of 20,800 vehicles in 2016 and 10,900 vehicles in 2020 (IDOT).



ESPLANADE PLACE APARTMENTS
DOWNERS GROVE, ILLINOIS

EXISTING ROADWAY CHARACTERISTICS

KLOA
Kenig, Lindgren, O'Hara, Aboona, Inc.

Job No: 23-003 Figure: 3

Woodcreek Drive is a circulatory local roadway that serves the majority of the buildings within the Esplanade at Locust Creek business park. At its signalized intersection with Butterfield Road, Woodcreek Drive provides dual left-turn lanes, a shared through/right-turn lane, and an exclusive right-turn lane on the northbound approach and is aligned opposite Llyod Avenue. At its signalized intersection with Lacey Road, Woodcreek Drive provides two through lanes and dual right-turn lanes on the southbound approach and dual left-turn lanes and an exclusive right-turn lane on the eastbound approach. At its unsignalized intersection with Lacey Road, Woodcreek Drive provides an exclusive left-turn lane and an exclusive right-turn lane on the eastbound approach and is under stop sign control. Woodcreek Drive is under the jurisdiction of the Village of Downers Grove.

Lacey Road is a north-south minor collector road that extends from Woodcreek Drive east and then south to Finley Road serving the Esplanade at Locust Point business park. The road generally provides two lanes in each direction separated by a landscaped median. At its signalized intersection with Woodcreek Drive, Lacey Road provides an exclusive left-turn lane and two through lanes on the northbound approach. At its unsignalized all-way stop controlled intersection with Esplanade Road, Lacey Road provides a combined left/through lane and a combined through/right-turn lane on both approaches. At its unsignalized intersection with the access road north of the site, Lacey Road provides an exclusive left-turn and two through lanes on the northbound approach and a through lane and a shared through/right-turn lane on the southbound approach. The access road provides an exclusive left-turn lane and an exclusive right-turn lane. At its unsignalized intersection with Woodcreek Drive, Lacey Road provides an exclusive left-turn and two through lanes on the northbound approach and a through lane and a shared through/right-turn lane on the southbound approach. At its signalized intersection with Finley Road, Lacey Road provides an exclusive left-turn lane and dual right-turn lanes on the eastbound approach. Lacey Road is under the jurisdiction of the Village of Downers Grove and has a posted speed limit of 35 miles per hour. Lacey Road carried an AADT volume of 3,750 vehicles in 2016 and 1,650 vehicles in 2020 (IDOT).

Esplanade Road is a northbound only local road that extends north from Lacey Road to Butterfield Road. At its signalized intersection with Butterfield Road, Esplanade Road provides dual right turn lanes on the northbound approach and is aligned opposite a Home Depot access drive. The access drive provides dual left-turn lanes and an exclusive right-turn lane on the southbound approach. At its all-way stop sign controlled intersection with Lacey Road, Esplanade Road is aligned opposite an access drive which provides an exclusive left-turn lane and a shared through/right-turn lane on the northbound approach. Esplanade Road is under the jurisdiction of the Village of Downers Grove.

Lloyd Avenue is a north-south local road that extends north from Butterfield Road and provides one lane in each direction. At its signalized intersection with Butterfield Road, Lloyd Avenue is aligned opposite Woodcreek Drive and provides an exclusive left-turn lane and a shared through-right-turn lane on the southbound approach. Llyod Avenue is under the jurisdiction of Milton Township and has a posted speed limit of 25 miles per hour.

Existing Traffic Volumes

In order to determine current traffic conditions within the study area, KLOA, Inc. conducted peak period traffic counts utilizing Miovision Scout Collection Units at the following intersections:

- Butterfield Road with Woodcreek Drive and Lloyd Avenue
- Lacey Road with Woodcreek Drive (North)
- Lacey Road with Esplanade Road
- Lacey Road with the access road north of the site
- Lacey Road with Woodcreek Drive (South)
- Lacey Road with Finley Road

The traffic counts were conducted in February 2023, during the weekday morning (7:00 A.M. to 9:00 A.M.) and weekday evening (4:00 P.M. to 6:00 P.M.) peak periods. The results of the traffic counts show that the peak hours of traffic generally occur between 7:30 A.M. and 8:30 A.M. during the weekday morning peak period and between 4:30 P.M. and 5:30 P.M. during the weekday evening peak period. Copies of the traffic count summary sheets are included in the Appendix. Turning movements to and from the north leg at the intersection of Butterfield Road with Esplanade Road were based on traffic counts conducted in 2017.

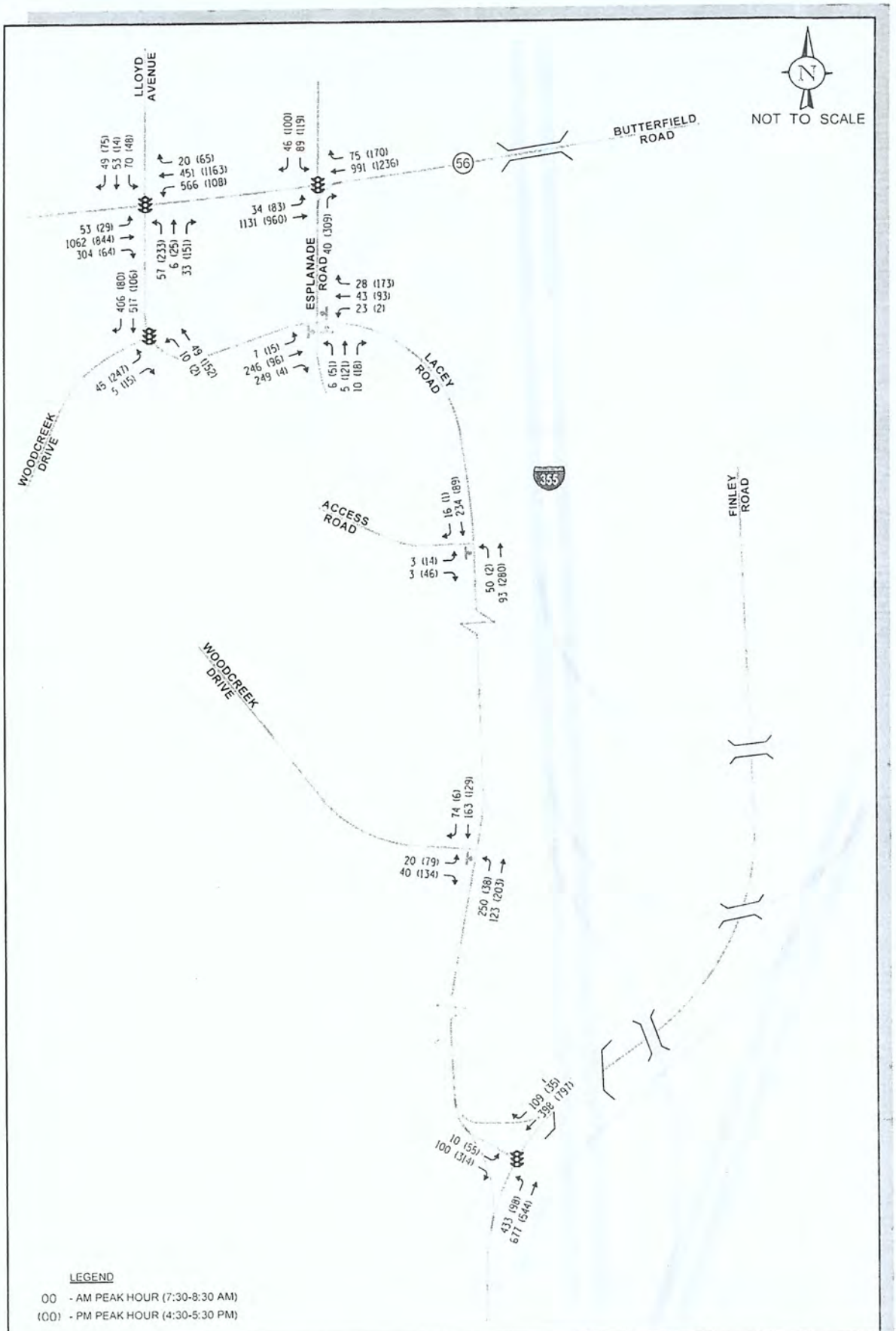
The existing traffic volumes are illustrated in **Figure 4**.

