ALLIANT
ENGINEERING

MEMORANDUM

DATE: July 20, 2018

TO: Brian Hansen, City of Bloomington

FROM: Jordan Schwarze, PE, Alliant Engineering
Hannah Johnson, Alliant Engineering

SUBJECT: **Penn-American Phase III Parking Study**

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1. Introduction

Alliant Engineering has conducted a parking study in response to the Penn-American Phase III development proposed by Stuart Development Corporation (StuartCo) and United Properties located in the southwest quadrant of the American Boulevard/Knox Avenue intersection in Bloomington, MN.

1.1. Study Purpose

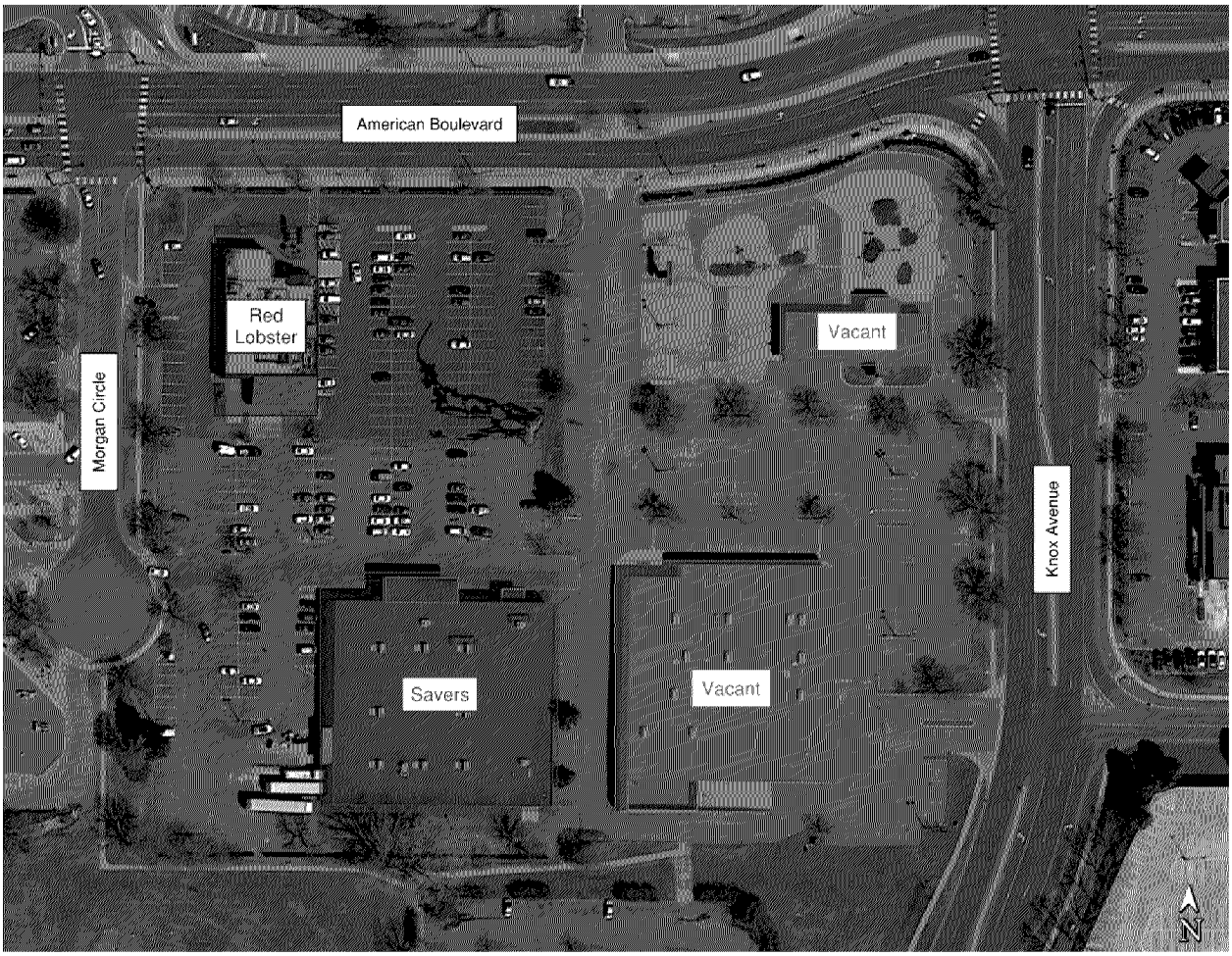
The purpose of this study is to evaluate the expected parking demand of the proposed development. To achieve this, the following goals have been established:

- Determine the City of Bloomington Zoning Code parking requirements
- Estimate parking demand for the proposed development using local parking count data of existing facilities and the ITE Parking Generation Manual
- Estimate the total site parking demand with an alternative development analysis scenario in which a proposed hotel would be replaced by a sit-down restaurant
- Compare the estimated total site parking demand against the proposed parking supply to determine a surplus or deficit
- Develop charts and exhibits highlighting the parking demand versus supply analysis
- Document any impacts to surrounding properties and roadways if estimated parking demand exceeds the proposed supply
- Identify any potential parking demand mitigation or alternative parking supply options that could be considered in the event of parking supply shortfalls

1.2. Existing Conditions

As illustrated in **Figure 1**, the proposed development site consists of four buildings with surface parking. The eastern portion of the surface parking lot primarily serves two buildings that were vacant at the time of data collection for this study. The western portion of the surface parking lot primarily serves only a Red Lobster restaurant at the time of this writing. However, a Savers retail store that recently closed permanently was still open at the time of data collection.

Figure 1. Existing Site Layout



1.3. Proposed Development

The proposed development site is bounded by American Boulevard on the north, Knox Avenue on the east, Morgan Circle on the west, and a potential extension of 81st Street on the south. The mixed-use development proposal consists of 248 multi-family residential units (340 bedrooms) and a 124-room hotel, as well as maintaining the existing 277-seat Red Lobster restaurant. Also under consideration is an alternative in which the proposed hotel would be replaced by a 200-seat sit-down restaurant. The two vacant buildings and former Savers location onsite are expected to be replaced. The proposed development site plans are illustrated in **Figure 2** and **Figure 3**.

