TOWN & COUNTRY
ENGINEERING, INC.

September 26, 2025

Mr. Brian Mooney
Village Administrator
Village of Shorewood Hills

Subject: Marshall Court Traffic Monitoring Results

As requested, we have performed traffic monitoring of the Marshall Court corridor. Equipment was deployed at the northeastern quadrant of the Catafalque Drive and Marshall Court intersection. Data was collected between 9/9/25 and 9/22/25. This data is summarized below and tabulated with similar data collected in the corridor for in 2021 and 2018.

Location	**Year**	**Average Daily Traffic (vpd)**	**Average Weekday Traffic (vpd)**	**Speeds**	
				85th	**>30 mph**
West	2018	1,544	1,888	23	0.9%
West	2021	1,198	1,465	24	0.8%
East	2018	1,831	2,187	22	1.2%
East	2021	1,417	1,693	24	1.5%
Central	2025	1,272	1,642	23	0.5%

Notes:
vpd = Vehicles per day
85th = 85th percentile speed in miles per hour (mph)
>30 mph = Percent of traffic traveling more than 30 mph

All of the data from 2025 presented in the table above has been adjusted to remove estimated bicycle traffic. This was done by removing all vehicles from the dataset that were less than 8-feet in length. Estimated bicycles within the corridor represent 6.6% of traffic on weekdays and 6.2% of traffic on weekends. Traffic count volumes are totals for both directions of travel.

Attached to this letter is a map of the 2018, 2021, and 2025 traffic monitoring installation locations. Also attached to this letter is a 2021 letter titled “2725 Marshall Court Development Traffic and Parking Review” and a 2018 technical memorandum titled “2801 Marshall Court Traffic and Parking Study”.

Please feel free to contact us with any questions or comments regarding this information.

Regards,
TOWN & COUNTRY ENGINEERING, INC.

Tim Stieve, P.E.. ENV-SP
Project Engineer

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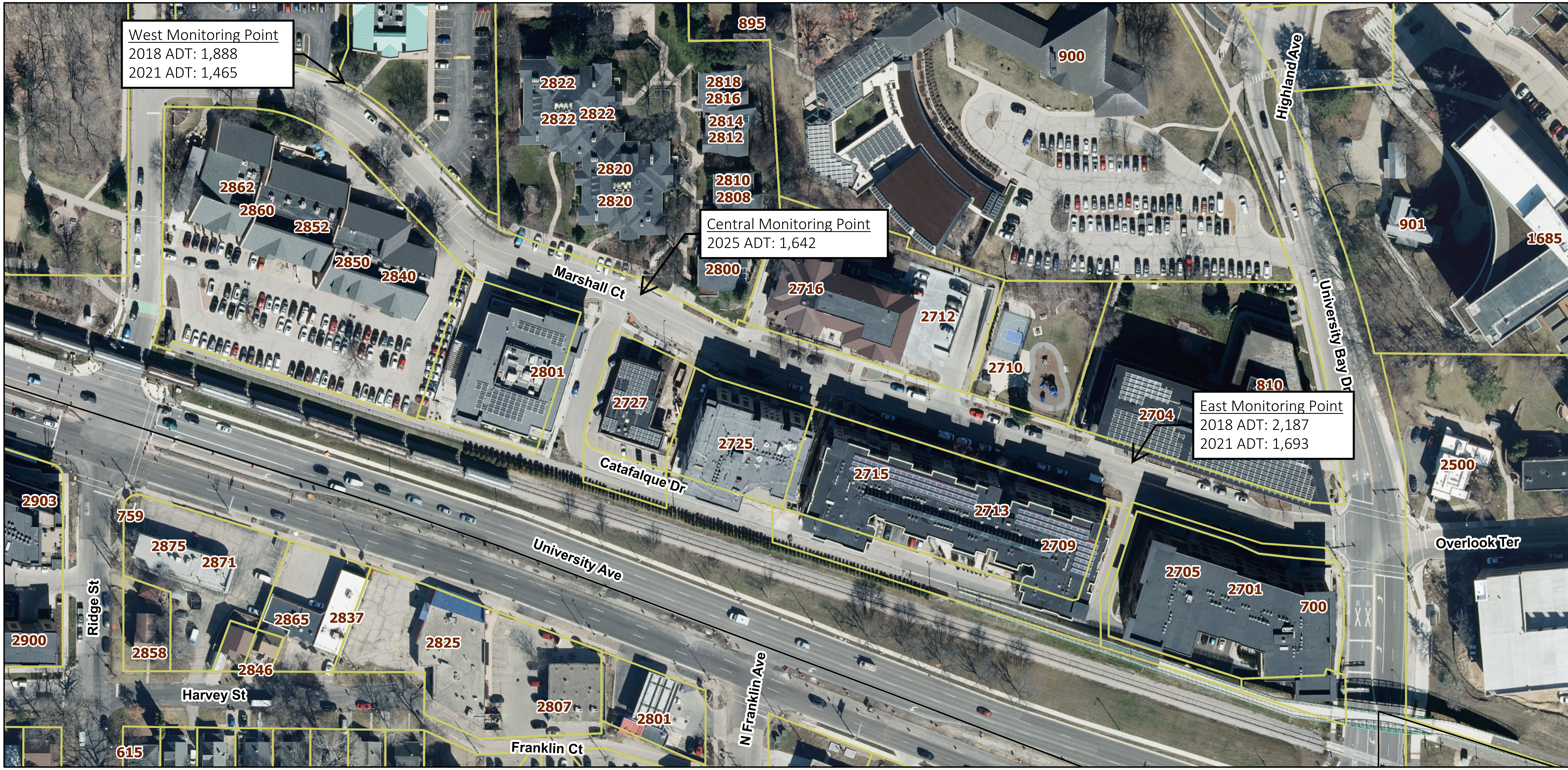
MARSHALL COURT TRAFFIC MONITORING RESULTS
AVERAGE WEEKDAY VOLUMES (BOTH DIRECTIONS)



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Dane County Land Information Office (LIO), Fly Dane Partnership, Ayres Associates, Wisconsin Regional Orthoimagery Consortium (WROC)

Strand Associates, Inc.®
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Madison, WI 53715
(P) 608.251.4843

EXCELLENCE IN ENGINEERING

December 8, 2021

Mr. Karl Frantz, Village Administrator
Village of Shorewood Hills
810 Shorewood Boulevard
Madison, WI 53705-2115

Re: 2725 Marshall Court Development Traffic and Parking Review
Village of Shorewood Hills, Wisconsin (Village)

Dear Mr. Frantz:

Thank you for the opportunity to complete the following 2725 Marshall Court Development Traffic and Parking Review. Based on scoping discussions, Strand Associates, Inc.® (Strand) completed the following tasks:

- Daily traffic volume counts on Marshall Court at two locations.
- Observation of trips in and out of the Lodgic site at 2801 Marshall Court for local context.
- Trip generation for the proposed 2725 Marshall Court development.
- Parking generation for the proposed 2725 Marshall Court development.

