Transportation Analysis
for
MERITER HOSPITAL
Park Street Campus Expansion

OCTOBER 6, 2008

Schreiber | Anderson Associates, Inc.

Project Number 2326

TABLE OF CONTENTS

LIST OF EXHIBITS

1. Introduction and Executive Summary

Meriter Hospital is proposing to expand its Park Street Campus. The hospital is located on the west side of Park Street south of Regent Street as shown in **Exhibit 1.1**. The campus is developing a master plan which will lead it through a major expansion over the next 10 years. The major components of the expansion include the addition of a medical office building and parking to the Braxton Parking Lot site, renovation and additions to the Longfellow building with parking, expansion of the existing medical lab building and construct a new McConnell Hall that will include parking and offices. The full realm of the scheduled improvements is shown in **Exhibit 1.2**. As a part of these improvements, the total square footage of the campus will be expanded from approximately 1,026,000 square feet to 1,220,000 square feet, an increase of approximately 200,000 square feet. In addition, on-site parking will be expanded from the current 1,530 spaces to 2,696 spaces. The proposed additions will accommodate critical care, ambulatory care, diagnostic space, shell/flex space, new patient rooms and office space.

In order to accommodate this growth, improvements to the transportation system will be required. These improvements will include expansion of the current Transportation Demand Management System in order to reduce the number of employee auto trips, additional turn lanes at intersections to facilitate turning movements and traffic operations, and the introduction of traffic calming measures on Brooks Street to reduce vehicular/pedestrian conflicts. While not a part of the Meriter project, it is also assumed that the city will implement its plans to widen Regent Street on the south side to accommodate an additional travel lane at the Park Street and Brooks Street intersections.