Figure 2. Proposed Site Plan

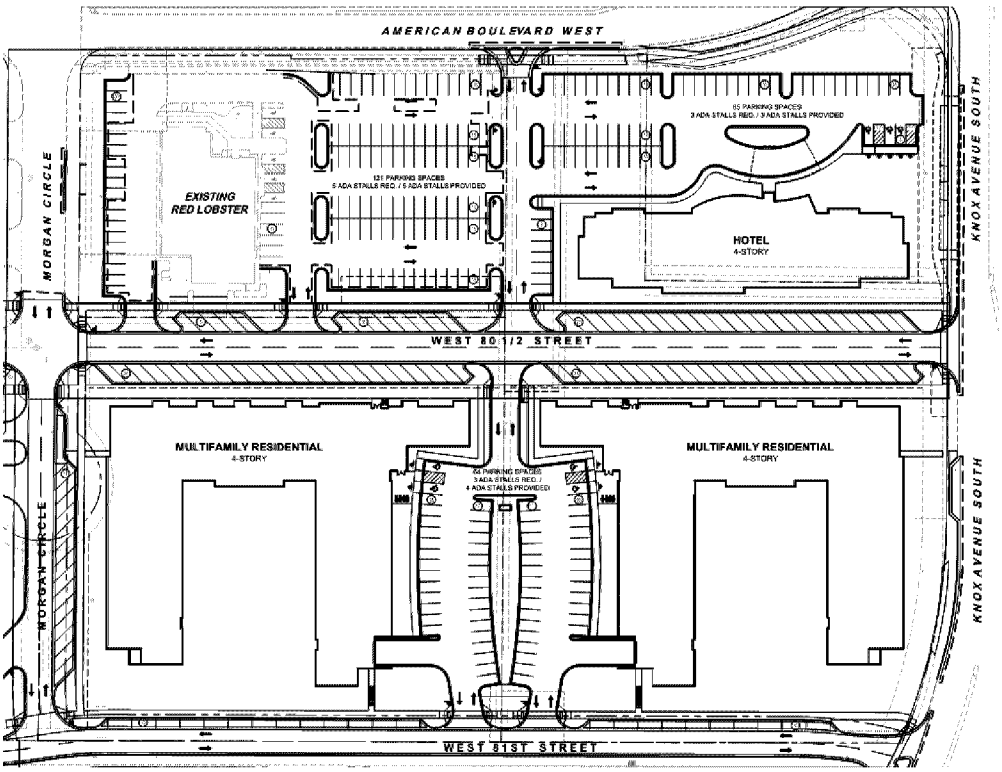
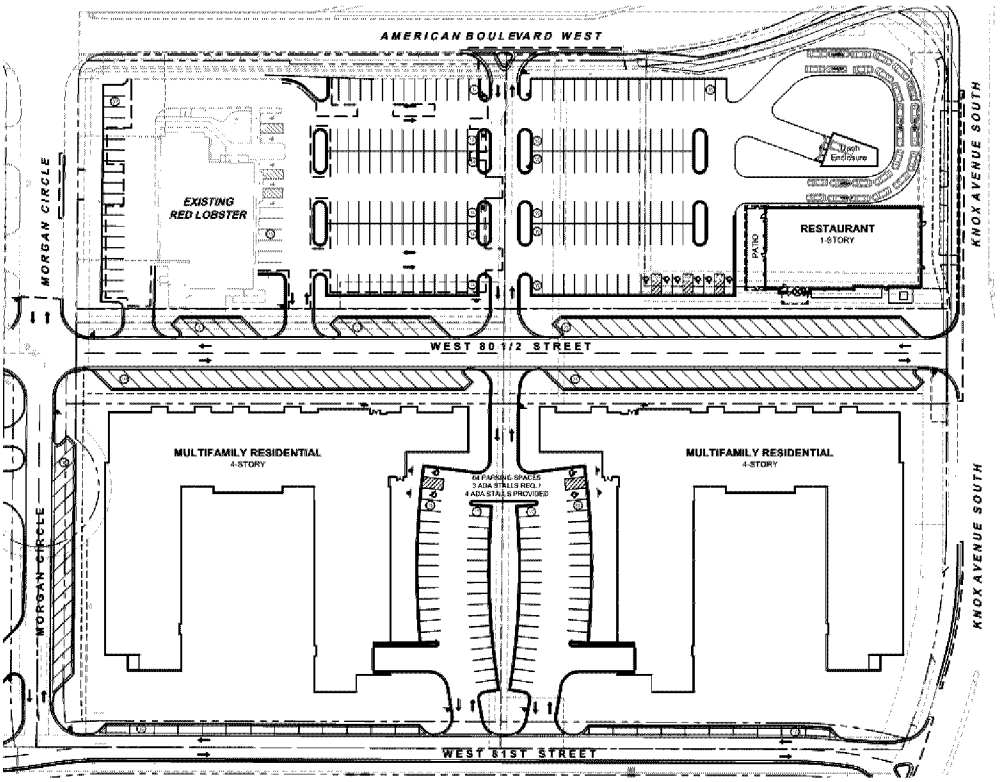


Figure 3. Alternative Site Plan



Proposed development parking consists of 565 total stalls while the alternative development parking consists of 589 total stalls. **Table 1** summarizes the proposed land use and parking characteristics. The proposed parking supply represents a significant reduction from the City Code requirements. Therefore, the objective of this parking study is to estimate the future total parking demand and document whether the proposed parking supply is adequate.

Table 1. Proposed Land Use and Parking Characteristics

	Land Use	Allotted Parking
Proposed Development	Apartment: 248 Units (156 one-bedroom and 92 two-bedroom)	343 Stalls (194 Underground)
	Hotel: 124 Rooms	88 Stalls
	Red Lobster (Existing): 277 Seats	134 Stalls
		565 Total Parking Stalls
Alternative Development	Apartment: 248 Units (156 one-bedroom and 92 two-bedroom)	345 Stalls (194 Underground)
	Restaurant: 200 Seats	117 Stalls
	Red Lobster (Existing): 277 Seats	127 Stalls
		589 Total Parking Stalls

2. Data Collection

To aid in estimating the potential parking demand of the proposed development, parking data was collected at three local sites:

- The existing onsite Red Lobster (1951 American Boulevard W, Bloomington, MN)
- Genesee Apartments & Townhomes (8055 Penn Avenue S, Bloomington, MN)
  - Comparable multi-family residential complex (234 units/330 bedrooms) located approximately two blocks to the west
- Holiday Inn Express (7770 Johnson Avenue S, Bloomington, MN)
  - Comparable hotel (159 rooms) located approximately 1.5 miles to the west

It should be noted that the Savers onsite was still in business during the available data collection period. However, only those vehicles believed to belong to Red Lobster employees and customers were counted.

To document typical weekday and weekend parking demand, parking data for Red Lobster and Genesee Apartments & Townhomes was collected on Saturday, June 23, 2018 and Tuesday, June 26, 2018. Total parking demand data was collected at regular intervals during the morning (6:00 a.m. to 9:00 a.m.), midday (11:00 a.m. to 1:00 p.m.), and evening (5:00 p.m. to 11:00 p.m.) time periods. It should be noted that parking data at the Holiday Inn Express was collected as part of a previous study on Saturday, October 7, 2017 and Tuesday, October 10, 2017.

Figure 4, **Figure 5**, and **Figure 6** summarize the collected parking data. The two days of data provide a baseline for typical parking demand. The collected data was used to understand potential parking utilization across the various proposed land uses and to identify the peak parking demand period on both weekdays and weekends.