1. Site Description

In accordance with the letter provided by Knothe & Bruce Architects, LLC, the site is located at 2725 Marshall Court and is currently the site of a vacant, two-story commercial building with surface parking. The proposed development includes the demolition of the existing building and the construction of a new four-story multifamily building with 45 units and 53 parking stalls in two levels of underground parking.

2. Summary of Field Data Collection Results

a. Daily traffic on Marshall Court

Strand used microwave radar detectors to collect traffic volumes and speeds on Marshall Court at two locations. The west location was between the two driveways serving the University of Wisconsin (UW) Department of Ophthalmology and Visual Sciences building (2870 and 2828 Marshall Court). The east location was just east of the parking garage entrance to the 800 University Bay Drive building. Figure 1 shows the results from similar counts in 2018 and the latest 2021 data.

Location	Year	Average Daily Traffic (vpd)	Average Weekday Traffic (vpd)	Speeds	
				85th	>30 mph
West	2018	1,544	1,888	23	0.9%
	2021	1,198	1,465	24	0.8%
East	2018	1,831	2,187	22	1.2%
	2021	1,417	1,693	24	1.5%

Notes:
vpd = Vehicles per day
85th = 85th percentile speed in miles per hour (mph)
>30 mph = Percent of traffic traveling more than 30 mph

Figure 1 Marshall Court Traffic Volumes and Speeds

Traffic volumes are lower in 2021 than in 2018, while speeds are slightly higher. Both of these results are likely primarily because of the impacts of the COVID-19 pandemic. Similar patterns have been found on other streets in the City of Madison area and throughout the country. The volumes are lower despite the fact that the 2018 counts were taken before the construction and opening of the Lodgic site at 2801 Marshall Court.

b. Trips In and Out of the Lodgic site at 2801 Marshall Court

Strand counted the number of trips in and out of the Lodgic site on Wednesday, November 17 (PM peak period) and Thursday, November 18, 2021 (AM peak period). The results are shown in Figure 2.

Period	ITE Raw Trips	Observed			
		Trips (all)	Trips (driveway)	Trips (ped)	Total Cars
AM Peak	93	54	14	40	36
PM Peak	89	86	32	54	62
Daily	836	601	198	404	420

Notes:
ITE Raw Trips = Number of car trips predicted by Institute of Transportation Engineers (ITE) rates
driveway = Number of cars in and out of the Lodgic parking garage
ped = Number of people walking in and out of the Lodgic building doors, some of whom drove cars and parked before walking in

Figure 2 Lodgic Site Trips

The total trips in and out of the Lodgic site was 54 during the AM peak hour, 86 during the PM peak hour, and estimated to be 601 for an entire day. The driveway trips count the number of cars in and out of the on-site parking garage. The pedestrian trips are the number of people that walked in and out of the doors of the building. The total cars is the number of driveway trips plus an estimate of the number of pedestrian trips that were made by people driving to the area, parking, and then walking in and out of the building.

The numbers in Figure 2 can be used to estimate local trip reduction factors from the ITE trip generation estimates. Averaged across all three time periods (AM peak, PM peak, and estimated daily) the Lodgic site produced 25 percent fewer total trips than the ITE trip generation rates would predict. It also experienced an average mode split of approximately 70 percent cars and 30 precent pedestrians and bicycles.

3. Trip and Parking Generation for the 2725 Marshall Court Development

a. Trip Generation

Based on the trip generation rates included in the ITE *Trip Generation Manual, 10th Edition*, the proposed 2725 Marshall Court development would produce the following number of trips:

The ITE raw total trips are:

AM Peak Hour:	Total of 16; 4 in and 12 out
PM Peak Hour:	Total of 21; 13 in and 8 out
Daily Trips:	Total of 244

Observation of the Lodgic site indicates it is producing, on average, approximately 25 percent less traffic than the ITE trip generation rates would predict. It is worth noting, however, that the Lodgic site may not be operating at full capacity given the timing of its launch during the COVID-19 pandemic. For this reason, and because of the low number of site trips, no reduction in total trips is assumed for the 2725 Marshall Court development.

It is reasonable to assume that the observed mode split of approximately 70 percent cars and 30 percent pedestrians and bicycles would apply to the 2725 Marshall Court development.

The estimated total car trips are then:

AM Peak Hour:	Total of 11; 3 in and 8 out
PM Peak Hour:	Total of 15; 9 in and 6 out
Daily Trips:	Total of 171

b. Parking Generation

Based on the parking generation rates included in the ITE *Parking Generation Manual, 5th Edition*, the proposed 2725 Marshall Court development would demand between 52 and 59 total parking stalls. This assumes a general urban or suburban setting without nearby transit. The Marshall Court area is on the proposed Bus Rapid Transit (BRT) line and is served by an off-street shared-use path, suggesting demand for parking may be less than the ITE estimate. Currently, 53 parking stalls are proposed.

4. Discussion

The proposed 2725 Marshall Court development adds to the mixed-use nature of the Marshall Court corridor by adding additional residential use to the existing mix of office, commercial, medical, and residential buildings. The traffic impacts from the redevelopment should be modest. Assuming 60 percent of the vehicles come or go from or to the west based on prevailing traffic patterns, car traffic is anticipated to increase by approximately 5 percent in the AM peak hour, approximately 5 percent in the PM peak hour, and approximately 9 percent over the course of a day.

The proposed 53 parking stalls should more than accommodate the site's parking demand. It is in within the unadjusted range from ITE parking generation rates (52 to 59 stalls) and is more than one stall per unit.

Thank you again for the opportunity to provide this traffic review. Attachment A includes an updated summary of previous studies for additional context. Please contact me at 608-251-4843 if you have questions or would like additional information.

Sincerely,

STRAND ASSOCIATES, INC.®

Jeffrey S. Held, P.E., PTOE

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Attachment A: Summary or Previous Studies and Plans

1. Marshall Court Traffic Study (2008)

The *Marshall Court Traffic Study (2008)* was completed by Strand Associates, Inc.® (Strand) at the time the 800 U-Bay redevelopment was in the Village of Shorewood Hills (Village) approval process. The study included assumptions about the redevelopment potential of the Doctor's Park area and estimated the net increase in traffic that would result based on two redevelopment scenarios. Scenario 1 assumed a higher amount of residential redevelopment. Scenario 2 assumed a higher amount of office redevelopment. Figure 2 shows the trip generation results from the study. To date, redevelopment has been more similar to Scenario 1.