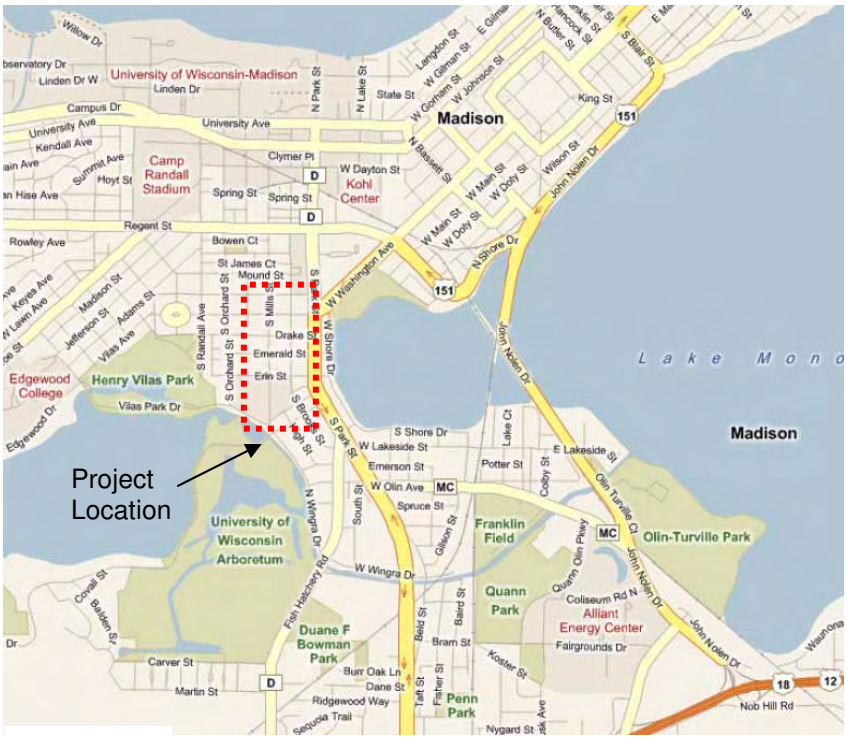


Exhibit 1.1

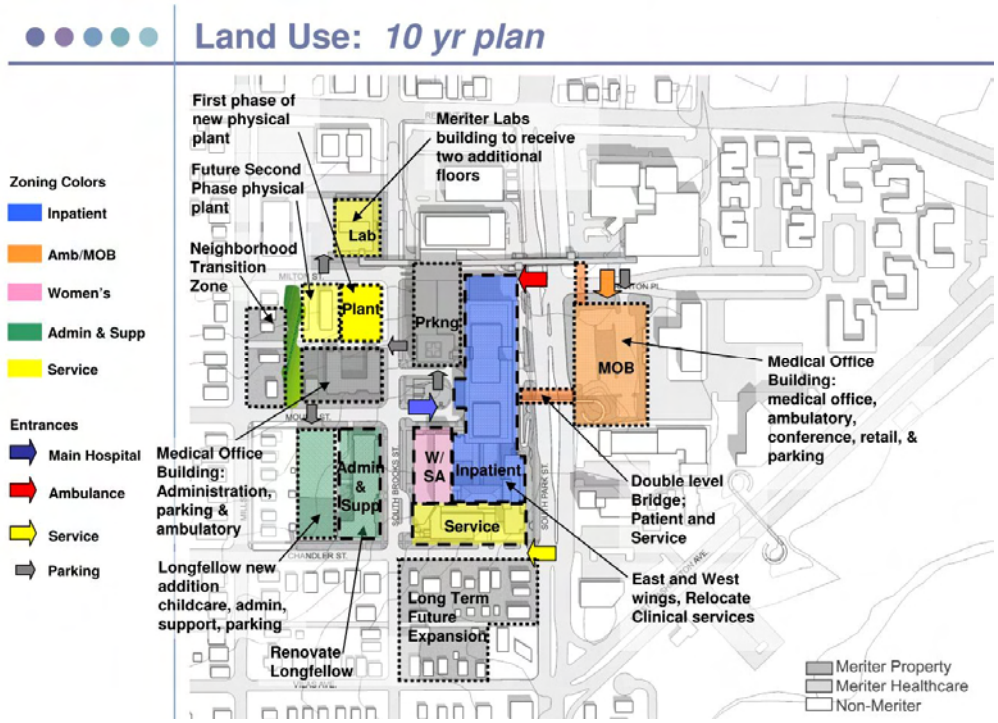


Exhibit 1.2

2. Existing Conditions

2.1 Bike, Pedestrian, Transit, and Transportation Demand Management (TDM)

Located in the urban core of the city, Meriter has a number of transit routes serving the area as shown in **Exhibit 2.1**. This includes three bus routes on Park Street, three routes on Regent Street, and two routes on Brooks Street. Based on the most recent data, an estimated 400 of the current 3,000 employees have an employer sponsored bus pass. Meriter currently provides discounted bus passes to its employees and is working with Madison Metro to expand that to providing free bus passes to all its employees.

Meriter also promotes bike ridership. They provide bike racks for up to 126 bikes at various locations on the map as shown in the attached figure. Current bike parking areas, sidewalks, and crosswalks are shown in **Exhibit 2.2**.

Meriter does charge its employees for parking in its private parking areas. As an incentive to park outside the hospital area, Meriter does provide free parking at its remote lot on Wingra Drive. As part of this service, free shuttle connections are provided to the main campus.

In 2005 Meriter completed a Transportation Demand Management Study (TDM) with the intent of outlining a strategy for reducing the number of vehicle trips to its facility. The TDM accomplishes this goal by either reducing the number of vehicle trips or switching them to other modes of transportation such as transit. Meriter has adopted a TDM program that includes the following measures.

- Employees are charged a parking fee and must obtain a permit to park on campus. Permits can be paid through payroll deduction and the current fee ranges from $15 to $30 per month.

- Meriter helps subsidize the cost of employees purchasing bus passes. The amount of subsidy currently ranges from 25% to 35% of the actual cost of the pass. Approximately 400 employees presently participate in the program. The hospital and Madison Metro Transit have negotiated an agreement to issue free bus passes to all employees. It is anticipated that the free bus pass program will be implemented in 2009 and will increase employee transit usage.

- Meriter provides bike parking, lockers, and shower facilities for employees. There are currently 133 bike parking spaces on campus. 12 of these spaces are lockers and 66 are covered from the weather. Shower facilities are located in the hospital, Longfellow Hall, and McConnell Hall.

- Meriter provides on-site day care. The current enrollment is 135 children with another 50 children on the waiting list.

- Meriter has developed its own ride share sourcenet program. Employees are now able to post their ride share requests on the Meriter internal website.