Figure 4. Observed Red Lobster Parking Demand

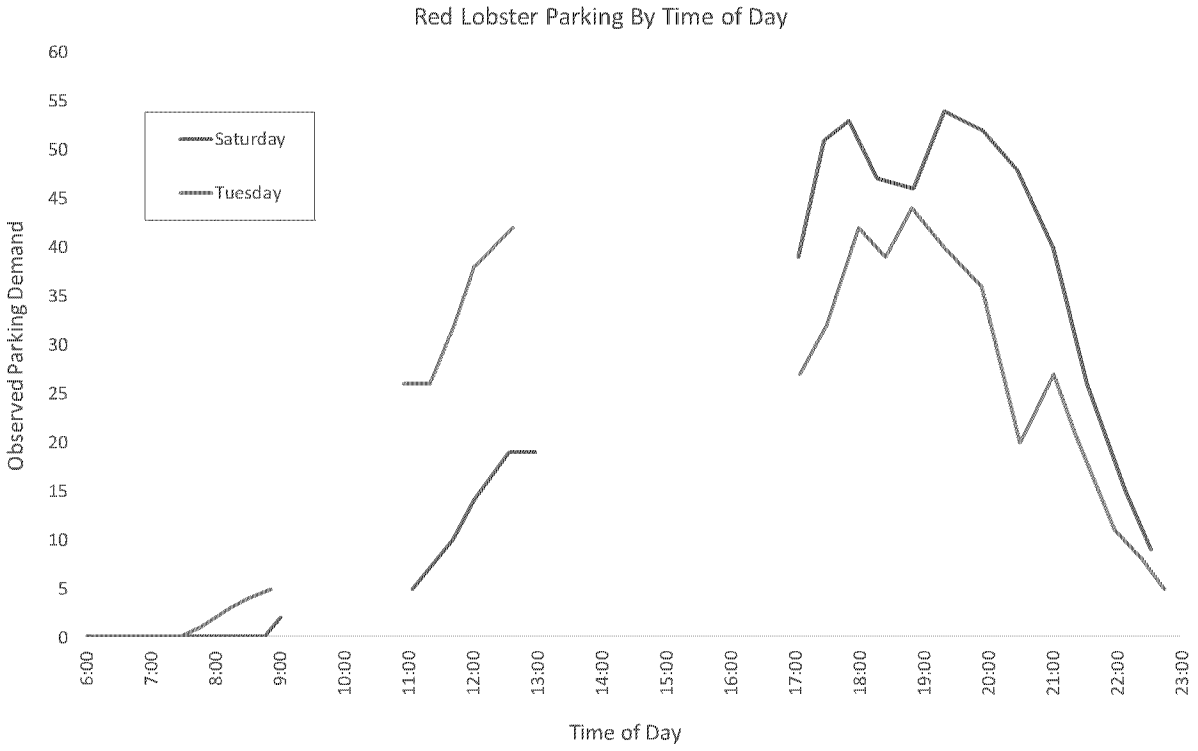


Figure 5. Observed Genesee Apartments & Townhomes Parking Demand

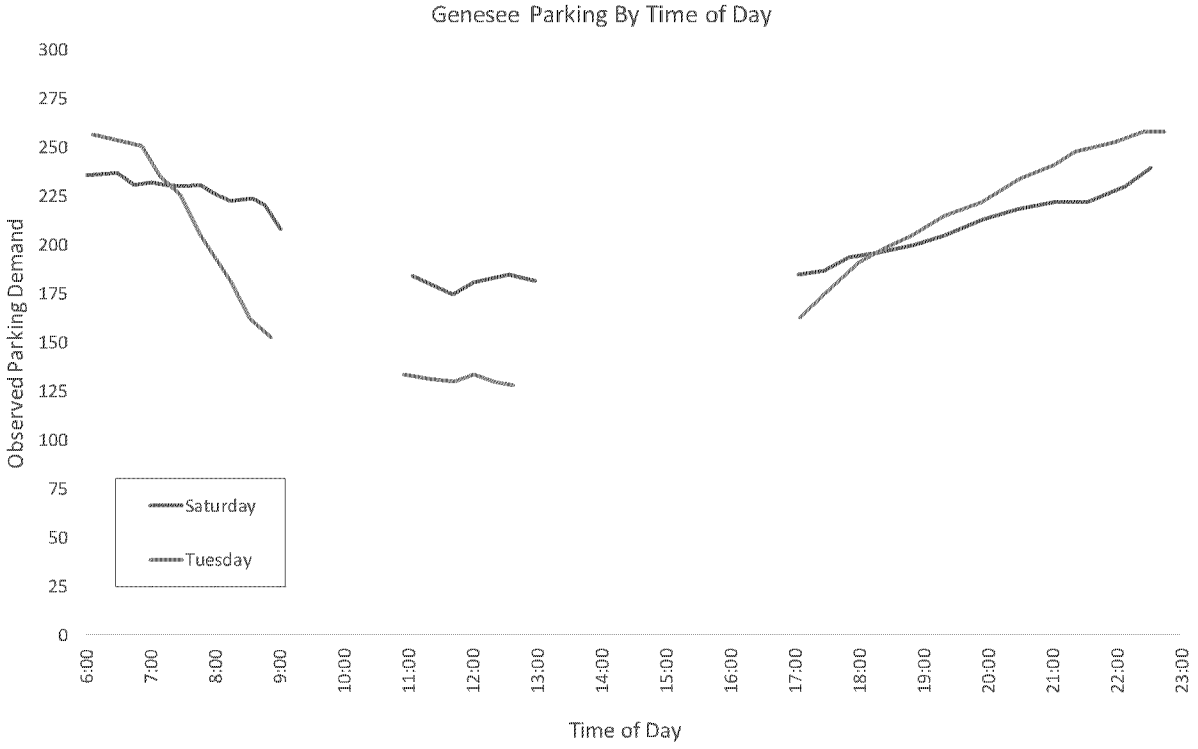
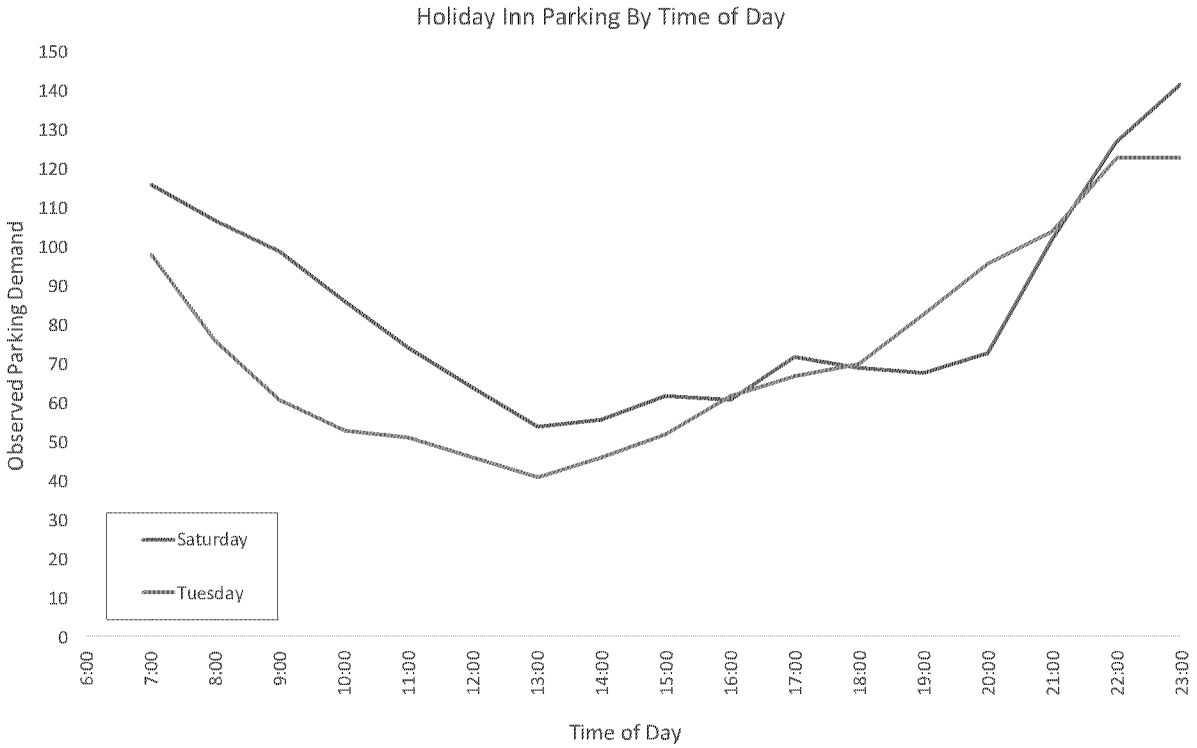