Crash Analysis

KLOA, Inc. obtained accident data for the most recent available past six years (2017 to 2021) for the study area intersections. A review of the data revealed the following:

- Two crashes were reported at the intersection of Lacey Road with Woodcreek Drive (north)
- No crashes were reported at the intersections of Lacey Road with Woodcreek Drive (south) or Lacey Road with the access road north of the site.
- Three crashes were reported at the intersection of Lacey Road with Esplanade Road
- No fatalities were reported at any intersection during the reviewed period.

Summaries of the crash data at the intersections of Butterfield Road with Woodcreek Drive and Llyod Avenue and Lacey Road with Finley Road are shown in **Tables 1 and 2**.



ESPLANADE PLACE APARTMENTS
DOWNERS GROVE, ILLINOIS

EXISTING TRAFFIC VOLUMES

KLOA
Kenig, Lindgren, O'Hara, Aboona, Inc.

Job No: 23-003 Figure: 4

Table 1
BUTTERFIELD ROAD WITH WOODCREEK DRIVE AND LLYOD AVENUE
CRASH SUMMARY

Year	Type of Crash Frequency							
	Angle	Pedestrian	Object	Rear End	Sideswipe	Turning	Other	Total
2017	0	0	0	1	0	2	0	3
2018	1	0	0	2	0	1	0	4
2019	0	0	2	2	1	2	0	7
2020	0	0	0	1	0	2	0	3
2021	0	0	0	0	0	1	0	1
Total	**1**	**0**	**2**	**6**	**1**	**8**	**0**	**18**
Average	**<1.0**	**--**	**<1.0**	**1.2**	**<1.0**	**1.6**	**--**	**3.6**

Table 2
LACEY ROAD WITH FINLEY ROAD - CRASH SUMMARY

Year	Type of Crash Frequency							
	Angle	Pedestrian	Object	Rear End	Sideswipe	Turning	Other	Total
2017	0	0	0	0	0	0	0	0
2018	0	0	0	2	0	0	0	2
2019	0	0	0	2	0	0	0	2
2020	0	0	0	0	0	1	0	1
2021	0	0	0	0	0	0	0	0
Total	**0**	**0**	**0**	**4**	**0**	**1**	**0**	**5**
Average	**--**	**--**	**--**	**<1.0**	**--**	**<1.0**	**--**	**1.0**

3. Traffic Characteristics of the Proposed Development

In order to properly evaluate future traffic conditions in the surrounding area, it was necessary to determine the traffic characteristics of the proposed development, including the directional distribution and volumes of traffic that it will generate.

Proposed Site and Development Plan

As proposed, the site will be developed with three, four-story apartment buildings with 99 units each for a total of 297 units. Parking will be accommodated via a 65-space parking garage within each building and 295 exterior parking spaces for a total of 490 parking spaces. Access to the development will be provided as follows:

- A proposed right-in/right-out access drive on Lacey Road located approximately 300 feet north of Woodcreek Drive. The access drive will provide one inbound lane and one outbound lane with left-turn movements restricted via the median on Lacey Road. Outbound movements will be under stop sign control.

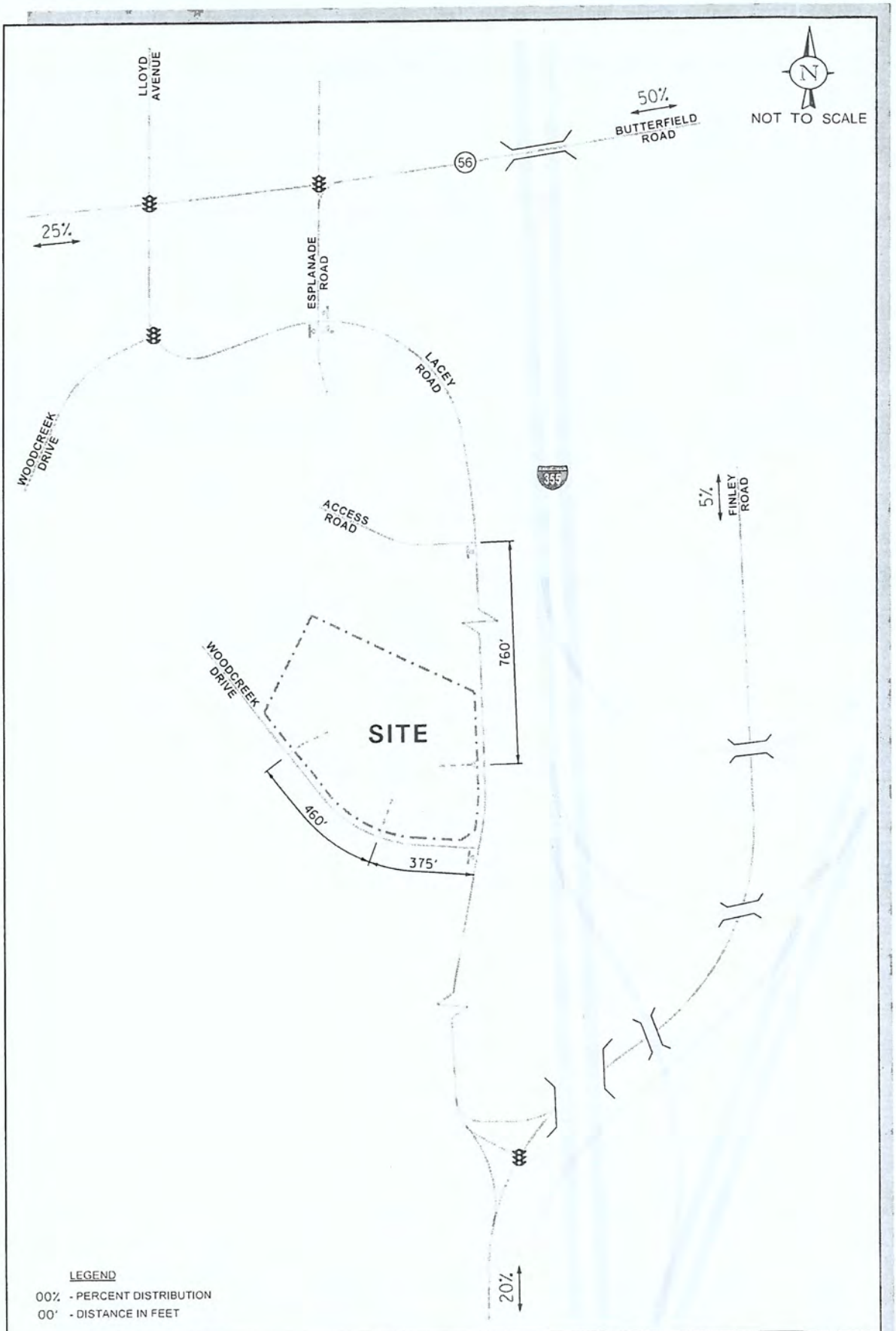
- A proposed full-movement access drive on Woodcreek Drive located approximately 840 feet west of Lacey Road. The access drive will provide one inbound lane and one outbound lane with outbound movements under stop sign control.