	Daily Trips	AM Peak Hour			PM Peak Hour		
		AM In	AM Out	Total	PM In	PM Out	Total
Scenario 1 (residential-based)	3,078	167	94	261	125	205	330
Scenario 2 (office-based)	3,680	317	75	392	116	325	441

Figure 2 Marshall Court Traffic Study (2008) Estimated Net New Motor Vehicle Trips

The study proposed consideration of the following:

a. Construct a partial signal at University Avenue and Marshall Court and Ridge Street (completed).

b. Construct a full median on University Bay Drive at Marshall Court to prohibit left turns in or out. Provide the opportunity for U-turns at University Bay Drive and Highland Avenue to replace the northbound left turn in from University Bay Drive to Marshall Court with a northbound U-turn followed by a southbound right turn (a traffic signal is now proposed at this intersection as part of the reconstruction project at University Avenue and University Bay Drive and Farley Avenue).

c. Provide sidewalk on both sides, parallel parking, and on-street bike lanes as the Marshall Court street section is reconstructed (completed).

d. Provide an off-street multiuse path along the north side of the railroad tracks parallel to University Avenue (completed).

   Traffic operations modeling indicated some increase in traffic congestion and delays after full redevelopment even if all the proposed improvements were implemented.

2. Doctor's Park Neighborhood Plan

This plan was completed by Vierbicher Associates, Inc. (Vierbicher) in 2008 and 2009. It includes goals for land use, urban design, transportation, utilities, and facilities. Generally speaking, the plan calls for more diverse land uses, projects that minimize traffic impacts to the extent possible, improved conditions for bicycles and pedestrians, and cooperation on parking issues.

The plan calls for the following:

a. Mixed land uses including office, commercial, and residential with two to four stories and shared, structured parking provided on-site (similar to completed projects to date).

b. Provide sidewalk on both sides and parallel parking as the Marshall Court street section is reconstructed (completed).

c. Provide an off-street, multiuse path along the north side of the railroad tracks parallel to University Avenue (completed).

d. Provide pedestrian connections between Marshall Court and the multiuse path along the railroad tracks (partially completed).

3. Marshall Court Improvements Study (2010)

The *Marshall Court Improvements Study (2010)* was completed by Strand to further evaluate the proposed partial signal at University Avenue, and Marshall Court and Ridge Street. It also investigated improvements at University Avenue, and University Bay Drive and Farley Avenue. The estimated net increase in motor vehicle trips in the area resulting from redevelopment from the 2008 study was used for the analysis.

The report includes additional traffic operations evaluation of the partial signal at University Avenue, and Marshall Court and Ridge Street and a list of outstanding issues to be resolved in its design (completed). It also includes additional traffic operations evaluation of the University Avenue, and University Bay Drive and Farley Avenue intersection and a list of outstanding issues to be resolved when future improvements are made (some have been included in the reconstruction project that will be constructed beginning in 2022).

4. Stone House Development Traffic Review (2011)

This letter was completed by Strand at the time Arbor Crossing I (ACI) was in the Village approval process. It compared the trip potential of the three parcels being redeveloped versus the proposed four-story, mixed-use ACI site. Trip generation indicated that ACI would generate a similar amount of motor vehicle trips to the three parcels being redeveloped if each were simultaneously fully occupied as they once had been. It also included some recommendations for the site plan regarding bicycle and pedestrian accommodations.

5. Near Westside Neighborhoods and University Avenue Corridor Transportation Study (2014)

Strand completed the *Near Westside Neighborhoods and University Avenue Corridor Transportation Study (2014)* for the Village, the City of Madison, and the University of Wisconsin-Madison. The project developed approximately 50 recommendations along University Avenue and in the neighborhoods to the north and south seeking to advance the study's guiding theme of seeking options to reduce demand for peak-hour single occupant motor vehicle travel and/or improving conditions for alternate modes without a severe detriment to car and bus travel.

Recommendations most applicable to the Marshall Court area and the site include:

a. Near-Term Recommendations

N2 Stagger start and stop times of major employers (Marshall Court sites generally comply with this).

N24 Complete the missing portions of the east to west bike path between Shorewood Boulevard and University Bay Drive (completed).

b. Long-Term Recommendations

L7 Full reconstruction of the University Avenue and University Bay Drive intersection including additional turn lanes, two northbound lanes on University Bay Drive departing the intersection, new sidewalk on the east side, and a generous center refuge at the multiuse path crossing (will be constructed beginning in 2022).

L8 Construct an east to west, grade-separated bicycle and pedestrian crossing of University Bay Drive (will be constructed beginning in 2022).

6. University Bay Drive Conceptual Layout (2015)

Strand completed a conceptual layout of improvements to University Bay Drive at University Avenue. The primary features of the improvements include the addition of sidewalk along the east side, potential locations for a bus pullout, and an improved refuge area at the location of the multi-use path crossing north of the railroad tracks.

7. Marshall Court 2016 Traffic Review (2016)

Strand completed a review of traffic conditions on Marshall Court from University Avenue to University Bay Drive. The report includes a summary of previous studies (similar to that stated previously) and plans for the area at the time and discusses data related to traffic volumes, parking occupancy, crashes, and speeds on Marshall Court. The study found that the increase in traffic volumes after approximately 50 percent of the anticipated redevelopment on Marshall Court was complete was between 20 and 50 percent of the forecasted traffic increase from in the original 2008 Marshall Court Traffic Study. Findings indicated traffic was proceeding as expected and the predicted moderate increase in traffic congestion following full redevelopment could be expected to remain reasonably accurate.

Following is a portion of the Summary section of this report:

"Redevelopment of properties along Marshall Court is approximately half complete as of early 2016. From a traffic volumes standpoint, the total increase in traffic to date is in line with (for the most part lower than) what was forecasted in the 2008 Marshall Court Traffic Study. Based on field data collection of how many trips AC I is currently generating, total trips in and out of the area are expected to increase by 20 to 30 percent after the 700 U-Bay and AC II projects are complete. It is likely that 20 percent or more of these new trips will not be made by car.

On weekdays, parking can be challenging to find during the lunch hour but it is generally available at other times. Several ongoing and planned projects should help offset or reduce some of the parking demand in the area. The general approach the Village has followed is to require that sites provide adequate parking to serve their own needs as they are redeveloped."

7. University Avenue Reconstruction (2018 to 2023)

The reconstruction of University Avenue from Shorewood Boulevard through the University Bay Drive and Farley Avenue intersection will begin in 2022. Figure 3 shows the proposed improvements along University Bay Drive at Marshall Court.