Figure 6. Observed Holiday Inn Express Parking Demand



At Red Lobster on Saturday, the maximum observed parking demand was 54 vehicles, equivalent to a rate of 0.20 vehicles per restaurant seat. On Tuesday, the maximum observed parking demand was 44 vehicles, equivalent to a rate of 0.16 vehicles per restaurant seat. Both peaks occurred between 5:30 p.m. and 8:00 p.m. It should be noted that Red Lobster management was contacted in an attempt to determine restaurant occupancy during the observed peaks. The data available was not detailed enough to determine an accurate parking generation rate per guest. However, management did indicate that restaurant occupancy was typical for the observed Saturday and Tuesday evenings.

At Genesee Apartments & Townhomes on Saturday, the maximum observed parking demand was 240 vehicles, equivalent to a rate of 1.04 vehicles per occupied dwelling unit (currently the building is at 99 percent occupancy). On Tuesday, the maximum observed parking demand was 258 vehicles, equivalent to a rate of 1.12 vehicles per occupied dwelling unit. Both peaks occurred between 10:00 p.m. and 7:00 a.m.

At Holiday Inn Express on Saturday, the maximum observed parking demand was 142 vehicles, equivalent to a rate of 1.00 vehicles per occupied room (90 percent room occupancy). On Tuesday, the maximum observed parking demand was 123 vehicles, equivalent to a rate of 0.90 vehicles per occupied room (90 percent room occupancy). Both peaks occurred between 10:00 p.m. and 7:00 a.m.

3. Parking Demand Analysis

Parking demand for the proposed/alternative developments was estimated based on three methodologies:

- City of Bloomington Parking Requirements
- The ITE Parking Generation Manual
- Local Parking Model developed based on collected data.

3.1. Method 1 – City of Bloomington Parking Requirements

The Bloomington Zoning Code regulates the minimum off-street parking supply for various land uses. Relevant land uses in this case include Restaurant, Hotel, and Multi-Family Housing. City Code parking requirements were obtained on the City of Bloomington website, while the proposed land use types and sizes were provided by the developer. Due to the characteristics of the study area, the proposed development may be eligible for a five percent reduction in the off-street parking requirement. Code required parking for the proposed development is shown in **Table 2,** while Code required parking for the alternative development is shown in **Table 3**.

Table 2. Bloomington City Code Parking Requirements, Proposed Development

Land Use		Units	Rate	Size	Required Parking Stalls
Multiple-Family Residence	One bedroom	Dwelling Unit	1.8	156	281
	Two bedroom	Dwelling Unit	2.2	92	203
Hotel	Rooms	Room	1.1	124	137
Restaurant	Indoor or rooftop seating	Seat	0.4	277	111
				Total Parking Requirement	732
				Total Parking Requirement (5% Reduction Applied)	696

Table 3. Bloomington City Code Parking Requirements, Alternative Development

Land Use		Units	Rate	Size	Required Parking Stalls
Multiple-Family Residence	One bedroom	Dwelling Unit	1.8	156	281
	Two bedroom	Dwelling Unit	2.2	92	203
Restaurant	Indoor or rooftop seating	Seat	0.4	477	191
				Total Parking Requirement	675
				Total Parking Requirement (5% Reduction Applied)	642

For the proposed development, a total of 696 parking stalls are required by City Code (after five percent reduction). This requirement is approximately 23 percent higher than the proposed parking supply of 565 stalls. For the alternative development, a total of 642 parking stalls are required by City Code (after five percent reduction). This requirement is approximately nine percent higher than the proposed alternative parking supply of 589 stalls. This emphasizes the need for empirical parking data collection and analysis in support of the proposed parking supply.

3.2. Method 2 – ITE Parking Generation Manual

The ITE Parking Generation Manual was initially used to estimate actual parking demand for the proposed and alternative developments. The ITE Parking Generation Manual provides peak parking generation rates based on studies of various land uses. **Table 4** documents the ITE estimated Saturday and weekday peak parking demand for the proposed development, while **Table 5** documents the estimated peak parking demand for the alternative development.

Table 4. ITE Estimated Total Parking Demand, Proposed Development

Land Use *(ITE Code)*	Units	Time	Rate	Size	Required Parking Stalls
Low/Mid-Rise Apartment, Urban *(221)*	Dwelling Unit	Saturday Peak Period	1.03	248	256
		Weekday Peak Period	1.20		298
Hotel, Suburban *(310)*	Room	Saturday Peak Period	1.20	124	149
		Weekday Peak Period	0.89		111
Hight-Turnover Restaurant With Bar or Lounge, Suburban *(932)*	Seat	Saturday Peak Period	0.47	277	131
		Weekday Peak Period	0.48		133
Total Parking Demand (Saturday)					536
Total Parking Demand (Weekday)					542

Table 5. ITE Estimated Total Parking Demand, Alternative Development

Land Use *(ITE Code)*	Units	Time	Rate	Size	Required Parking Stalls
Low/Mid-Rise Apartment, Urban *(221)*	Dwelling Unit	Saturday Peak Period	1.03	248	256
		Weekday Peak Period	1.20		298
Hight-Turnover Restaurant With Bar or Lounge, Suburban *(932)*	Seat	Saturday Peak Period	0.47	477	225
		Weekday Peak Period	0.48		229
Total Parking Demand (Saturday)					481
Total Parking Demand (Weekday)					527

The rate for urban apartments, rather than suburban, was used due to proximity to local businesses, existing bus routes, and the future Orange Line Bus Rapid Transit (BRT) station at the American Boulevard/Knox Avenue intersection scheduled for completion in the 2020-2021 timeframe. Additionally, during data collection it was observed that Genesee Apartments & Townhomes demonstrated parking characteristics closer to that of an urban apartment complex. It should be noted that only suburban restaurant and hotel parking generation rates were available.

The ITE Manual estimated maximum total demand of 542 vehicles for the proposed development is slightly below the proposed parking supply of 565 stalls, while estimated maximum total parking demand of 527 vehicles for the alternative development is also below the proposed alternative parking supply of 589 stalls. Under both development scenarios, ITE parking generation rates indicate weekdays will produce a slightly higher total parking demand than the weekends.

While the total parking demand is a summation of individual land use peak demands in **Table 4** and **Table 5**, it should be noted that the peak parking demand by time of day for the restaurant land use would not be expected to coincide with that of the apartment or hotel land uses. The ITE estimate of total parking demand is likely conservative for this reason.

3.3. Method 3 – Local Parking Model

To create a more appropriate estimate of actual parking demand, locally collected parking data was next used to create a parking demand model.

3.3.1. Total Parking Demand

Utilizing locally observed peak parking rates, an analysis of total parking demand was once again completed. **Table 6** documents the projected Saturday and weekday peak parking demand for the proposed development, while **Table 7** documents the projected Saturday and weekday peak parking demand for the alternative development. It should be noted that a 50 percent increase in the observed Red Lobster parking rates was included as a contingency to account for the possibility that additional restaurant guests could have been accommodated during the observed parking demand peaks.