- A proposed full-movement access drive on Woodcreek Drive located approximately 390 feet west of Lacey Road. The access drive will provide one inbound lane and one outbound lane with outbound movements under stop sign control.

A copy of the preliminary site plan is included in the Appendix.

Directional Distribution

The directions from which residents will approach and depart the site were estimated based on existing travel patterns, as determined from the traffic counts. **Figure 5** illustrates the directional distribution of the development-generated traffic. Figure 5 also shows the distance, in feet, between the existing and proposed access intersections.



ESPLANADE PLACE APARTMENTS
DOWNERS GROVE, ILLINOIS

DIRECTIONAL DISTRIBUTION

KLOA
Kenig, Lindgren, O'Hara, Aboona, Inc.

Job No: 23-003 Figure: 5

Peak Hour Traffic Volumes

The number of peak hour trips estimated to be generated by the proposed senior residential development was based on vehicle trip generation rates contained in *Trip Generation Manual*, 11th Edition, published by the Institute of Transportation Engineers (ITE). The "Multifamily Housing, Mid-Rise" (Land-Use Code 221) rates were used to determine the traffic to be generated by the development. Table 3 shows the weekday morning and weekday evening peak hour traffic to be generated by the proposed senior residential development as well as the daily total traffic volumes.

As can be seen in Table 3, the proposed development is projected to generate more outbound trips during the morning peak hour and more inbound trips during the peak hour. This is typical of residential developments with residents leaving in the morning and returning in the evening. As shown in Figure 4, the other developments located withing the vicinity of the site generate primarily inbound trips during the weekday morning peak hour and primarily outbound trips during the weekday evening peak hour. This is typical of industrial and office developments. As such, traffic generated by the proposed development will primarily travel in the opposite direction of a majority of traffic in the area and will therefore have a reduced impact on area intersections.

Table 3
PROJECTED DEVELOPMENT-GENERATED TRAFFIC VOLUMES

ITE Land-Use Code	Type/Size	Weekday Morning Peak Hour			Weekday Evening Peak Hour			Daily Traffic		
		In	Out	Total	In	Out	Total	In	Out	Total
221	Multifamily Housing, Mid-Rise (297 Units)	27	92	119	71	45	116	685	685	1,370

4. Projected Traffic Conditions

The total projected traffic volumes include the existing traffic volumes, increase in background traffic due to growth, and the traffic estimated to be generated by the proposed subject development.

Development Traffic Assignment

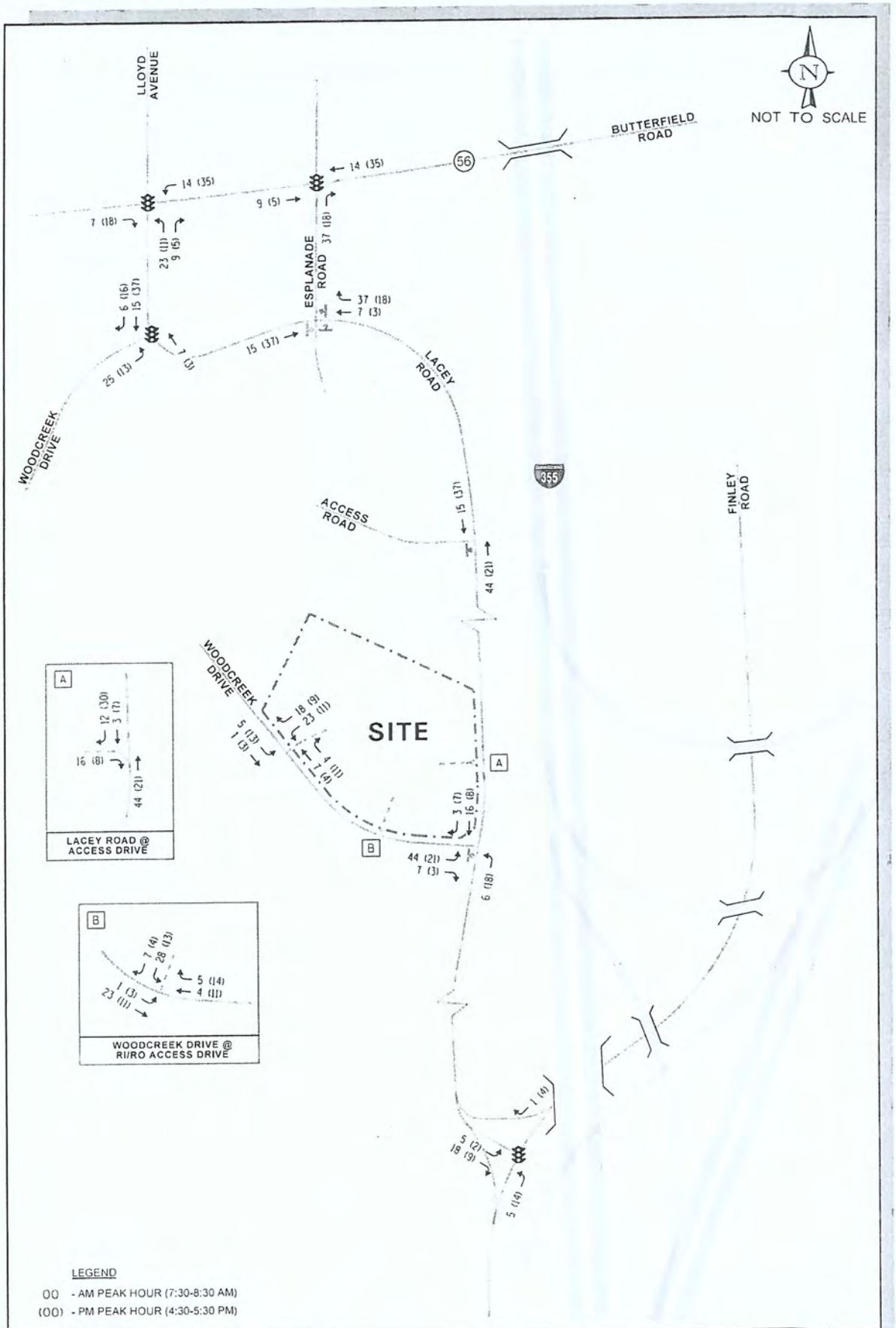
The estimated weekday morning and evening peak hour traffic volumes that will be generated by the proposed development were assigned to the roadway system in accordance with the previously described directional distribution (Figure 5). The traffic assignment for the development is illustrated in **Figure 6.**