- Meriter provides free remote parking space and a free shuttle connection service. The remote lot is on West Wingra Drive and contains 108 stalls. Parking is free and there is a free shuttle connection between the lot and the Meriter campus.

- Meriter is planning to relocate 300 employees to the Novation Center Campus on Rimrock Road and the Beltline. This will reduce the number of employees that need to commute into the downtown on a daily basis.

- Meriter has staggered shifts for its employees that fall outside the traditional morning and afternoon hour commuter rush hours. Currently, the first shift at the hospital starts at 7:00 a.m. before the peak hour of 7:30 a.m. and ends at 3:30 p.m. which is an hour before the 4:30 p.m. peak hour.

- Meriter has established an internal TDM committee. This committee meets on a regular basis and reviews TDM policy and programs.

2.2 Existing Traffic

The Meriter campus is located at the juncture of two major arterials, Park Street and Regent Street. Both of these arterials provide direct connection to the external and internal Madison street system. The internal campus street network consists of a grid system of neighborhood streets. Existing roadway geometrics, traffic control, and daily traffic volumes are shown in **Exhibit 2.3**. Based on 2007 daily traffic counts, volumes on the major corridors include 30,000 ADT on Regent Street, 26,000-47,000 ADT on Park Street, 6,000 to 8,400 ADT on Mills Street, 6,200 ADT on Brooks Street and 4,900 ADT on Vilas Avenue. Traffic signals are located on the periphery of the campus along Regent Street and Park Street at major access points. The internal roadway system is controlled by stop signs. **Exhibit 2.2** also shows the on-street parking areas as well as the off-street parking areas. Street widths in the area vary from 60 plus feet on Park Street to 52 feet on Regent Street and 30 to 32 feet on the neighborhood streets.

Peak hour traffic counts were taken at each major intersection in the area. These included both the major intersections along the Park and Regent corridor as well as those within the campus that will see the major impact of additional off street parking identified in the master plan. The traffic counts were taken in the afternoon peak hour between 4:30 and 5:30 p.m. at eight intersections which included the following:

- Regent and Mills (signalized)

- Regent and Brooks (stop sign)

- Regent and Park (signalized)
- Park and Braxton (signalized)
- Park and Chandler (stop sign)
- Brooks and Milton (stop sign)
- Brooks and Chandler (stop sign)
- Brooks and Vilas (stop sign)

These peak hour traffic counts and locations are shown in **Exhibit 2.4**. Three of the intersections are signalized. They include: Regent/Mills, Regent/Park, and Park/Braxton. The remaining five intersections are stop controlled in one direction. For the signalized intersections, the signal operations for these intersections were obtained from the City of Madison Traffic Engineering. Four of the intersection counts were taken in 2008 and four were taken in 2003. The 2003 counts were factored to 2008 using a 1% per year annual increase.

Using the guidelines set forth in the Highway Capacity Manual (HCM), the existing traffic and geometric conditions were analyzed for traffic operations using both HCS software and Synchro software. **Exhibit 2.3** shows the existing intersection geometry conditions used in the analysis. **Exhibit 2.5** summarizes the results in terms of the Level of Service Analysis (LOS). The signal timing was provided by the city of Madison for all three traffic signals. They were optimized utilizing the existing phasing at each signal and the existing cycle length which varies between 70 and 95 seconds.

Exhibit 2.5 - 2008 Intersection Analysis

			Level of Service per Movement by Approach											
	Traffic	Peak	Southbound			Westbound			Northbound			Eastbound		
	Control	Hour	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT
Regent Street & Brooks Street	Stop Sign	PM	**F**		B	B			F		C	B		
Regent Street & Park Street	Traffic Signal	PM	B	B	B	B			**F**		B	**F**		
Park Street & Braxton Place	Traffic Signal	PM	B	A		D	-	C			B	-	C	C
Regent Street & Mills Street	Traffic Signal	PM	C		C	B			C		C	A		
Brooks Street & Milton	Stop Sign	PM	A			B			A			A		
Brooks Street & Chandler Street	Stop Sign	PM	B			A			B			A		
Brooks Street & Vilas Street	Stop Sign	PM	B			A			B			A		
Park Street & Chandler	Stop Sign	PM				**F**			B			C		

Note: (-) indicates a movement that is not possible.