Table 6. Projected Total Parking Demand, Proposed Development

Land Use	Units	Time	Rate	Size	Required Parking Stalls
Apartments	Dwelling Unit	Saturday Peak Period	1.04	248	258
		Weekday Peak Period	1.12		278
Hotel	Room	Saturday Peak Period	1.00	124	124
		Weekday Peak Period	0.90		112
Restaurant[1]	Seat	Saturday Peak Period	0.29	277	81
		Weekday Peak Period	0.24		67
Total Parking Demand (Saturday)					463
Total Parking Demand (Weekday)					457

1. Restaurant parking rates were increased by 50 percent as a contingency to account for the possibility that additional restaurant guests could have been accommodated during the observed parking demand peaks.

Table 7. Projected Total Parking Demand, Alternative Development

Land Use	Units	Time	Rate	Size	Required Parking Stalls
Apartments	Dwelling Unit	Saturday Peak Period	1.04	248	258
		Weekday Peak Period	1.12		278
Restaurant[1]	Seat	Saturday Peak Period	0.29	477	139
		Weekday Peak Period	0.24		115
Total Parking Demand (Saturday)					397
Total Parking Demand (Weekday)					393

1. Restaurant parking rates were increased by 50 percent as a contingency to account for the possibility that additional restaurant guests could have been accommodated during the observed parking demand peaks.

The Local Parking Model estimated maximum total demand of 463 vehicles for the proposed development is significantly below the proposed parking supply of 565 stalls, while estimated maximum total parking demand of 397 vehicles for the alternative development is also significantly below the proposed alternative parking supply of 589 stalls. Under both development scenarios, the Local Parking Model indicates that weekdays and weekends would be expected to produce similar total parking demand.

While the total parking demand is a summation of individual land use peak demands in **Table 6** and **Table 7**, it should be noted that the peak parking demand by time of day for the restaurant land use would not be expected to coincide with that of the apartment or hotel land uses. The Local Parking Model estimate of total parking demand is likely conservative for this reason.

As indicated in **Table 6**, the proposed hotel would be expected to exceed its general allotment of 88 parking stalls under full occupancy. However, the general allotment of 134 parking stalls to Red Lobster is expected to consistently provide reserve parking capacity for the proposed hotel.

3.3.2. Hourly Parking Demand

To fully understand the parking characteristics of the proposed and alternative developments, it is useful to understand how parking demand changes throughout the day. Utilizing the locally observed parking demand data, an hourly parking demand model can be created. As documented previously with the locally observed parking demand data, each potential land use has a specific period of peak parking demand:

- High-Turnover, Sit-Down Restaurant: 5:30 p.m. to 8:00 p.m.
- Apartments: 10:00 p.m. to 7:00 a.m.
- Hotel: 10:00 p.m. to 7:00 a.m.

An hourly model was created for each development scenario from 5:00-11:00 p.m. to generate parking demand projections covering the individual peak of each potential land use. The proposed development projected hourly parking demand for a Saturday is shown in **Table 8**, while the projected hourly parking demand for a weekday is shown in **Table 9**. The hourly parking demand profile with respect to the proposed development parking supply is then illustrated in **Figure 7**.

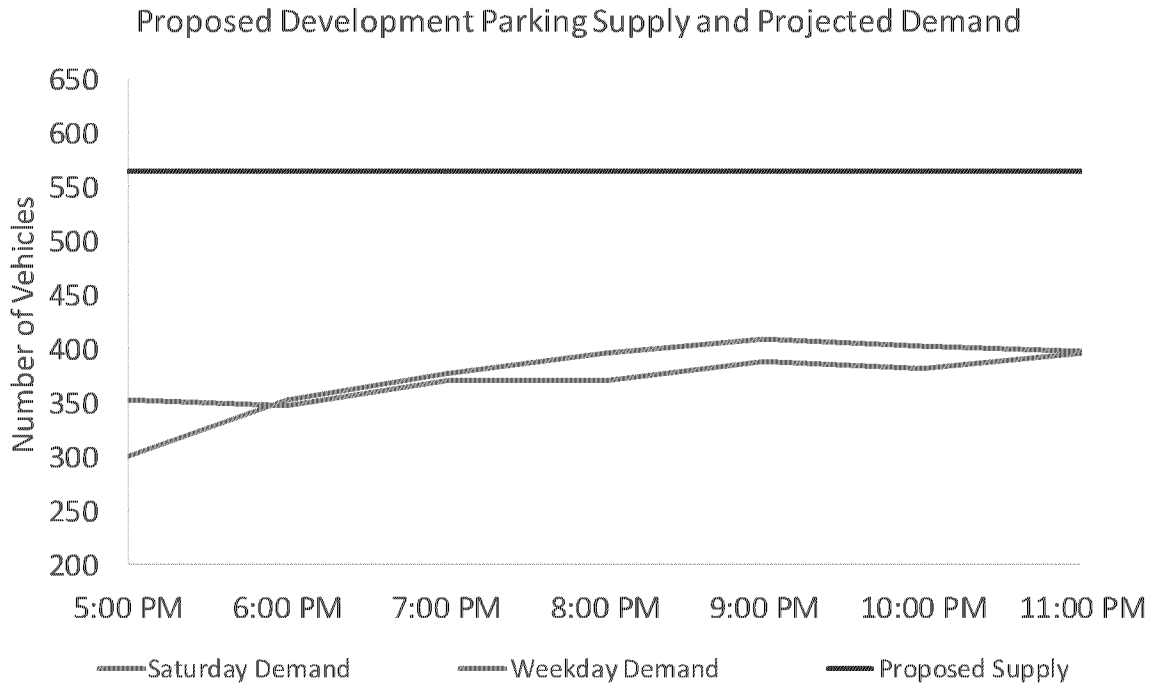
Table 8. Projected Hourly Parking Demand, Proposed Development (Saturday)

Time	Multi-Family Housing		Hotel		Restaurant		Total Projected Hourly Parking Demand
	Percent of Peak	Projected Parking Demand	Percent of Peak	Projected Parking Demand	Percent of Peak	Projected Parking Demand	
5:00 PM	81%	209	51%	63	98%	80	352
6:00 PM	83%	215	49%	61	87%	71	347
7:00 PM	89%	229	48%	60	100%	81	370
8:00 PM	91%	235	51%	64	89%	72	371
9:00 PM	93%	239	72%	90	74%	60	389
10:00 PM	96%	248	89%	111	28%	23	382
11:00 PM	100%	258	100%	124	17%	14	396

Table 9. Projected Hourly Parking Demand, Proposed Development (Weekday)

Time	Multi-Family Housing		Hotel		Restaurant		Total Projected Hourly Parking Demand
	Percent of Peak	Projected Parking Demand	Percent of Peak	Projected Parking Demand	Percent of Peak	Projected Parking Demand	
5:00 PM	68%	190	54%	62	73%	49	301
6:00 PM	79%	221	57%	64	100%	67	352
7:00 PM	86%	240	67%	76	91%	61	377
8:00 PM	91%	253	78%	88	82%	55	396
9:00 PM	98%	273	85%	95	61%	42	410
10:00 PM	100%	278	100%	112	18%	13	403
11:00 PM	100%	278	100%	112	11%	8	398

Figure 7. Projected Hourly Parking Profile, Proposed Development



The projected peak parking demand for the proposed development on a Saturday is 396 vehicles, which is expected to occur near 11:00 p.m. The projected peak parking demand for the proposed development on a weekday is 410 vehicles, which is expected to occur near 9:00 p.m. Both projections are well below the proposed parking supply of 565 stalls, resulting in a surplus of more than 150 parking stalls (37 percent surplus).