Background (No-Build) Traffic Conditions

The existing traffic volumes (Figure 4) were increased by a regional growth factor to account for the increase in existing traffic related to regional growth in the area (i.e., not attributable to any particular planned development). Based on Average Daily Traffic (ADT) projections provided by the Chicago Metropolitan Agency for Planning (CMAP), the existing traffic volumes were increased by an annually compounded growth rate of 0.7 percent per year for six years (buildout year plus five years) for a total of approximately 4.3 percent to project Year 2028 background conditions. **Figure 7** illustrates the Year 2029 no-build conditions. A copy of the CMAP 2050 projections letter is included in the Appendix.

Total Projected Traffic Volumes

The development-generated traffic (Figure 6) was added to the Year 2029 no-build traffic volumes (Figure 7) to determine the Year 2029 total projected traffic volumes, shown in **Figure 8.**

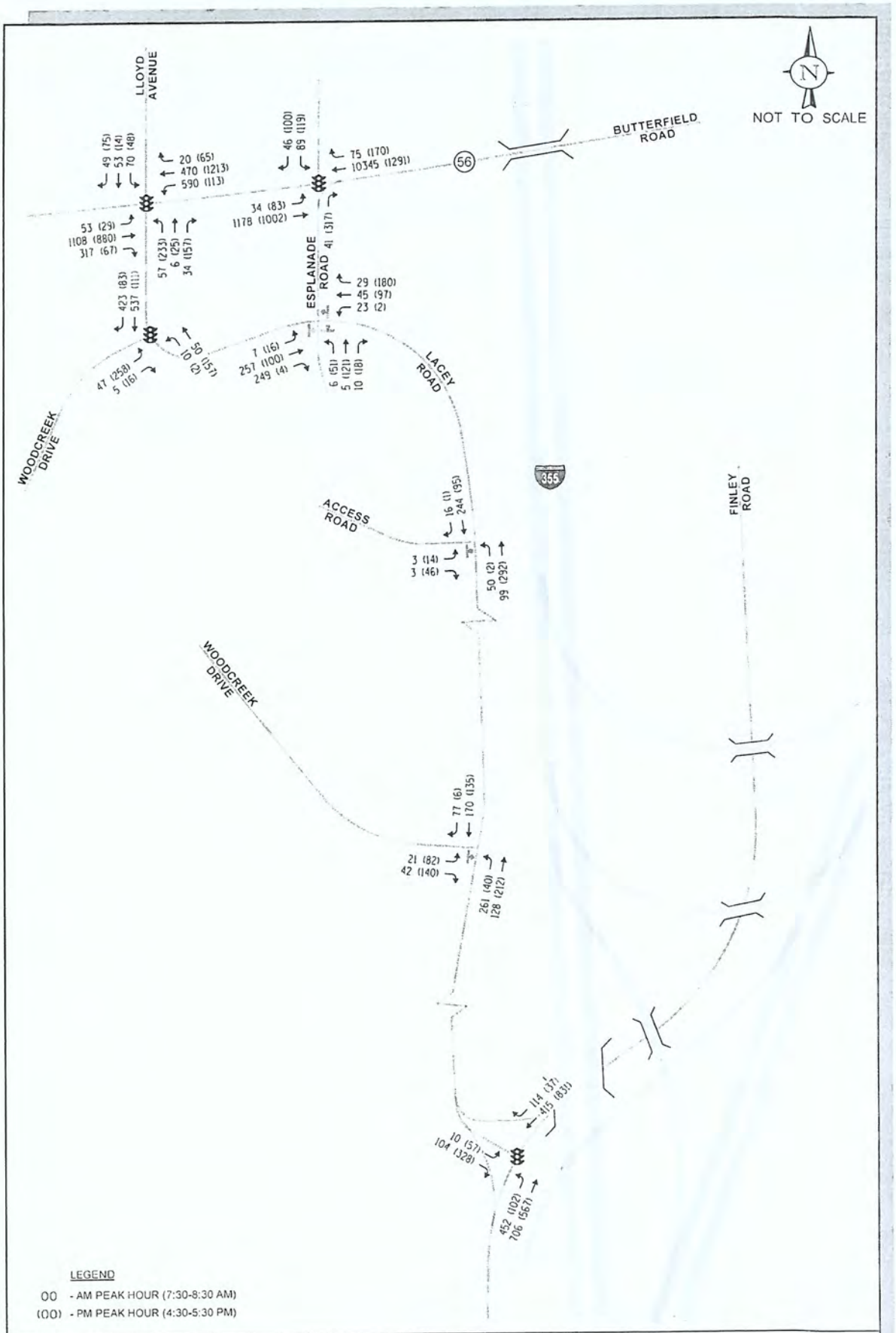


ESPLANADE PLACE APARTMENTS
DOWNERS GROVE, ILLINOIS

SITE-GENERATED TRAFFIC VOLUMES

KLOA
Kenig, Lindgren, O'Hara, Aboona, Inc.