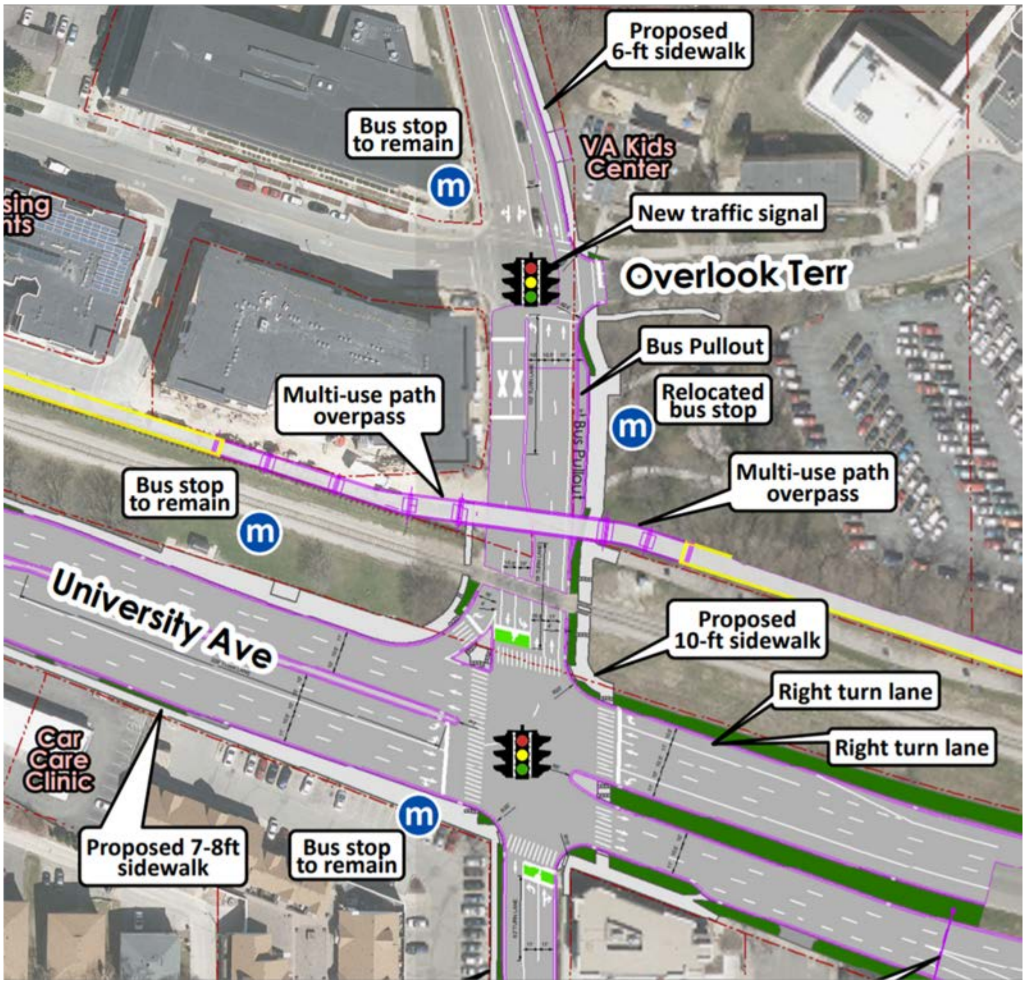

Figure 3 University Avenue and University Bay Drive and Farley Avenue Reconstruction (2022 and 2023)

8. Lodgic Development Traffic and Parking Review

At the Village's request, Strand completed an independent estimate of the Lodgic site trip generation and parking demand completed and reviewed the *2801 Marshall Court (Lodgic) Traffic and Parking Study* by KL dated June 28, 2018 (KL Study).

a. Strand Trip Generation

The Strand estimated raw total trips are:

AM Peak Hour:	Total of 93; 56 in and 38 out
PM Peak Hour:	Total of 89; 44 in and 46 out
Daily Trips:	Total of 836

The above trip totals are representative of conditions if each land use were stand alone in its own building. The mixed-use nature of the site along with some of its operational characteristics will lead to a much smaller number of motor vehicle trips being generated. Accordingly, Strand applied several reduction factors to the raw trips to estimate the number of new motor vehicle trips into and out of the site.

The Strand estimated total new Site car trips are:

AM Peak Hour:	Total of 52; 31 in and 21 out
PM Peak Hour:	Total of 50; 24 in and 26 out
Daily Cars:	Total of 468

b. Strand Parking Demand

Strand used the Institute of Transportation Engineers *Parking Generation Handbook, 3rd Edition* to estimate the parking demand for each portion of the site.

The Strand estimated raw parking demand is:

Average Demand:	120 stalls
85th Percentile Demand:	157 stalls

Similar to the trip generation calculations, the above parking demand is representative of conditions if each land use were stand alone in its own building and all trips were made by motor vehicle. The mixed-use nature of the site along with some of its operational characteristics will lead to a much smaller demand for parking.

The Strand adjusted parking demand is:

Average Demand:	67 stalls
85th Percentile Demand:	88 stalls

c. KL Trip Generation

The KL Study estimated total new development car trips are:

AM Peak Hour:	Total of 100; 60 in and 40 out (Strand estimate is 52 total)
PM Peak Hour:	Total of 100; 50 in and 50 out (Strand estimate is 50 total)
Daily Cars:	Total of 740

d. KL Parking Demand

The KL adjusted parking demand is:

Average Demand:	56 stalls
85th Percentile Demand:	69 stalls

TECHNICAL MEMORANDUM

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To: J. Randy Bruce, AIA
Knothe & Bruce Architects, LLC

From: Mike Scarmon, P.E., PTOE
KL Engineering, Inc.

Date: June 28, 2018

Subject: 2801 Marshall Court
Traffic and Parking Study
Village of Shorewood Hills, Wisconsin

Introduction

Marshall Court Investors, LLC is proposing to construct a mixed-use development at 2801 Marshall Court in the Village of Shorewood Hills, Wisconsin. This memo documents the traffic impacts of this proposed development, known as the Lodgic Development. The purpose of this study is to quantify expected traffic and parking generation, analyze access and circulation conditions, and provide any necessary recommendations in accordance with Village requirements.

A project location map is shown in **Exhibit 1**.

Proposed Development

The proposed development consists of one building with four expected uses. The building is expected to contain the following land uses with sizes given in square feet:

- Restaurant - 4,500 square feet (SF)
- Childcare Facility - 4,500 SF
- Co-working Office Space - 11,000 SF
- Event Space - 1,400 SF

The developer has indicated that the square footages listed are conservative estimates and combined, would exceed the proposed building footprint. These land use sizes were used so that a conservative estimate of trip and parking generation could be performed and to account for slight changes that may occur as the design is finalized.