The alternative development projected hourly parking demand for a Saturday is shown in **Table 10**, while the projected hourly parking demand for a weekday is shown in **Table 11**. The hourly parking demand profile with respect to the alternative development parking supply is then illustrated in **Figure 8**.

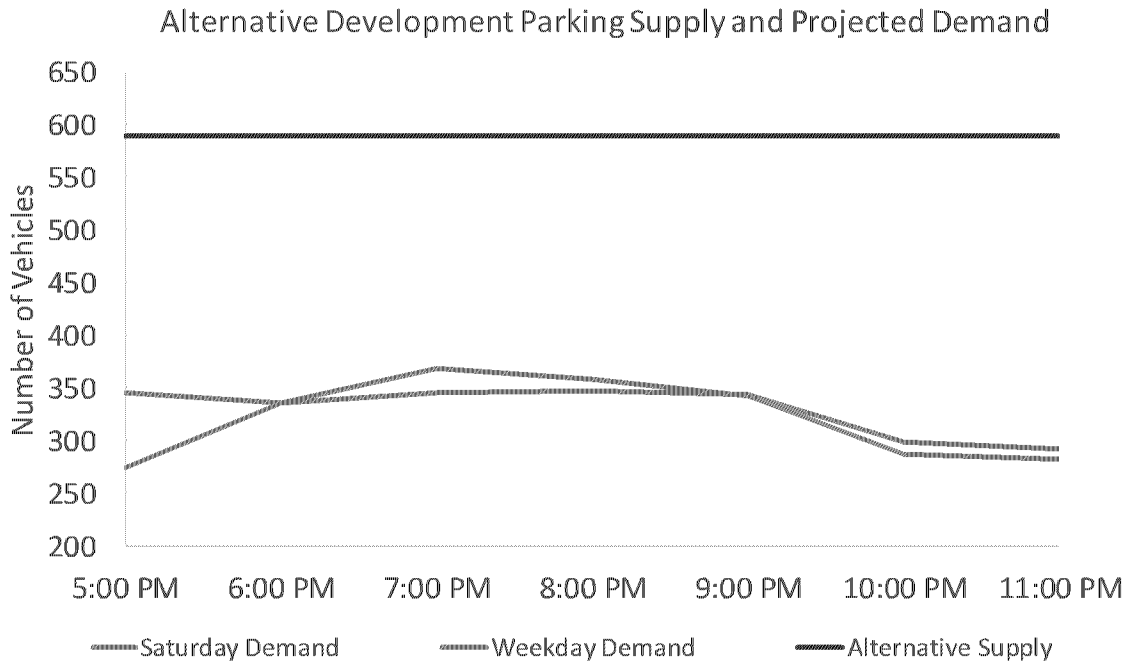
Table 10. Projected Hourly Parking Demand, Alternative Development (Saturday)

Time	Multi-Family Housing		Restaurant		Total Projected Hourly Parking Demand
	Percent of Peak	Projected Parking Demand	Percent of Peak	Projected Parking Demand	
5:00 PM	81%	209	98%	137	346
6:00 PM	83%	215	87%	121	336
7:00 PM	89%	229	100%	139	368
8:00 PM	91%	235	89%	124	359
9:00 PM	93%	239	74%	103	342
10:00 PM	96%	248	28%	39	287
11:00 PM	100%	258	17%	24	282

Table 11. Projected Hourly Parking Demand, Alternative Development (Weekday)

Time	Multi-Family Housing		Restaurant		Total Projected Hourly Parking Demand
	Percent of Peak	Projected Parking Demand	Percent of Peak	Projected Parking Demand	
5:00 PM	68%	190	73%	84	274
6:00 PM	79%	221	100%	115	336
7:00 PM	86%	240	91%	105	345
8:00 PM	91%	253	82%	95	348
9:00 PM	98%	273	61%	71	344
10:00 PM	100%	278	18%	21	299
11:00 PM	100%	278	11%	14	292

Figure 8. Projected Hourly Parking Profile, Alternative Development



The projected peak parking demand for the alternative development on a Saturday is 368 vehicles, which is expected to occur near 7:00 p.m. The projected peak parking demand for the alternative development on a weekday is 348 vehicles, which is expected to occur near 8:00 p.m. Both projections are well below the alternatively proposed parking supply of 589 stalls, resulting in a surplus of more than 220 parking stalls (60 percent surplus).

3.4. Parking Demand Summary

While the parking supplies for the proposed and alternative developments may not meet City Code, the parking supplies are adequate when analyzed with the ITE Parking Generation Manual Method and the Local Parking Model Method. It should be noted that a multi-use parking reduction for vehicles utilizing more than one land use in the development was not considered. Any potential seasonal increases in parking demand are expected to be offset by this likely multi-use reduction.

4. Conclusions and Recommendations

The following conclusions and recommendations are offered for consideration:

- Parking demand was estimated based on three methodologies:
  - City of Bloomington Parking Requirements:
    - For the proposed development, a total of 696 parking stalls are required by City Code (after applicable five percent reduction).
    - For the alternative development, a total of 642 parking stalls are required by City Code (after applicable five percent reduction).
  - The ITE Parking Generation Manual:
    - For the proposed development, a total parking demand of 542 vehicles was estimated utilizing the ITE Parking Generation Manual.
    - For the alternative development, a total parking demand of 527 vehicles was estimated utilizing the ITE Parking Generation Manual.
    - Both estimates are below the proposed and alternative parking supplies of 565 stalls and 589 stalls respectively.
    - While the total parking demand is a summation of individual land use peak demands, it should be noted that the peak parking demand by time of day for the restaurant land use would not be expected to coincide with that of the apartment or hotel land uses. The ITE estimate of total parking demand is likely conservative for this reason.
  - Local Parking Model developed from locally collected data. Two sub-methodologies were used:
    - Total Parking Demand – A maximum total demand. The Local Parking Model estimated a maximum total demand of 463 vehicles for the proposed development and a maximum total parking demand of 397 vehicles for the alternative development. Both estimates are significantly below the proposed and alternative parking supplies of 565 stalls and 589 stalls respectively. The proposed hotel would be expected to exceed its general allotment of 88 parking stalls under full occupancy. However, the general allotment of 134 parking stalls to Red Lobster is expected to consistently provide reserve parking capacity for the proposed hotel.
    - Hourly Parking Demand – Considering that each potential land use has a specific period of peak parking demand, an hourly parking demand model was created to understand how parking demand changes throughout the day. The Local Parking Model estimated an hourly peak parking demand of 410 vehicles for the proposed development (near 9:00 p.m. on a weekday). This projection is well below the proposed parking supply of 565 stalls, resulting in a surplus of more than 150 parking stalls (37 percent surplus). The Local Parking Model estimated an hourly peak parking demand of 368 vehicles for the alternative development (near 7:00 p.m. on a Saturday). This projection is well below the alternatively proposed parking supply of 589 stalls, resulting in a surplus of more than 220 parking stalls (60 percent surplus).
- While the parking supplies for the proposed and alternative developments may not meet City Code, the parking supplies are adequate when analyzed with the ITE Parking Generation Manual Method and the Local Parking Model Method.
  - No parking demand mitigation or alternative parking supplies are expected to be necessary. However, it is recommended to allow for general parking on the restaurant/hotel block, rather than designate specific parking stalls for each land use. No impacts to surrounding properties or roadways are anticipated.