As shown in **Exhibit 2.5**, there are some movements that operate below acceptable levels. An acceptable level is generally considered to be at an LOS D or better. The northbound and southbound Brooks Street combined left turn and through movements at Regent operate at LOS F. (Note that the northbound and southbound approaches on S. Brooks Street is not marked with a separate right turn lane, but it operates as such. This situation was represented in the analysis.) The Park Street eastbound and northbound left

turn also operate at an LOS F. Finally, the westbound approach at Chandler operates at an LOS F. Other movements operate at acceptable levels.

- Level of Services (LOS) is a quantitative measure that refers to the overall quality of flow at an intersection ranging from very good, represented by LOS 'A', to very poor, represented by LOS 'F'. Descriptions of the various levels of service are presented in Appendix A.

- In addition to the LOS analysis, the queue length (95th percentile) at each of the existing intersections was also reviewed. Of note was the WB queue length at Regent and Mills which is 355 feet, almost backing up through the Brooks Street intersection. The Park and Regent intersection had the longest queue lengths. The EB through lane is 600 feet, which backs up thru the Brooks Street intersection during the peak hour. The northbound left turn lane also has an extensive queue length but this is minimized by the restriction on left turn lanes at Braxton which allows the inside lane to function as a left turn lane through the Braxton intersection providing more than adequate storage length. At Braxton and Park, the WB left turn lane does indicate a queue length of 170 feet which would put it at about the current parking lot drive location.

2.3 Existing Parking

There are currently 1,530 parking spaces distributed among seven different parking ramps and lots on campus and one remote parking area as shown in **Exhibit 2.6.** The Park Street structure is the primary parking facility for the Meriter Campus. The access to the structure is from the main hospital entrance on S. Brooks Street. Lower levels are accessed from S. Brooks Street and Park Street via the emergency entrance. Dividers restrict access between the bottom two levels and the upper levels of the parking facility. The remaining six parking areas on the campus are all surface lots and access either Park Street or Mound Street.

Exhibit 2.6 - Meriter Park Campus Existing Parking Summary

Number	Facility		Parking
1	One South Park		196 spaces
2	General Medical Laboratories (GML)		30 stall surface parking lot
3	Longfellow School Lot		60 stall surface parking lot
4	McConnell		15 stall surface lot
5	Braxton Lot		139 stall surface parking lot
6	Hospital		932 stalls
7	Wingra Lot (remote)		108 are Meriter with shuttle service
8	21 N. Park		50 spaces
	Total		1,530 spaces

The current parking ratio to floor area is 1.5 spaces per 1,000 square feet or .5 spaces per employee. The recommended ratio for urban hospitals based on Institute of Transportation Engineers (ITE) recommendations is .72 spaces per employee.

Exhibit 2.7 shows a summary of the parking demand for all the Meriter Campus lots and main structure during February, March, and April 2003. The data were collected by Meriter during the peak demand hour for parking, approximately 11:00 AM – 12:00 PM. This represents the highest use of the parking facilities when outpatients are checking in and physicians are examining patients.

Generally, a parking structure is considered at capacity when approximately eighty-five to ninety percent of the total structure is filled. This prevents extensive searching through a structure for a limited number of open stalls. This study uses 90% for parking. The higher figure for reserved and employee parking reflects these users' general trend to park in approximately the same location every day, thereby reducing search time.

Peak demand was calculated using the average of the demand for the days with the top 10% actual demand as shown in **Exhibit 2.7**. The average demand is also shown for comparison. The peak demand is used for calculating future demand to provide capacity for all but the worst demand conditions.

Exhibit 2.7 - Summary of Existing Campus Parking Demand

Parking	Capacity	Practical Capacity as a % of Capacity	Practical Capacity	Peak Demand	Average Demand
Total:	**1,530**	**90%**	**1,377**	**1,432**	**1,267**

Exhibit 2.7 shows that all facilities are currently at or near capacity (with the exception of the remote facility). Based on employment at the time of this study (1,892 employees) and the parking supply (1,480 spaces), the parking ratio at the time of the study was .78 spaces per employee. Since this study was done five years ago the hospital has marginally expanded its parking to 1,530 spaces while its employment has jumped to 3,085. This gives the hospital a current parking ratio of .5 spaces per employee, well below both the national average ratio and the measured ratio at the hospital five years ago. This indicates that the hospital is currently well under parked as compared to five years ago and comparative similar facilities in other communities.