A site plan is shown in **Exhibit 2**.

Some outdoor space is associated with each of the land uses except for the co-working office space. Outdoor space was not added to associated indoor space for total land use square footage. This is in accordance with the methodologies prescribed by the *ITE Trip Generation Manual* and the *ITE Parking Generation Manual*.

Trip Generation

Each of the land uses within the proposed development has been assigned a land use type in accordance with the *Institute of Transportation Engineers Trip Generation Manual, 10th Edition (ITE Manual)*. It should be noted that the *ITE Manual* does not contain a land use directly applicable to event space. The ITE land use Quality Restaurant was used to account for this portion of the development based on a "best fit" with available land uses and land use descriptions in the *ITE Manual*.

Trip Generation for the Lodgic Development was estimated according to *ITE Trip Generation Manual* methodology. The resulting trip generation estimate is shown in **Table 1** below. Trips were generated using square footage rather than other attributes such as number of seats or employees. Square footage was used because it provides a more direct comparison to the comparable sites that the trip generation rates are based on and remains applicable if internal configurations are adjusted, as long as each land use has the same square footage associated with it.

Table 1. Development Trip Generation

ITE Land Use	ITE Land Use Code	Size	Weekday Daily Trips (rate)	AM Peak			PM Peak		
				In (%)	Out (%)	Total (rate)	In (%)	Out (%)	Total (rate)
High-Turnover (Sit-Down) Restaurant	932	4.5 KSF	505 (112.18)	25 (55%)	20 (45%)	45 (9.94)	30 (62%)	15 (38%)	45 (9.77)
Day Care Center	565	4.5 KSF	215 (47.62)	25 (53%)	25 (47%)	50 (11.00)	25 (47%)	25 (53%)	50 (11.12)
General Office Building	710	11.0 KSF	125 (11.36)*	30 (86%)	5 (14%)	35 (3.18)*	0 (16%)	15 (84%)	15 (1.36)*
Quality Restaurant	931	1.4 KSF	115 (83.84)	- -	- -	0 (0.73)	5 (67%)	5 (33%)	10 (7.80)
		Total Generated Trips:	**960**	**80**	**50**	**130**	**60**	**60**	**120**
Linked Trip Reduction (20%)^			(170)	(15)	(10)	(25)	(10)	(10)	(20)
Multimodal Trip Reduction 10%)†			(50)	(5)	0	(5)	0	0	0
Total New Trips:			**740**	**60**	**40**	**100**	**50**	**50**	**100**

*Rate derived from fitted curve equation

^Linked trip reduction applied to High-Turnover Restaurant, Daycare, and General Office Building land uses.

†Multimodal trip reduction applied to High-Turnover Restaurant and Office land uses.

Linked trips are those trips that would normally occur in two different locations but are combined based on the ability of a development to satisfy multiple trip purposes. The Lodgic development is being planned to attract working parents who utilize coworking spaces and require childcare. By providing working space, foodservice, and childcare in one location, trips between those places no longer occur on the public roadway network. Consider for example a user of the coworking space that eats lunch at the on-site restaurant. This person generates four trips (one "out" from the office and one "in" to the restaurant, then one "out" from the restaurant and one "in" to the office). Because the trips in this example are between land uses within the Lodgic Development, they do not occur on the public roadway network.

In addition to the presence of complimentary land uses, the operator of the Lodgic Development does have strategies planned to encourage this linked behavior. Based on this, a 20% linked trip reduction was applied to the restaurant, daycare, and office building land uses. The developer plans for up to about 30% linked, or captured trips, however, a lower number was used for this analysis in order to maintain a conservative estimate.

Some trips are expected to be served by modes of transportation other than personal vehicle. The corresponding reduction in trip generation is referred to as the multimodal trip reduction. This includes pedestrian, transit, and bicycle modes of transportation. The development is located near numerous transit routes that run along University Avenue and University Bay Drive. Bicycle facilities are located nearby the proposed development and the Village of Shorewood Hills has plans for the extension of the paved bicycle path along the north side of

University Avenue. Based on these conditions, a multimodal reduction rate of ten percent was chosen and applied to the restaurant and office land uses.

The proposed development is projected to generate 740 new weekday daily trips, 100 new trips (60 in and 40 out) during the AM peak hour, and 100 new trips (50 in and 50 out) during the PM peak hour.

The Marshall Court Traffic Study, prepared in 2008, projected the overall increases in vehicle trips on Marshall Court expected to result from redevelopment of the area. The projected trip generation for the proposed development is equal to approximately 25% of this overall trip increase during the AM and PM peak hours. This value does not include the elimination of vehicle trips generated by the current land use at the location of the proposed development.

Trip Distribution and Assignment
The projected trips generated by the proposed development have been assigned to the local roadway network according to expected regional travel patterns. Based on these assumptions, the projected trip distribution of development traffic is as follows:

- 40% to/from the east on University Avenue
- 40% to/from the west on University Avenue
- 20% to/from the north via University Bay Drive

Some of the development parking demand is expected to be served by on-street parking proposed along Catafalque Drive and Marshall Court, adjacent to the development. These spaces are expected to exhibit higher turnover rates than those in the underground parking area. Therefore, a portion of peak hour trips have been assigned to on-street parking spaces rather than the development driveway. These trips are accounted for in the trip assignment exhibit by assigning them to Catafalque Drive.

The assignment of development traffic to the local roadway network is shown in **Exhibit 3.**

These traffic volumes in conjunction with the proposed access are not anticipated to have a significant impact to traffic operations within the study area.

Parking Generation
The expected parking demand of the Lodgic Development has also been estimated according to ITE methodology. The same land uses were used for parking generation as those used for trip generation. The resulting parking generation estimate includes projections for peak weekday parking demand for each land use. The methodology is based on observation of comparable sites. Average and 85^{th} percentile peak projected demand is provided. Parking generation for the proposed Lodgic Development is summarized in **Table 2**.