ALLIANT
ENGINEERING

MEMORANDUM

DATE: October 3, 2018

TO: Brian Hansen, City of Bloomington

FROM: Jordan Schwarze, PE, Alliant Engineering
Hannah Johnson, Alliant Engineering

SUBJECT: **Penn-American Phase III Parking Study – ADDENDUM**

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1. Introduction

In July 2018, Alliant Engineering conducted a parking study in response to the Penn-American Phase III development proposed by Stuart Development Corporation (StuartCo) and United Properties located in the southwest quadrant of the American Boulevard/Knox Avenue intersection in Bloomington, MN. Since July, an alternative development has been proposed, therefore requiring an addendum to the initial parking study. This additional parking analysis conducted by Alliant Engineering addresses the parking characteristics of the new alternative, herein referred to as Alternative 2, and is meant to serve as an addendum to the original Penn-American Phase III Parking Study (dated July 20, 2018).

2. Proposed Development

The proposed development (Alternative 2) is a mixed-use development consisting of 248 multi-family residential units (340 bedrooms) and a 330-seat (266 indoor and 64 exterior patio) restaurant, as well as maintaining the existing 277-seat Red Lobster restaurant. The proposed Alternative 2 development parking consists of 600 total stalls. **Table 1** summarizes the proposed land use and parking characteristics. The proposed parking supply represents a significant reduction from the Bloomington City Code requirements. Therefore, the objective of this parking study is to estimate the future total parking demand and document whether the proposed parking supply is adequate.

Table 1. Proposed Land Use and Parking Characteristics

	Land Use	Allotted Parking
Alternative 2 Development	Apartment: 248 Units (156 one-bedroom and 92 two-bedroom)	341 Stalls (194 Underground)
	Restaurant: 330 Seats (266 interior and 64 exterior patio seats)	132 Stalls
	Red Lobster (Existing): 277 Seats	127 Stalls
		600 Total Parking Stalls

3. Parking Demand Analysis

Parking demand for the proposed Alternative 2 development was estimated based on three methodologies:

- City of Bloomington Parking Requirements
- The ITE Parking Generation Manual
- Local Parking Model developed based on collected data.

3.1. Method 1 – City of Bloomington Parking Requirements

City Code parking requirements were obtained from the City of Bloomington website, while the proposed land use types and sizes were provided by the developer. Due to the characteristics of the study area, the proposed development may be eligible for a five (5) percent reduction in the off-street parking requirement. Code required parking for the proposed Alternative 2 development is shown in **Table 2.** For the proposed development, a total of 683 parking stalls are required by City Code (after five percent reduction). This requirement is approximately 14 percent higher than the proposed parking supply of 600 stalls.

Table 2. Bloomington City Code Parking Requirements, Alternative 2 Development

Land Use		Units	Rate	Size	Required Parking Stalls
Multiple-Family Residence	One bedroom	Dwelling Unit	1.8	156	281
	Two bedroom	Dwelling Unit	2.2	92	203
Restaurant	Indoor or rooftop seating	Seat	0.4	543	218
	Seasonal/Outdoor (up to 20% of indoor/rooftop)	Seat	0.2	53	11
	Seasonal/Outdoor (exceeding 20% of indoor/rooftop)	Seat	0.4	11	5
Total Parking Requirement					718
Total Parking Requirement (5% Reduction Applied)					683

3.2. Method 2 – ITE Parking Generation Manual

The ITE Parking Generation Manual provides peak parking generation rates based on studies of various land uses. **Table 3** documents the ITE estimated Saturday and weekday peak parking demand for the proposed Alternative 2 development. The ITE Manual estimated maximum total demand of 590 vehicles is slightly below the proposed parking supply of 600 stalls.

Table 3. ITE Estimated Total Parking Demand, Proposed Development

Land Use *(ITE Code)*	Units	Time	Rate	Size	Required Parking Stalls
Low/Mid-Rise Apartment, Urban *(221)*	Dwelling Unit	Saturday Peak Period	1.03	248	256
		Weekday Peak Period	1.20		298
Hight-Turnover Restaurant With Bar or Lounge, Suburban *(932)*	Seat	Saturday Peak Period	0.47	607	286
		Weekday Peak Period	0.48		292
Total Parking Demand (Saturday)					542
Total Parking Demand (Weekday)					590

The rate for urban apartments, rather than suburban, was used due to proximity to local businesses, existing bus routes, and the future Orange Line Bus Rapid Transit (BRT) station at the American Boulevard/Knox Avenue intersection scheduled for completion in the 2020-2021 timeframe. Additionally, during data collection it was observed that Genesee Apartments & Townhomes demonstrated parking characteristics closer to that of an urban apartment complex. It should be noted that only suburban restaurant parking generation rates were available.

While the total parking demand is a summation of individual land use peak demands in **Table 3**, it should be noted that the peak parking demand by time of day for the restaurant land uses would not be expected to coincide with that of the apartment land use. The ITE estimate of total parking demand is likely conservative for this reason.

3.3. Method 3 – Local Parking Model

To create a more appropriate estimate of actual parking demand, locally collected parking data was next used to create a parking demand model.

3.3.1. Total Parking Demand

Utilizing locally observed peak parking rates, an analysis of total parking demand was once again completed. **Table 4** documents the projected Saturday and weekday peak parking demand for the proposed Alternative 2 development. It should be noted that a 50 percent increase in the observed Red Lobster parking rates was included as a contingency to account for the possibility that additional restaurant guests could have been accommodated during the observed parking demand peaks. The Local Parking Model estimated maximum total demand of 435 vehicles for the proposed development is significantly below the proposed parking supply of 600 stalls.

Table 4. Projected Total Parking Demand, Proposed Development

Land Use	Units	Time	Rate	Size	Required Parking Stalls
Apartments	Dwelling Unit	Saturday Peak Period	1.04	248	258
		Weekday Peak Period	1.12		278
Restaurant[1]	Seat	Saturday Peak Period	0.29	607	177
		Weekday Peak Period	0.24		146
Total Parking Demand (Saturday)					435
Total Parking Demand (Weekday)					424

1. Restaurant parking rates were increased by 50 percent as a contingency to account for the possibility that additional restaurant guests could have been accommodated during the observed parking demand peaks. These parking rates were applied to both the existing Red Lobster restaurant and the proposed restaurant.

While the total parking demand is a summation of individual land use peak demands in **Table 4**, it should be noted that the peak parking demand by time of day for the restaurant land uses would not be expected to coincide with that of the apartment land use. The Local Parking Model estimate of total parking demand is likely conservative for this reason.

3.3.2. Hourly Parking Demand

To fully understand the parking characteristics of the proposed Alternative 2 development, it is useful to understand how parking demand changes throughout the day. Utilizing the locally observed parking demand data, an hourly parking demand model can be created. As documented previously in the original Penn-American Phase III Parking Study, each potential land use has a specific period of peak parking demand:

- High-Turnover, Sit-Down Restaurant: 5:30 p.m. to 8:00 p.m.
- Apartments: 10:00 p.m. to 7:00 a.m.