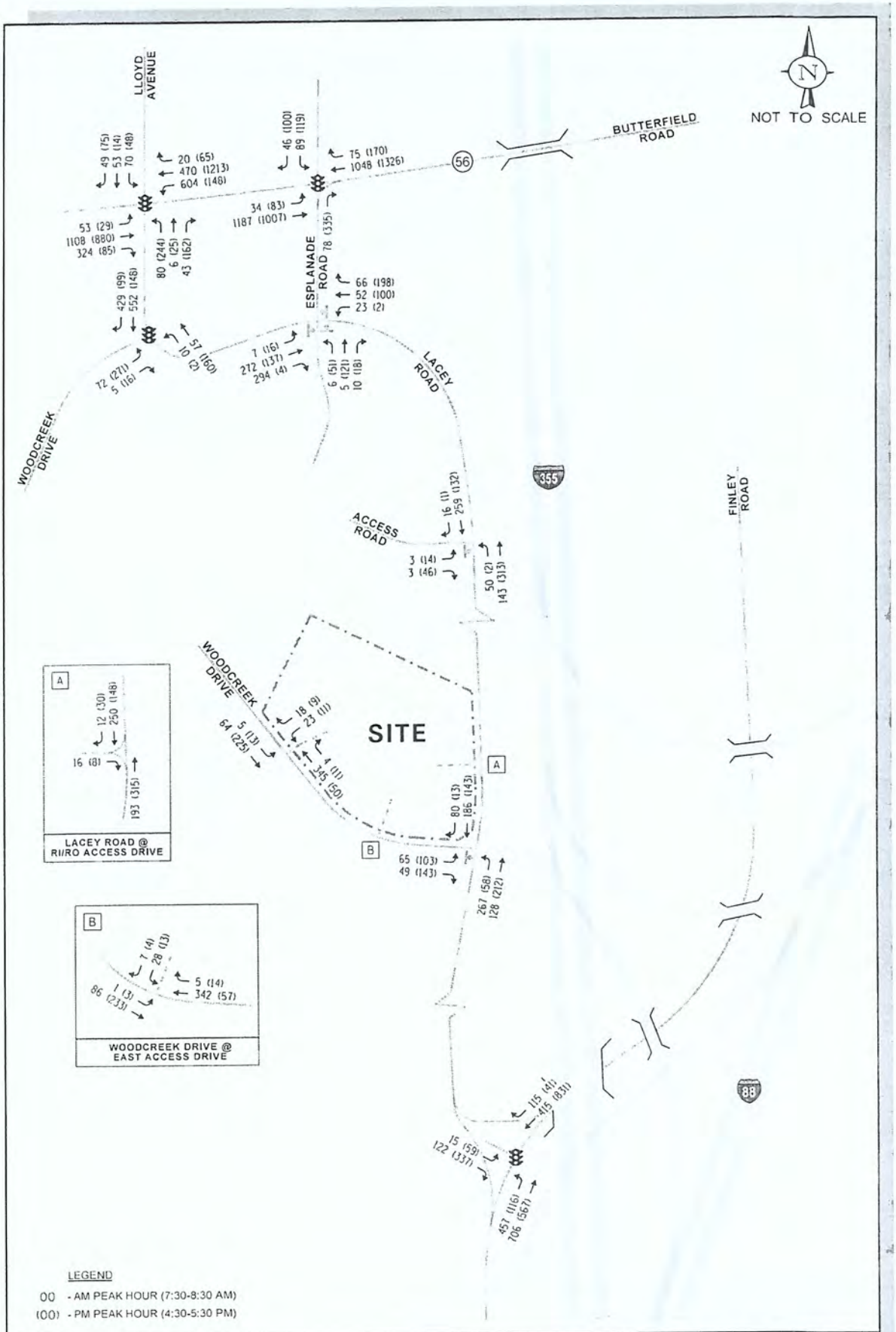
Job No: 23-003 Figure: 6



ESPLANADE PLACE APARTMENTS
DOWNERS GROVE, ILLINOIS

YEAR 2029 NO-BUILD TRAFFIC VOLUMES

KLOA
Job No: 23-003 Figure: 7



ESPLANADE PLACE APARTMENTS
DOWNERS GROVE, ILLINOIS

YEAR 2029 TOTAL TRAFFIC VOLUMES

KLOA

Job No: 23-003 Figure: 8

5. Traffic Analysis and Recommendations

The following provides an evaluation conducted for the weekday morning and weekday evening peak hours. The analysis includes conducting capacity analyses to determine how well the roadway system and access drives are projected to operate and whether any roadway improvements or modifications are required.

Traffic Analyses

Roadway and adjacent or nearby intersection analyses were performed for the weekday morning and weekday evening peak hours for the existing, Year 2029 no-build, and Year 2029 total projected traffic volumes.

The traffic analyses were performed using the methodologies outlined in the Transportation Research Board's *Highway Capacity Manual (HCM)*, 6th Edition and analyzed using Synchro/SimTraffic 11 software. The analysis for the traffic-signal controlled intersections were accomplished using actual and field-measured cycle lengths and phasings to determine the average overall vehicle delay and levels of service.

The analyses for the unsignalized intersections determine the average control delay to vehicles at an intersection. Control delay is the elapsed time from a vehicle joining the queue at a stop sign (includes the time required to decelerate to a stop) until its departure from the stop sign and resumption of free flow speed. The methodology analyzes each intersection approach controlled by a stop sign and considers traffic volumes on all approaches and lane characteristics.

The ability of an intersection to accommodate traffic flow is expressed in terms of level of service, which is assigned a letter from A to F based on the average control delay experienced by vehicles passing through the intersection. The *Highway Capacity Manual* definitions for levels of service and the corresponding control delay for signalized intersections and unsignalized intersections are included in the Appendix of this report.

Summaries of the traffic analysis results showing the level of service and overall intersection delay (measured in seconds) for the existing, Year 2029 no-build, and Year 2029 total projected conditions are presented in Tables 4 through 10. A discussion of each intersection follows. Summary sheets for the capacity analyses are included in the Appendix.

Table 4
CAPACITY ANALYSIS RESULTS – BUTTERFIELD ROAD WITH WOODCREEK DRIVE AND LLOYD AVENUE– SIGNALIZED

	Peak Hour	Eastbound			Westbound		Northbound			Southbound		Overall
		L	T	R	L	T/R	L	T	R	L	T/R	
Existing Traffic Volumes	Weekday Morning Peak Hour	E 64.3	C 25.3	A 2.7	E 71.8	B 10.2	D 40.2	C 20.7	A 2.8	E 58.2	D 50.5	C 32.5
		C – 22.0			D – 43.8		C – 28.5			D – 53.6		
	Weekday Evening Peak Hour	E 67.5	B 14.1	A 0.0	F 100.3	A 3.4	D 46.3	C 25.6	B 18.7	E 75.1	C 26.3	B 17.5
		B – 14.8			B – 11.2		D – 35.7			D – 43.4		
Year 2029 No-Build Traffic Volumes	Weekday Morning Peak Hour	E 64.3	C 26.6	A 2.7	E 71.3	B 10.4	D 42.2	B 19.1	A 3.0	E 58.2	D 50.5	C 32.9
		C – 22.8			D – 43.6		C – 29.3			D – 53.6		
	Weekday Evening Peak Hour	E 67.5	B 14.5	A 0.0	F 99.8	A 3.6	D 46.6	C 25.5	B 19.2	E 75.1	C 26.3	B 17.6
		B – 15.1			B – 11.4		D – 36.0			D – 43.4		
Year 2029 Total Projected Traffic Volumes	Weekday Morning Peak Hour	E 64.3	C 28.3	A 2.7	E 71.3	B 10.7	E 55.4	B 13.8	A 3.4	E 65.4	D 50.5	C 34.2
		C – 24.0			D – 44.1		D – 37.6			D – 56.5		
	Weekday Evening Peak Hour	E 67.9	B 15.9	A 0.1	F 98.7	A 3.6	D 46.4	C 25.4	B 19.4	E 75.1	C 26.3	B 18.9
		B – 16.1			B – 13.4		D – 36.0			D – 43.4		

Letter denotes Level of Service L – Left Turns R – Right Turns
Delay is measured in seconds. T – Through