3. Future Conditions

Future conditions were analyzed to assess the impacts to transportation and parking in the future based on the Master Plan. The Master Plan consists of a 10 year plan. The future year used for the transportation analysis was 2018, which assumed that all development shown in the master plan is completed.

To estimate the future transportation and parking demand, two sets of data were projected to provide a growth rate for these needs. These data included the number of employees and the increase in building area. These projections are shown in **Exhibit 3.1**.

Exhibit 3.1 - Meriter Growth Factors

Factor	Existing (2008)	Future (2018)	Overall Growth
Employees	3,085	3,335	10%
Building Area (ft^2)	1,026,125	1,219,625	17%

Employee growth is based on data collected from Meriter projected through 2018. Meriter estimated the future growth of employees (as full time equivalents or FTEs) from 2008 to 2018 to be 50 per year or 500 employees within a 10 year period. The 2018 projection includes a deduction for the 250-300 employees that are scheduled to be moved off campus to the Novation Center. The building area is based on the gross square footage of new construction, based on the master plan, and does not include areas that are being remodeled.

3.1 Bike, Pedestrian, and Transit

One of the goals of the Meriter Master Plan is to make the campus more pedestrian and user friendly. To this end, the intent is to encourage employees to reduce their auto use and to also encourage both employees and visitors to park their automobiles in one of the designated campus parking areas on the campus and walk within and between campus destinations. Based on ITE trip generation rates shown in **Exhibit 3.4,** it is estimated that there will be 3,500 trips generated by the hospital during the afternoon peak hour. The goal of the hospital is to have 5% of those trips, or 180 trips, use alternative modes of transportation including rideshare and the remote parking lot.

In order to accomplish this goal the hospital has identified the following targets:

- Add additional bike parking facilities
- Subsidize transit ridership
- Facilitate pedestrian access throughout the campus

3.2 Traffic

To estimate the background traffic, the existing volumes taken in 2008 were projected using a 1% annual growth rate through 2018. A review of historic traffic volume trends for the streets in the area show that they have increased at the rate of .9% to 2.2% per year over the last 20 years. The internal streets show a higher growth rate than the major streets. The year 2013 background traffic volumes are shown in **Figure 3.2** and those for 2018 are shown in **Figure 3.3.**

Park Street reconstruction began in 2007 and is expected to continue through 2010. This reconstruction will be completed by the city of Madison with the cross-section of Park Street along the Meriter Campus having already been completed. The new Park Street cross-section now includes two general use lanes with a bike lane in each direction. The northbound left turn lane at Park & Regent Streets has been extended through the Park Street and Braxton Place intersection.

A. Trip Generation and Distribution

The additional trips generated by the campus expansion were developed based on the ITE trip generation rates for hospital facilities. The trip generation rates are shown in **Exhibit 3.4** for both the AM and PM peak hours. The results show an estimated additional trip generation of 288 trips during the AM peak hour and 316 during the PM peak hour based on the increase in square footage. These trips were distributed over the network as shown in **Exhibit 3.5.** As a verification of the basis for this distribution, a comparison was made of the distribution of trips from a 2005 parking study for the expansion of the Braxton Parking Lot. This study found that the Braxton Parking Lot would generate about 30% of its capacity during the PM peak hour. Assuming that this applied to all three new parking areas, the total projected increase in trips, based on this methodology, was 344 additional trips. Based on a comparison of these two methodologies of trip generation, it was found that there was a 9% difference in trip generation between the ITE methodology and that employed in the earlier parking study which was considered acceptable. Based on this comparison, each of the new parking areas PM trips were distributed based on their proportionate share of the parking supply. These trips were also loaded at the assumed entrance/exit of the new parking ramp locations.