Table 2. Development Parking Generation

ITE Land Use	Size	Peak Parking Demand		Peak Period
		Weekday Average (rate)	**85th Percentile (rate)**	
High-Turnover (Sit-Down) Restaurant without Bar or Lounge - Urban (932)	4.5 KSF	**25** (5.55)	**29** (6.37)	6 pm - 8 pm
Day Care Center (565)	4.5 KSF	**14** (3.16)	**17** (3.70)	8 am - 9 am, 4 pm - 6 pm
Office Building - Urban (701)	11.0 KSF	**27** (2.47)	**33** (2.98)	9 am - 5 pm
Quality Restaurant (931)	1.4 KSF	**15** (10.6)	**20** (14.2)	7 pm - 9 pm
	Subtotal:	**81**	**99**	**N/A**
Linked Use Parking Reduction (20%)		**(13)**	**(16)**	
Multimodal Trip Parking Reduction (10%)		**(4)**	**(5)**	
	TOTAL:	**64**	**78**	

Reductions were made to the parking generation using the same reduction rates used for the trip generation. This was based on the assumption that parking demand is proportional to vehicular trips to and from the site. After reductions, the sum of average and 85th percentile peak parking demand for proposed land uses is 64 and 78 parking spaces, respectively. However, peak parking demand periods for each land use are not anticipated to be coincident with one another. By including the 85th percentile parking demand rate for similar land uses, a conservative estimate of parking demand is maintained.

Land uses that make up the development are expected to have peak parking demand periods staggered throughout the day. Specifically, the daycare and office land uses are anticipated to generate peak parking demand between morning and late afternoon hours while the restaurant land uses are anticipated to generate their peak parking demand well after, during the evening hours. Therefore, the aggregate peak parking demand is expected to be lower than the simple sum of that of each land use.

The *ITE Parking Generation Manual* includes time-of-day parking demand information for all land uses proposed with the Lodgic Development except for the daycare land use. Daycare land use parking demand was therefore assumed to be 100% at all times. Using this information, a composite parking demand profile was developed for the development. The average and 85th percentile anticipated peak parking demand for the Lodgic development was found to be 56 and 69 spaces, respectively, during the 7 pm to 8 pm hour. Details of this analysis are provided in **Attachment A**.

Although the childcare facility within the building is not expected to generate high parking demand, the drop-off and pickup patterns exhibited at this facility will likely result in high parking turnover during morning and afternoon periods.

Proposed Parking

The proposed development is expected to contain 64 underground parking spaces. Five on-street parking spaces are proposed adjacent to the development on Marshall Court, and five on-street parking spaces are proposed adjacent to the development on Catafalque Drive.

The parking demand of the proposed development is expected to be accommodated by the underground parking spaces at most times. On-street spaces adjacent to the development are anticipated to be utilized during peak parking utilization periods and by short duration visits to the site such as childcare pickup and drop off. The developer is currently negotiating use of off-site parking facilities for employees to further reduce anticipated on-site parking demand.

Bicycle Parking

Bicycle parking facilities are recommended for inclusion with the proposed development to accommodate visitors arriving via bicycle and to reduce potential demand for vehicle parking. It is recommended to accommodate up to 10 bicycles on street level, and up to 10 bicycles in the underground parking area.

Site Accessibility

The proposed development is expected to be accessible from an underground parking facility in addition to two street-level entrances. The underground parking facility is accessed by a driveway adjacent to the building onto Marshall Court. On-street parking will also be provided on Marshall Court and on the adjacent alley (Catafalque Drive).

Most vehicles accessing the building are expected to use the underground parking facility. Access to the childcare facility is expected to occur primarily via the proposed parallel parking spaces on Marshall Court and Catafalque Drive, adjacent to the development. It is recommended to designate at least 3-4 parking spaces for loading and unloading of children accessing the facility.

The access concept provided in the current site plan provides acceptable accommodations to all expected uses within the Lodgic Development. It is expected that the planned (construction in 2018) two-way alley extension of Catafalque Drive to Marshall Court will further accommodate alternative entering and exiting patterns at the development. Marshall Court, adjacent to the development, is planned for reconstruction in 2019. This project should consider the conclusions of this traffic study when planning for on-street parking locations and driveway locations.

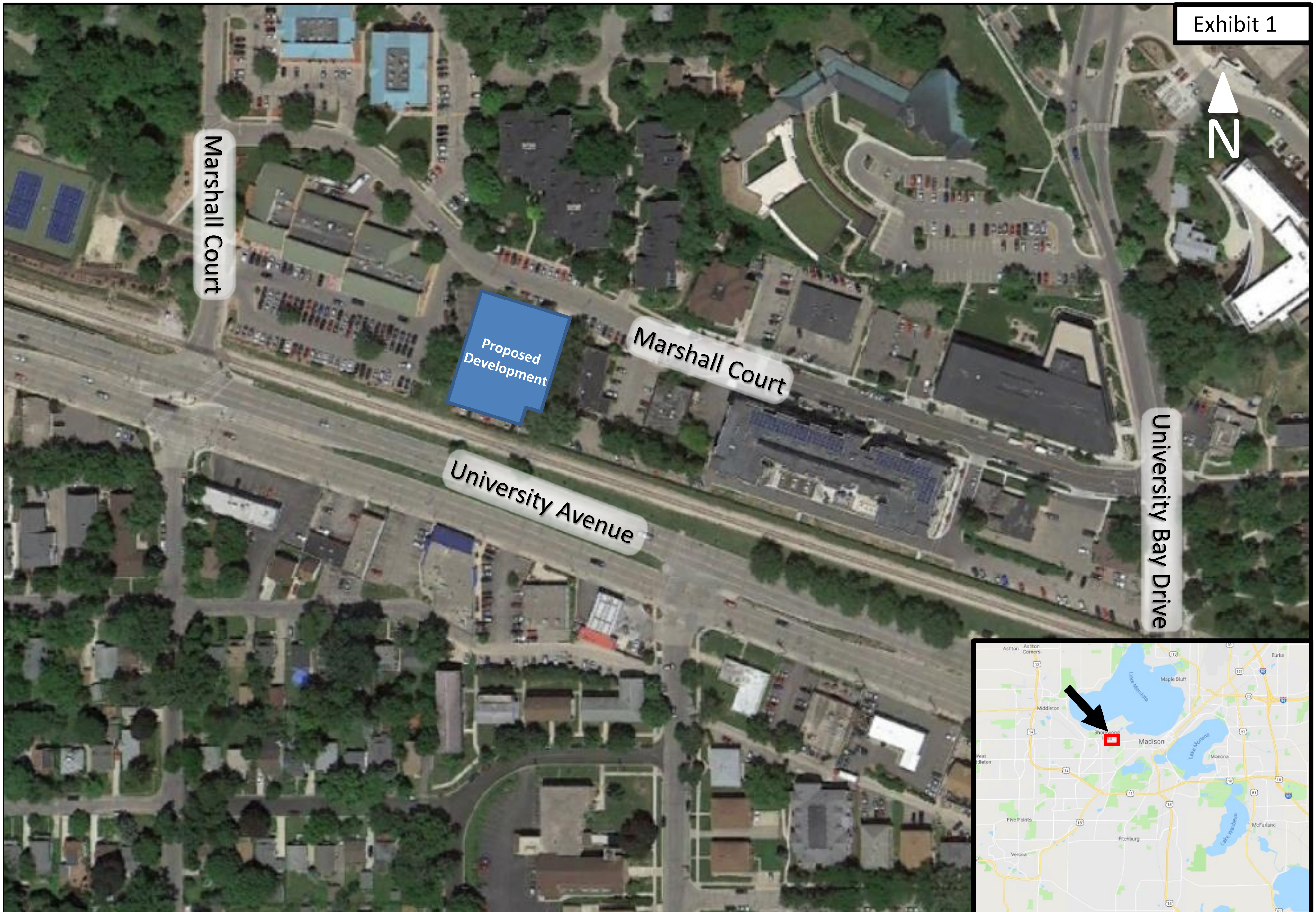
Conclusions and Recommendations

The conclusions of the traffic and parking study for the proposed Lodgic Development are as follows:

- The proposed development is expected to generate 740 new weekday daily trips, 100 during the AM peak hour and 100 during the PM peak hour.
- The proposed development is expected to have a peak parking demand of between 56 and 69 parking spaces. This peak demand is expected to occur between 7 pm and 8 pm.
- Traffic generated by the proposed development is not anticipated to result in significant impacts to traffic operations within the study area.
- Parking proposed with the development is anticipated to meet the parking demand generated.
- Access to and from the development is expected to be reasonably accommodated by the proposed site plan.

Recommendations associated with the proposed development are as follows:

- Provide bicycle parking totaling 10 underground spaces and 10 street-level spaces
- Designate 3-4 parallel parking spaces for loading and unloading near the childcare entrance



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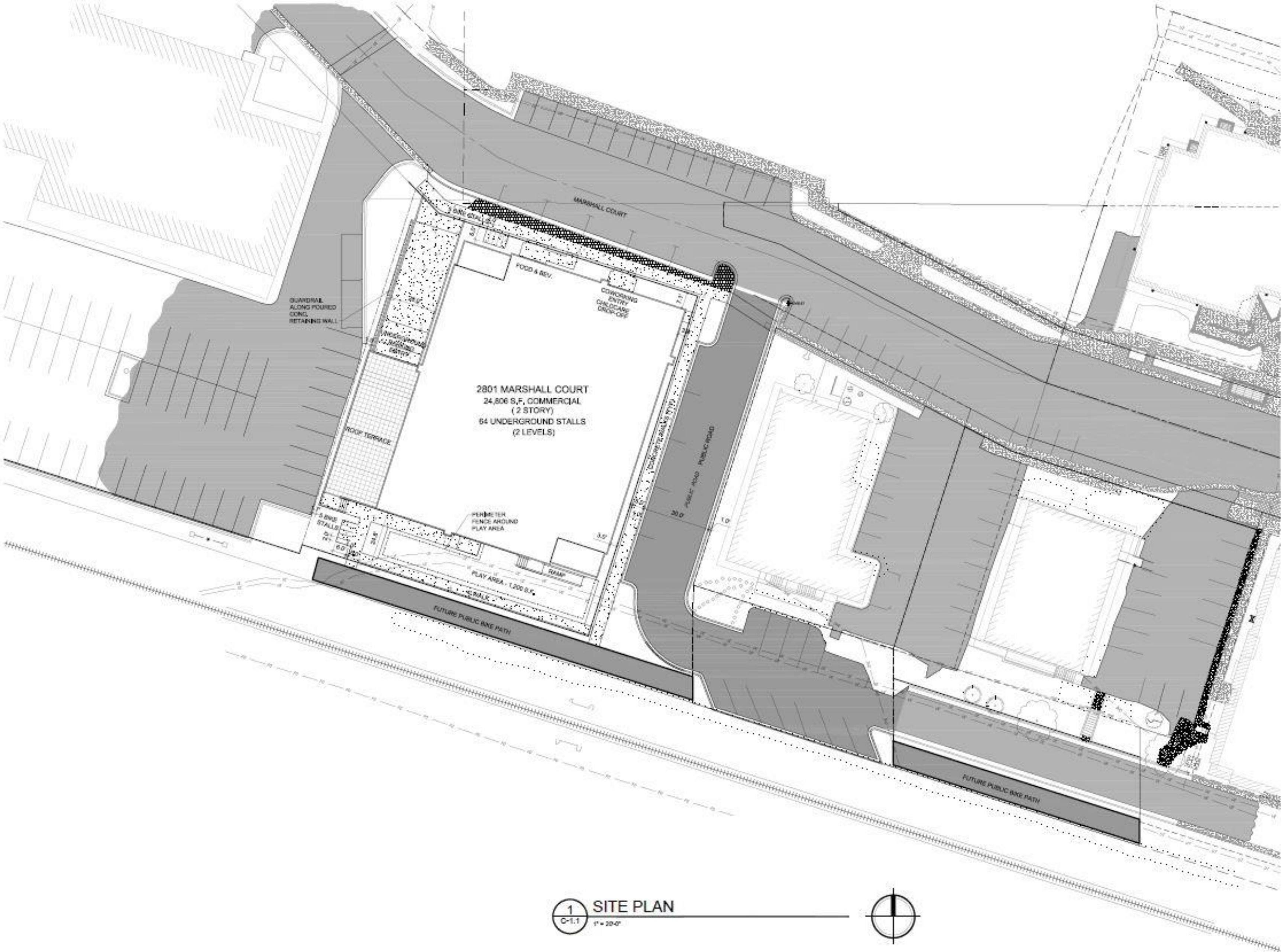
Project Location