Table 5
CAPACITY ANALYSIS RESULTS – BUTTERFIELD ROAD WITH ESPLANADE ROAD– SIGNALIZED

	Peak Hour	Eastbound		Westbound		Northbound			Southbound		Overall
		L	R	T	R	L	T	R	L	R	
Existing Traffic Volumes	Weekday Morning Peak Hour	F 98.5	A 1.2	B 10.0	A 0.5	A 0.7			E 58.0	A 7.2	A 8.4
		A – 4.0		A – 9.3					D – 40.6		
	Weekday Evening Peak Hour	F 85.4	A 6.1	B 13.8	A 0.5	B 16.2			E 63.3	A 9.0	B 14.6
		B – 12.4		B – 12.2					D – 38.5		
Year 2029 No-Build Traffic Volumes	Weekday Morning Peak Hour	F 97.6	A 1.1	B 10.1	A 0.5	A 0.8			E 58.0	A 7.2	A 8.2
		A – 3.8		A – 9.4					D – 40.6		
	Weekday Evening Peak Hour	F 85.8	A 6.3	B 14.1	A 0.5	C 20.6			E 63.3	A 8.9	B 15.2
		B – 12.4		B – 12.5					D – 38.5		
Year 2029 Total Projected Traffic Volumes	Weekday Morning Peak Hour	F 96.9	A 1.1	B 10.1	A 0.5	A 1.7			E 58.0	A 7.2	A 8.2
		A – 3.8		A – 9.5					D – 40.6		
	Weekday Evening Peak Hour	F 84.9	A 6.4	B 14.3	A 0.5	C 24.2			E 63.3	A 8.9	B 15.6
		B – 12.4		B – 12.7					D – 38.5		

Letter denotes Level of Service L – Left Turns R – Right Turns
Delay is measured in seconds. T – Through

Table 6
CAPACITY ANALYSIS RESULTS – LACEY ROAD WITH WOODCREEK DRIVE (NORTH)– SIGNALIZED

	Peak Hour	Eastbound (Woodcreek Drive)		Northbound (Lacey Road)		Southbound (Woodcreek Drive)		Overall
		L	R	L	T	T	R	
Existing Traffic Volumes	Weekday Morning Peak Hour	E 55.7	C 30.6	A 1.8	A 2.1	A 1.7	A 0.1	A 3.6
		D 53.2		A – 2.1		A 1.0		
	Weekday Evening Peak Hour	E 61.6	B 20.0	A 3.5	A 3.7	A 2.0	A 0.0	C 27.0
		E – 59.2		A – 3.7		A – 1.1		
Year 2029 No-Build Traffic Volumes	Weekday Morning Peak Hour	E 55.7	C 30.6	A 1.8	A 2.1	A 1.7	A 0.1	A 3.6
		D 53.3		A – 2.1		A 1.0		
	Weekday Evening Peak Hour	E 61.4	B 19.8	A 3.5	A 3.8	A 2.0	A 0.0	C 27.2
		E – 59.1		A – 3.8		A – 1.1		
Year 2029 Total Projected Traffic Volumes	Weekday Morning Peak Hour	E 55.6	C 29.4	A 2.1	A 251	A 1.9	A 0.1	A 4.8
		D 53.9		A – 2.4		A 1.2		
	Weekday Evening Peak Hour	E 61.2	B 19.6	A 3.5	A 4.0	A 2.0	A 0.0	C 25.6
		E – 58.8		A – 4.0		A – 1.2		

Letter denotes Level of Service L – Left Turns R – Right Turns
Delay is measured in seconds. T – Through

Table 7
CAPACITY ANALYSIS RESULTS – LACEY ROAD WITH FINLEY ROAD– SIGNALIZED

	Peak Hour	Eastbound		Northbound		Southbound		Overall
		L	R	L	T	T	R	
Existing Traffic Volumes	Weekday Morning Peak Hour	E 56.4	B 13.7	E 55.1	A 2.4	B 13.4	A 1.6	B 19.0
		B – 17.4		C – 22.9		B – 10.8		
	Weekday Evening Peak Hour	E 60.1	B 10.4	E 59.9	A 2.7	A 7.6	A 0.7	B 10.8
		B – 17.8		B – 11.5		A – 7.3		
Year 2029 No Build Traffic Volumes	Weekday Morning Peak Hour	E 56.3	B 13.6	D 54.6	A 2.4	B 14.0	A 1.6	B 19.1
		B – 17.1		C – 22.8		B – 11.3		
	Weekday Evening Peak Hour	E 59.6	B 10.2	E 59.8	A 2.9	A 7.9	A 0.6	B 10.9
		B – 17.5		B – 11.5		A – 7.6		
Year 2029 Total Projected Traffic Volumes	Weekday Morning Peak Hour	E 57.3	B 13.1	D 54.4	A 2.5	B 14.2	A 1.6	B 19.2
		B – 17.9		C – 22.9		B – 11.5		
	Weekday Evening Peak Hour	E 59.8	B 10.2	E 59.9	A 2.9	A 8.2	A 0.7	B 11.5
		B – 17.5		B – 12.6		A – 7.8		

Letter denotes Level of Service L – Left Turns R – Right Turns
Delay is measured in seconds. T – Through

Table 8
CAPACITY ANALYSIS RESULTS – EXISTING CONDITIONS – UNSIGNALIZED

Intersection	Weekday Morning Peak Hour		Weekday Evening Peak Hour	
	LOS	Delay	LOS	Delay
Lacey Road with Esplanade Road[1]				
• Overall	B	10.1	A	9.9
• Eastbound Approach	B	10.5	A	9.1
• Westbound Approach	A	8.0	B	10.1
• Northbound Approach	A	8.6	B	10.2
Lacey Road with Access Road[2]				
• Eastbound Left Turn	B	11.4	B	10.1
• Eastbound Right Turn	B	10.2	A	8.7
• Northbound Left Turn	A	8.0	A	7.4
Lacey Road with Woodcreek Drive (South)[2]				
• Eastbound Left Turn	C	16.8	B	11.5
• Eastbound Right Turn	A	9.3	A	9.4
• Northbound Left Turn	A	8.6	A	7.6

LOS = Level of Service
Delay is Measured in Seconds
1 – All-way stop control
2 – Two-way stop control

Table 9
CAPACITY ANALYSIS RESULTS – YEAR 2029 NO-BUILD CONDITIONS
UNSIGNALIZED

Intersection	Weekday Morning Peak Hour		Weekday Evening Peak Hour	
	LOS	Delay	LOS	Delay
Lacey Road with Esplanade Road[1]				
• Overall	B	10.2	B	10.1
• Eastbound Approach	B	10.7	A	9.1
• Westbound Approach	A	8.1	B	10.3
• Northbound Approach	A	8.7	B	10.3
Lacey Road with Access Road[2]				
• Eastbound Left Turn	B	11.5	B	10.2
• Eastbound Right Turn	B	10.3	A	8.8
• Northbound Left Turn	A	8.1	A	7.4
Lacey Road with Woodcreek Drive (South)[2]				
• Eastbound Left Turn	C	17.4	B	11.7
• Eastbound Right Turn	A	9.4	A	9.5
• Northbound Left Turn	A	8.7	A	7.6

LOS = Level of Service
Delay is Measured in Seconds
1 – All-way stop control
2 – Two-way stop control