Exhibit 3.4 - Meriter Hospital Trip Generation

Proposed Development									
Land Use	**Peak Hour Trip Generation Rate**			**AM**		**PM**		**Saturday**	
				IN	**OUT**	**IN**	**OUT**	**IN**	**OUT**
Hospital (Code 610) 200,000 sf	Weekday AM Peak 1.47 trips per 1,000 sf	Weekday PM Peak 1.61 trips per 1,000 sf	Saturday Peak 2.26 trips per 1,000 sf	63%	37%	38%	62%	50%	50%
Hospital Generation	294	322	452	185	109	122	200	226	226
Total Trips Generated	294	322	452	185	109	122	200	226	226
Internally Captured	0	0	0	0	0	0	0	0	0
Net External Trips	294	322	452	185	109	122	200	226	226
(2%) Alternate Modes	6	6	9	4	2	2	4	5	5
Net External Vehicle Trips	288	316	443	182	107	120	196	221	221
Pass-By Trips	0	0	0	0	0	0	0	0	0
Total New Trips on Adjacent Street	288	316	443	182	107	120	196	221	221

Source: ITE Trip Generation, 7th Edition, 2003 6/2/2008

While the goal of the Meriter TDM is to reduce the number of auto trips by 5%, for the purposes of this analysis, a more conservative 2% was assumed in the trip generation projections. This assumption provides a worse case scenario in the traffic analysis.

B. Level of Service Analysis

An analysis was completed for both 2013 and 2018 with and without the additional Meriter development for the study area. This analysis assumed a 10% increase in existing traffic volumes and also assumed no additional improvements to the existing roadway system other than that currently in place. The results of the analysis are summarized in the following Exhibits**.** **Exhibit 3.6** shows the 2018 LOS for the background traffic only**.** This does not include any new traffic from the Meriter development or the addition of any improvements.

The intersection LOS remains the same for most intersections with no significant further deterioration of the LOS.

Exhibit 3.6 - 2018 Background Traffic Conditions Intersection Analysis

	Traffic	Peak	Level of Service per Movement by Approach											
			Southbound			Westbound			Northbound			Eastbound		
	Control	Hour	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT
Regent St. & Brooks St.	Stop Sign	PM	**F**		B	B			**F**		C	B		
Regent St. & Park St.	Traffic Signal	PM	B	B	B	C			**F**	B		**F**		
Park St. & Braxton Place	Traffic Signal	PM	C	A		D	-	C	-	C		-	C	
Regent St. & Mills St.	Traffic Signal	PM	D	D	C	B			C	C		A		
Brooks St. & Milton	Stop Sign	PM	A			B			A			B		
Brooks St. & Chandler St.	Stop Sign	PM	B			A			B			A		
Brooks St. & Vilas St.	Stop Sign	PM	C			A			B			A		
Park St. & Chandler	Stop Sign	PM	B			**F**			B			D		

Note: (-) indicates a movement that is not possible.

As shown in **Exhibit 3.6** no additional movements have been reduced below an LOS D as compared with the 2008 LOS.

For the 2018 Total Traffic conditions, the projected Meriter traffic was added to 2018 background traffic. The 2018 Total Traffic conditions were analyzed assuming improvements to the roadway system that are shown in the recommended improvements in **Exhibit 4.1.** These improvements include the widening of Regent Street at Brooks Street and Park Street, restriping Regent and Mills, restriping and widening Chandler at Park. **Exhibit 3.7** summarizes the results of the 2018 Total Traffic intersection analysis.

Exhibit 3.7 - 2018 Total Traffic Intersection Analysis w/Improvements

	Traffic	Peak	Level of Service per Movement by Approach											
			Southbound			Westbound			Northbound			Eastbound		
	Control	Hour	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT
Regent Street & Brooks Street	Stop Sign	PM	**F**		B	B			**F**		C	B	B	
Regent Street & Park Street	Traffic Signal	PM	B	B	B	B	C		**F**	B		C		
Park Street & Braxton Place	Traffic Signal	PM	C	A		D	-	C	-	C		-	-	C
Regent Street & Mills Street	Traffic Signal	PM	D	D	C	B			D	C		A		
Brooks Street & Milton	Stop Sign	PM	A			B				A		B		
Brooks Street & Chandler Street	Stop Sign	PM	B			A			B			A		
Brooks Street & Vilas Street	Stop Sign	PM	C			A			B			A		
Park Street & Chandler	Stop Sign	PM	C			**F**			B			**F**		C

Note: (-) indicates a movement that is not possible.

Exhibit 3.7 shows that with the added improvements several intersections operate at an improved LOS. These intersections include the Regent/Park Street intersection which operates at an improved LOS for the eastbound approach and the Park/Chandler intersection which now operates at an improved LOS for the EB right turn.