Exhibit 2



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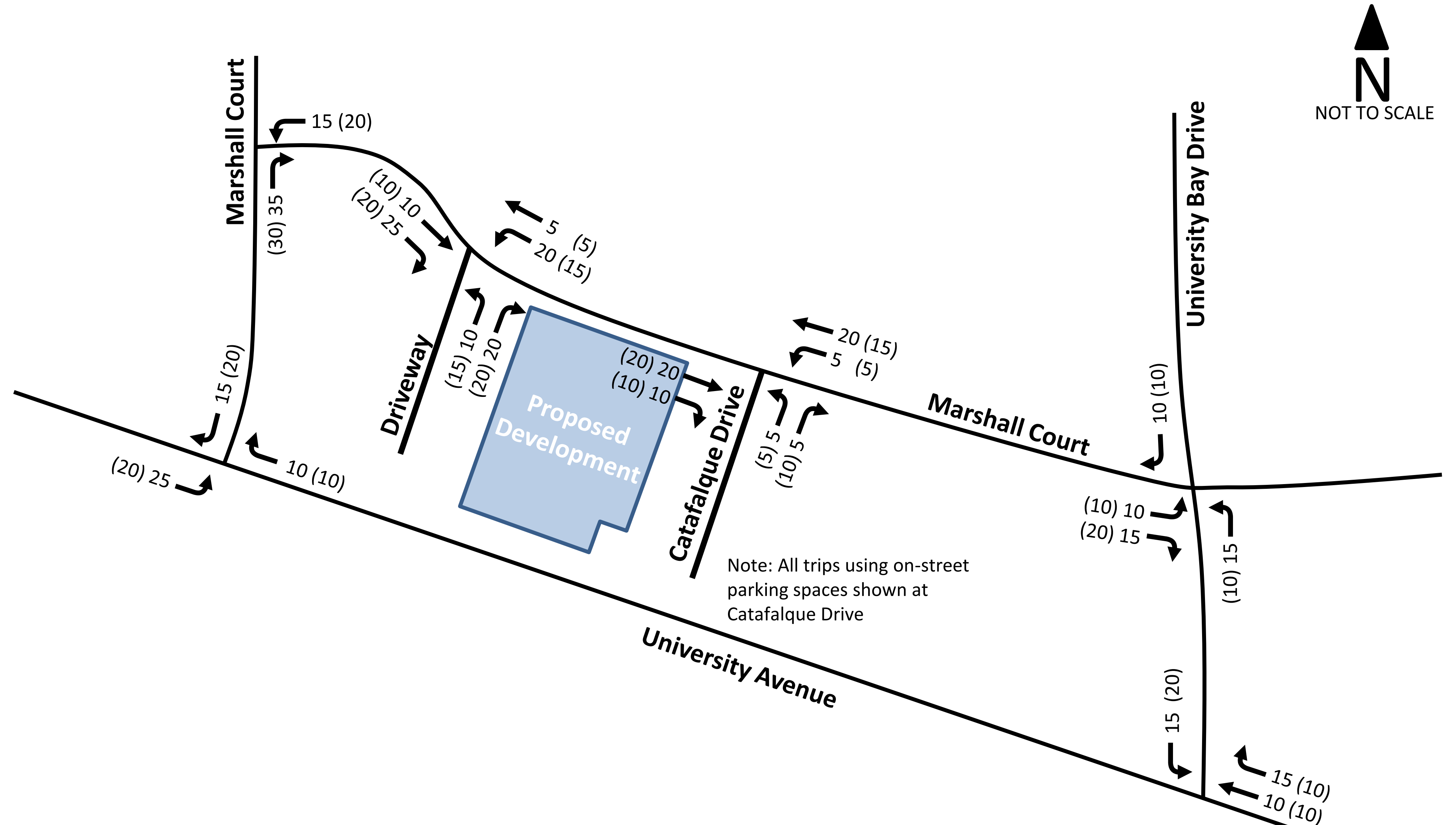
Site Plan

Exhibit 3



LEGEND
XX = AM Peak Hour Volumes
(XX) = PM Peak Hour Volumes

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Development Volumes

ATTACHMENT A

Hourly Parking Distribution

Table 1. Hourly Parking Demand Profile by Land Use

Hour	Land Use				Composite*
	932	565	701	931	
Hourly Percent of Peak Demand					
5:00 AM	5	100	19	20	33
6:00 AM	5	100	19	20	33
7:00 AM	5	100	19	20	33
8:00 AM	5	100	64	20	50
9:00 AM	5	100	91	20	61
10:00 AM	7	100	99	20	66
11:00 AM	16	100	99	20	69
12:00 PM	49	100	98	51	86
1:00 PM	39	100	96	56	83
2:00 PM	27	100	100	40	77
3:00 PM	19	100	99	27	71
4:00 PM	22	100	90	27	69
5:00 PM	60	100	58	39	73
6:00 PM	94	100	58	71	93
7:00 PM	100	100	58	100	100
8:00 PM	81	100	58	97	93
9:00 PM	84	100	58	97	94
Peak Demand (spaces)					
Average	25	14	27	15	70^
85th Percentile	29	17	33	20	85†

* Based on percent of peak site parking demand presented in Table A.2 and Table A.3.
^ Based on calculated overall site peak parking demand presented in Table A.2
† Based on calculated overall site peak parking demand presented in Table A.3

Table 2. Hourly Parking Demand by Land Use and Site Total - Average

Hour	Land Use				
	932	565	701	931	Site Total
Hourly Demand (spaces)					
5:00 AM	1	14	5	3	23
6:00 AM	1	14	5	3	23
7:00 AM	1	14	5	3	23
8:00 AM	1	14	17	3	35
9:00 AM	1	14	25	3	43
10:00 AM	2	14	27	3	46
11:00 AM	4	14	27	3	48
12:00 PM	12	14	26	8	60
1:00 PM	10	14	26	8	58
2:00 PM	7	14	27	6	54
3:00 PM	5	14	27	4	50
4:00 PM	6	14	24	4	48
5:00 PM	15	14	16	6	51
6:00 PM	24	14	16	11	65
7:00 PM	25	14	16	15	70
8:00 PM	20	14	16	15	65
9:00 PM	21	14	16	15	66
Peak Demand (spaces)					
Average Peak	25	14	27	15	70
With Reductions*	18	11	19	15	56

* Linked trip reduction (20%) applied to High-Turnover Restaurant, Daycare, and General Office Building land uses. Multimodal trip reduction (10%) applied to High-Turnover Restaurant and General Office Building land uses.

Table 3. Hourly Parking Demand by Land Use and Site Total - 85th Pctl.

Hour	Land Use				
	932	565	701	931	Site Total
Hourly Demand (spaces)					
5:00 AM	1	17	6	4	28
6:00 AM	1	17	6	4	28
7:00 AM	1	17	6	4	28
8:00 AM	1	17	21	4	43
9:00 AM	1	17	30	4	52
10:00 AM	2	17	33	4	56
11:00 AM	5	17	33	4	59
12:00 PM	14	17	32	10	73
1:00 PM	11	17	32	11	71
2:00 PM	8	17	33	8	66
3:00 PM	6	17	33	5	61
4:00 PM	6	17	30	5	58
5:00 PM	17	17	19	8	61
6:00 PM	27	17	19	14	77
7:00 PM	29	17	19	20	85
8:00 PM	23	17	19	19	78
9:00 PM	24	17	19	19	79
Peak Demand (spaces)					
85th Pctl. Peak	29	17	33	20	85
With Reductions*	21	14	24	20	69

* Linked trip reduction (20%) applied to High-Turnover Restaurant, Daycare, and General Office Building land uses. Multimodal trip reduction (10%) applied to High-Turnover Restaurant and General Office Building land uses.