Table 10
CAPACITY ANALYSIS RESULTS – YEAR 2029 TOTAL PROJECTED CONDITIONS
UNSIGNALIZED

Intersection	Weekday Morning Peak Hour		Weekday Evening Peak Hour	
	LOS	Delay	LOS	Delay
Lacey Road with Esplanade Road[1]				
• Overall	B	10.4	B	10.5
• Eastbound Approach	B	11.0	A	9.5
• Westbound Approach	A	8.2	B	10.9
• Northbound Approach	A	8.8	B	10.7
Lacey Road with Access Road[2]				
• Eastbound Left Turn	B	11.7	B	10.4
• Eastbound Right Turn	B	10.4	A	8.9
• Northbound Left Turn	A	8.1	A	7.5
Lacey Road with the Site Access Drive				
• Eastbound Approach	A	9.1	A	8.8
Lacey Road with Woodcreek Drive (South)[2]				
• Eastbound Left Turn	C	20.8	B	12.6
• Eastbound Right Turn	A	9.5	A	9.6
• Northbound Left Turn	A	8.9	A	7.7
Woodcreek Drive with the West Site Access Drive				
• Eastbound Left Turn	A	8.0	A	7.3
• Southbound Approach	B	11.3	A	9.7
Woodcreek Drive with the East Site Access Drive				
• Eastbound Left Turn	A	8.0	A	7.3
• Southbound Approach	B	11.6	B	10.0

LOS = Level of Service
Delay is Measured in Seconds
1 – All-way stop control
2 – Two-way stop control

Discussion and Recommendations

The following summarizes how the intersections are projected to operate and identifies any roadway and traffic control improvements necessary to accommodate the development-generated traffic.

Butterfield Road with Woodcreek Drive and Llyod Avenue

The results of the capacity analyses indicate that the intersection currently operates at an overall Level of Service (LOS) C during the weekday morning peak hour and LOS B during the weekday evening peak hour. It should be noted that multiple left-turn movements operate at LOS E or F during the peak hours. This is the result of the long cycle length (125 to 135 seconds during the peak hours) and the protected only operation of these movements. However, all left-turn movements operate with a volume to capacity (v/c) ratio of less than one and 95th percentile queues that can be accommodated within the existing turn lanes. Under Year 2029 no-build conditions, this intersection is projected to continue to operate at an overall LOS C during the weekday morning peak hour and LOS B during the weekday evening peak hour.

Under Year 2029 total projected conditions, this intersection is projected to continue to operate at an overall LOS C during the weekday morning peak hour and LOS B during the weekday evening peak hour with increases in delay of approximately one second over no-build conditions. Multiple left-turn movements are projected to continue to operate at LOS E or F. However, as is the case under existing conditions, these movements are projected to operate with a v/c ratio of less than one and 95th percentile queues that can be accommodate. Overall, the proposed development is projected to increase the volume of traffic traversing this intersection by approximately two percent or less. As such, the intersection has sufficient reserve capacity to accommodate the traffic to be generated by the development and no roadway improvements or traffic control modifications are required.

Butterfield Road with Esplanade Road

The results of the capacity analyses indicate that the intersection currently operates at an overall LOS A during the weekday morning peak hour and LOS B during the weekday evening peak hour. It should be noted that multiple left-turn movements operate at LOS E or F during the peak hours. As with the intersection of Butterfield Road with Woodcreek Drive and Llyod Avenue, this is the result of the long cycle length (125 to 135 seconds during the peak hours) and the protected only operation of these movements. However, all left-turn movements operate with a v/c ratio of less than one and 95th percentile queues that can be accommodated within the existing turn lanes. Under Year 2029 no-build conditions, this intersection is projected to continue to operate at an overall LOS A during the weekday morning peak hour and LOS B during the weekday evening peak hour.

Under Year 2029 total projected conditions, this intersection is projected to continue to operate at an overall LOS A during the weekday morning peak hour and LOS B during the weekday evening peak hour with increases in delay of less than one second over no-build conditions. Multiple left-turn movements are projected to continue to operate at LOS E or F. However, as is the case under existing conditions, these movements are projected to operate with a v/c ratio of less than one and 95th percentile queues that can be accommodated. Further, the proposed development is not projected to increase the volume of left-turn movements at this intersection. Overall, the proposed

development is projected to increase the volume of traffic traversing this intersection by approximately two percent or less. As such, the intersection has sufficient reserve capacity to accommodate the traffic to be generated by the development and no roadway improvements or traffic control modifications are required.

Lacey Road with Woodcreek Drive (North)

The results of the capacity analyses indicate that the intersection currently operates at an overall LOS A during the weekday morning peak hour and LOS C during the weekday evening peak hour. It should be noted that the eastbound left-turn movement operates at LOS E during the peak hours. As with the intersection of Butterfield Road with Woodcreek Drive and Llyod Avenue, this is the result of the long cycle length (125 to 135 seconds during the peak hours) and the protected only operation of this movement. However, all left-turn movements operate with a volume to capacity (v/c) ratio of less than one and 95th percentile queues that can be accommodated within the existing turn lanes. Under Year 2029 no-build conditions, this intersection is projected to continue to operate at an overall LOS A during the weekday morning peak hour and LOS C during the weekday evening peak hour.

Under Year 2029 total projected conditions, this intersection is projected to continue to operate at an overall LOS A during the weekday morning peak hour and LOS C during the weekday evening peak hour with increases in delay of approximately one second or less over no-build conditions. The eastbound left-turn movements is projected to continue to operate at LOS E during both peak hours. However, as is the case under existing conditions, these movements are projected to operate with a v/c ratio of less than one and 95th percentile queues that can be accommodated. As such, the intersection has sufficient reserve capacity to accommodate the traffic to be generated by the development and no roadway improvements or traffic control modifications are required.

Lacey Road with Finley Road

The results of the capacity analyses indicate that the intersection currently operates at an overall LOS B during the weekday morning and weekday evening peak hours. It should be noted that multiple left-turn movements operate at LOS D or E during the peak hours. As with the other area signalized intersections, this is the result of the long cycle length (125 to 135 seconds during the peak hours) and the protected only operation of these movements. However, all left-turn movements operate with a v/c ratio of less than one and 95th percentile queues that can be accommodated within the existing turn lanes. Under Year 2029 no-build conditions, this intersection is projected to continue to operate at an overall LOS B during the weekday morning and weekday evening peak hours.

Under Year 2029 total projected conditions, this intersection is projected to continue to operate at an overall LOS B during the weekday morning and weekday evening peak hours with increases in delay of less than one second over no-build conditions. Multiple left-turn movements are projected to continue to operate at LOS D or E. However, as is the case under existing conditions, these movements are projected to operate with a v/c ratio of less than one and 95th percentile queues that can be accommodated. Overall, the proposed development is projected to increase the volume of traffic traversing this intersection by less than two percent. As such, the intersection has sufficient reserve capacity to accommodate the traffic to be generated by the development and no roadway improvements or traffic control modifications are required.

Lacey Road with Esplanade Road

The results of the capacity analyses indicate that overall, this intersection currently operates at LOS B during the weekday morning peak hour and LOS A during the weekday evening peak hour. Further, all movements operate at LOS A or better. Under Year 2029 no-build conditions, this intersection is projected to operate at LOS B during both peak hours.