An hourly model was created from 5:00-11:00 p.m. to generate parking demand projections covering the individual peak of each potential land use. The proposed Alternative 2 development projected hourly parking demand for a Saturday is shown in **Table 5**, while the projected hourly parking demand for a weekday is shown in **Table 6**. The hourly parking demand profile with respect to the proposed Alternative 2 development parking supply is then illustrated in **Figure 1**.

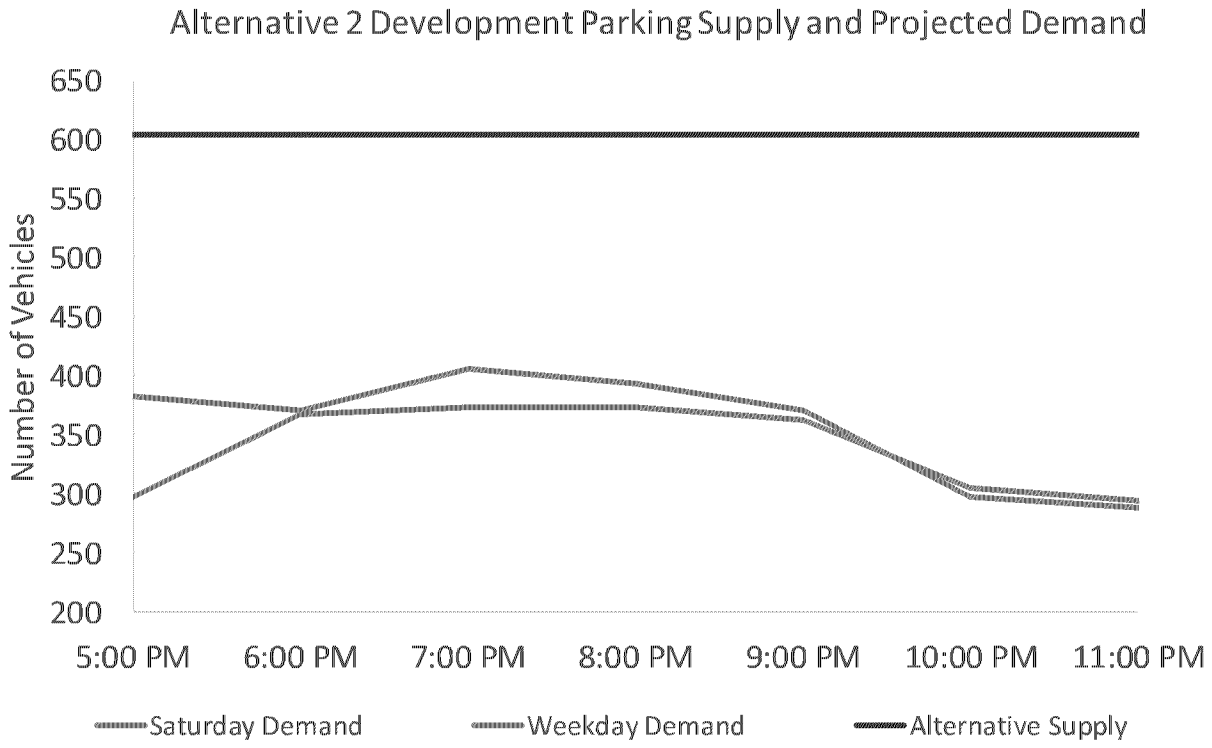
Table 5. Projected Hourly Parking Demand, Alternative 2 Development (Saturday)

Time	Multi-Family Housing		Restaurant		Total Projected Hourly Parking Demand
	Percent of Peak	Projected Parking Demand	Percent of Peak	Projected Parking Demand	
5:00 PM	81%	209	98%	174	383
6:00 PM	83%	215	87%	155	370
7:00 PM	89%	229	100%	177	406
8:00 PM	91%	235	89%	158	393
9:00 PM	93%	239	74%	132	371
10:00 PM	96%	248	28%	50	298
11:00 PM	100%	258	17%	30	288

Table 6. Projected Hourly Parking Demand, Alternative 2 Development (Weekday)

Time	Multi-Family Housing		Restaurant		Total Projected Hourly Parking Demand
	Percent of Peak	Projected Parking Demand	Percent of Peak	Projected Parking Demand	
5:00 PM	68%	190	73%	107	297
6:00 PM	79%	221	100%	146	367
7:00 PM	86%	240	91%	133	373
8:00 PM	91%	253	82%	120	373
9:00 PM	98%	273	61%	90	363
10:00 PM	100%	278	18%	27	305
11:00 PM	100%	278	11%	17	295

Figure 1. Projected Hourly Parking Profile, Alternative 2 Development



The projected peak parking demand for the proposed Alternative 2 development on a Saturday is 406 vehicles, which is expected to occur near 7:00 p.m. The projected peak parking demand for the alternative development on a weekday is 373 vehicles, which is expected to occur near 8:00 p.m. Both projections are well below the proposed parking supply of 600 stalls, resulting in a surplus of more than 190 parking stalls (47 percent surplus).

3.4. Parking Demand Summary

While the parking supplies for the proposed Alternative 2 development may not meet City Code, the parking supplies are adequate when analyzed with the ITE Parking Generation Manual Method and the Local Parking Model Method. It should be noted that a multi-use parking reduction for vehicles utilizing more than one land use in the development was not considered. Any potential seasonal increases in parking demand are expected to be offset by this likely multi-use reduction.

4. Conclusions and Recommendations

The following conclusions and recommendations are offered for consideration:

- Parking demand was estimated based on three methodologies:
  - City of Bloomington Parking Requirements:
    - For the proposed Alternative 2 development, a total of 683 parking stalls are required by City Code (after applicable five percent reduction). This requirement is approximately 14 percent higher than the proposed parking supply of 600 stalls.
  - The ITE Parking Generation Manual:
    - For the proposed Alternative 2 development, a total parking demand of 590 vehicles was estimated utilizing the ITE Parking Generation Manual. This estimate is slightly below the proposed parking supply of 600 stalls.
    - While the total parking demand is a summation of individual land use peak demands, it should be noted that the peak parking demand by time of day for the restaurant land uses would not be expected to coincide with that of the apartment land use. The ITE estimate of total parking demand is likely conservative for this reason. Additionally, the manual does not differentiate between patio and indoor seating, so this estimate would only apply to days with weather suitable for eating outdoors.
  - Local Parking Model developed from locally collected data. Two sub-methodologies were used:
    - Total Parking Demand – A maximum total demand. The Local Parking Model estimated a maximum total demand of 435 vehicles for the proposed Alternative 2 development. This estimate is significantly below the proposed parking supply of 600 stalls.
    - Hourly Parking Demand – Considering that each potential land use has a specific period of peak parking demand, an hourly parking demand model was created to understand how parking demand changes throughout the day. The Local Parking Model estimated an hourly peak parking demand of 406 vehicles for the proposed Alternative 2 development (near 7:00 p.m. on a Saturday). This projection is well below the proposed parking supply of 600 stalls, resulting in a surplus of more than 190 parking stalls (47 percent surplus).
- While the parking supply for the proposed Alternative 2 development may not meet City Code, the parking supply is adequate when analyzed with the ITE Parking Generation Manual Method and the Local Parking Model Method.