Under Year 2029 total projected conditions, this intersection is projected to operate at LOS B during both peak hours. Further, all movements are projected to continue to operate at LOS B or better. As such, the intersection has sufficient reserve capacity to accommodate the traffic to be generated by the development and no roadway improvements or traffic control modifications are required.

Lacey Road with the Access Road

The results of the capacity analyses indicate that all critical movements at this intersection operate at LOS B or better during the weekday morning and weekday evening peak hours. Under Year 2028 no-build and total projected conditions, all critical movements at this intersection are projected to continue to operate at the same levels of service during both peak hours with increases in delay of less than one second. As such, the intersection has sufficient reserve capacity to accommodate the traffic to be generated by the development and no roadway improvements or traffic control modifications are required.

Lacey Road with the Site Access Drive

As proposed, right-in/right-out access drive will be provided on Lacey Road located approximately 300 feet north of Woodcreek Drive. The access drive will provide one inbound lane and one outbound lane with left-turn movements restricted via the median on Lacey Road. Outbound movements will be under stop sign control.

Under Year 2029 total projected conditions, outbound movements from the access drive are projected to operate at LOS A during the weekday morning and weekday evening peak hours. When the projected traffic volumes at this access drive are compared to the right-turn lane guidelines in Chapter 36 of IDOT's BDE Manual, a southbound right-turn lane is not warranted on Lacey Road serving the access drive. As such, the proposed access drive will be sufficient to accommodate the traffic projected to be generated by the proposed development and will ensure efficient and flexible access is provided.

Lacey Road with Woodcreek Drive (South)

The results of the capacity analyses indicate that all critical movements at this intersection operate at LOS B or better during the weekday morning and weekday evening peak hours. Under Year 2028 no-build conditions, all critical movements at this intersection are projected to continue to operate at the same levels of service.

Under Year 2029 total projected conditions, all critical movements at this intersection are projected to operate at LOS C or better during both peak hours. Further, 95th percentile queues for the

eastbound and northbound left-turn movements will continue to be accommodated within the existing turn lanes. When the projected traffic volumes at this intersection are compared to the right-turn lane guidelines in Chapter 36 of IDOT's BDE Manual, a southbound right-turn lane is not warranted on Lacey Road. As such, the intersection has sufficient reserve capacity to accommodate the traffic to be generated by the development and no roadway improvements or traffic control modifications are required.

Woodcreek Drive with the Site Access Drives

As proposed, two full-movement access drives will be provided on Woodcreek Drive located approximately 390 and 840 feet west of Lacey Road. The access drives will provide one inbound lane and one outbound lane with outbound movements under stop sign control.

Under Year 2029 total projected conditions, outbound movements from the access drives are projected to operate at LOS B during the weekday morning and weekday evening peak hours. Further, inbound left-turn movements are projected to operate at LOS A during both peak hours. When the projected traffic volumes at these access drives are compared to the left-turn and right-turn lane guidelines in Chapter 36 of IDOT's BDE Manual, no turn-lanes will be warranted on Woodcreek Drive serving the access drives. As such, the proposed access drives will be sufficient to accommodate the traffic projected to be generated by the proposed development and will ensure efficient and flexible access is provided.

Parking Evaluation

As proposed, the development is to contain 297 apartment units in three buildings. Parking will be accommodated via a 65-space parking garage within each building and 295 exterior parking spaces for a total of 490 parking spaces. The peak parking demand of the proposed development was estimated based on the rates published in the Institute of Transportation Engineers' (ITE) *Parking Generation Manual*, 5th Edition and based on surveys conducted by KLOA, Inc. at similar area developments. Further, the parking supply was compared to the Village of Downers Grove Municipal Code.

ITE Parking Generation Manual

In reviewing the survey data published in the Institute of Transportation Engineers' (ITE) 5th Edition of the *Parking Generation Manual*, the following average peak parking demands were determined:

- Multifamily Housing – Mid-Rise (Land-Use Code 221)
  - Monday-Friday: 389 spaces (ratio of 1.31 spaces per unit)
  - Saturday: 362 spaces (ratio of 1.22 spaces per unit)

As such, based on ITE *Parking Generation Manual* rates, the proposed development should provide a total of 389 parking spaces to accommodate the peak parking demand. This results in a surplus of 101 parking spaces.

KLOA, Inc. Surveys

KLOA, Inc conducted parking occupancy surveys at two similar area developments to determine their peak parking demand. The counts were conducted at Apex 41 in Lombard and at Regency Place in Oakbrook Terrace on Friday January 27, 2023 and Saturday 28, 2023. The surveys were conducted between 6:00 A.M. and 10:00 P.M. The following summarizes the results of the surveys.

- Apex 41 (760 S Highland Ave, Lombard, IL)
  - Five-Story apartment building located one mile northeast of the site.
  - 181 total units, 174 occupied at the time of the surveys.
  - Parking Supply of 286 parking spaces (242 garage, 44 exterior)
  - Peak parking occupancy on Friday was 187 spaces.
  - Peak parking occupancy on Saturday was 201 spaces.
  - The peak parking ratio was 1.16 spaces per occupied unit (Saturday).

- Regency Place (2003 S Meyers Rd, Oakbrook Terrace, IL)
  - Four-story apartment building located 2.5 miles northeast of the site.
  - 112 total units, 112 occupied at the time of the surveys.
  - Parking Supply of 248 parking spaces (182 garage, 66 exterior).
  - Peak parking occupancy on Friday was 162 spaces.
  - Peak parking occupancy on Saturday was 167 spaces.
  - The peak parking ratio was 1.49 spaces per occupied unit (Saturday).

As such, based on the parking occupancy surveys rates, the proposed development should provide parking at a rate of 1.49 spaces per unit for a total of 443 parking spaces to accommodate the peak parking demand. This results in a surplus of 47 parking spaces.

Village of Downers Grove Requirements

The Downers Grove Municipal Code requires a parking ratio of two parking spaces per unit. The proposed development should provide a total of 594 parking spaces, which results in a deficit of 104 spaces.

Evaluation

The proposed parking supply is greater than the projected peak parking demand of the development based on ITE and the parking occupancy surveys. As such, the proposed 490-space parking capacity will adequately accommodate the parking demand of the proposed development.

6. Conclusion

Based on the preceding analyses and recommendations, the following conclusions have been made:

- As proposed, the site will be developed with three, four-story apartment buildings with 99 units each for a total of 297 units.
- The proposed development is projected to generate primarily outbound traffic during the weekday morning and inbound traffic during the weekday evening. This direction of traffic is the opposite of other area developments area which are primarily office and industrial.
- The area roadway system generally has sufficient reserve capacity to accommodate the traffic to be generated by the proposed development and no additional roadway improvements or traffic control modifications are required.
- Access to the development will be provided via a right-in/right-out access drive on Lacey Road and via two full-movement access drives on Woodcreek Drive.
- The proposed access will adequately accommodate site-generated traffic and ensure that efficient and flexible access to and from the site is provided.
- Parking will be accommodated via a 65-space parking garage within each building and 295 exterior parking spaces for a total of 490 parking spaces. The proposed parking supply will be adequate in accommodating the peak parking demand of the proposed development.