Several of the intersection queue lengths also improve with the improvements. The EB movement at Regent and Park is reduced from 600 to 400 feet and the WB through increases from 300 to 400 feet. The NB left turn movement remains about the same as in 2008. The WB queue at Braxton and Park increases from 170 feet to 240 feet which puts it beyond the existing drive entrance.

C. Traffic Findings

Several movements under existing traffic conditions (2008) operate at LOS E or worse:

- The southbound approach at Regent Street & Brooks Street
- The northbound left at Regent Street & Brooks Street
- The eastbound approach at Regent Street & Park Street
- The westbound left at Chandler and Park Street

Under the 2018 total scenario, with the improvements to Regent Street, the LOS for the Regent/Park Street intersection does improve. However, the following intersections still indicate an LOS below D:

- The southbound left & through at Regent St. & Brooks St.
- The northbound left & through at Regent St. & Brooks St.
- The northbound left at Regent St. & Park St.
- The westbound approach and eastbound left and through at Chandler and Park St.

3.3 Parking

The proposed parking supply that is part of the master plan is shown in **Exhibit 3.8**. It increases the employee to parking space ratio from its current .5 spaces per employee to .8 spaces per employee which is more in line with the recommended national standard as well as the measured parking demand at the hospital from previous parking studies.

The expansion in parking facilities will be focused in three areas with a total of 1,166 new parking spaces. The majority of these spaces will be at the Braxton lot which will increase from its current 139 spaces to 680 spaces and at McConnell Hall which will increase from 15 spaces to 600 spaces. The third expansion area is the Longfellow Building which will increase from 60 to 100 spaces. The location of the additional parking areas is critical to minimizing the impact of additional traffic on the neighborhoods. The Braxton lot accesses almost directly onto Park Street and has virtually no impact on the neighborhood streets. The McConnell parking expansion accesses onto Brook Street via St. James Court. North bound traffic will use Brooks Street to access Chandler. Southbound and westbound traffic will access the signal at Mills Street and Regent. To access this signal traffic will only need to travel one block of Mills by accessing it via Milton Street.

Exhibit 3.8 - Meriter Park Campus Future Parking Summary

Number	Facility		Parking
1	One South Park		196 spaces
2	General Medical Laboratories (GML)		30 stall surface parking lot
3	Longfellow School Lot		**100 spaces**
4	McConnell		**600 spaces**
5	Braxton Lot		**680 spaces**
6	Hospital		932 stalls
7	Wingra Lot (remote)		108 are Meriter with shuttle service
8	21 N. Park		50 spaces
	Total		2,696 spaces

4. Recommendations

4.1 TDM Recommendations

Increase the use of Transportation Demand Management (TDM) practices. Such practices include, but are not limited to:

- Increase transit usage
  - Meriter currently offers substantially-discounted Madison Metro bus passes to all employees, regardless of FTE status.
  - Approximately 400 Meriter employees currently purchase discounted bus passes.
  - Meriter is currently working with Madison Metro to provide free bus passes to its employees. This program is expected to be implemented in 2009.
  - Provide additional transit shelters on Park Street.
- Encourage the use of the Wingra Parking Lot
  - Meriter employees assigned to the Wingra Lot do not pay any parking fees and they are shuttled to the Park Campus at no cost to them. While many Wingra parkers find the arrangement to be inconvenient, the “no cost” feature could be more actively marketed internally to encourage more employees to inquire about off-site parking.
- Increase the parking structure fees
  - Meriter is currently reviewing proposals to increase its parking fees for both employees and visitors/patients. Meriter provides free remote lot parking with shuttle service.
- Discourage on-street parking by Meriter employees
  - While there is no way to accurately document the extent of the problem, a number of Meriter employees currently park on the street in 2-hour only spaces. This generates consistent concerns/criticisms from residents who need to park in the neighborhood.

  - Meriter should increase internal marketing efforts to discourage this employee practice.

  - Increase the use of bicycles

  - Improve bicycle wayfinding on campus and linkages to the major city bike paths.

  - Provide additional bike parking. The hospital will be adding 50 bike racks on the campus in 2009 and 2010.

- Encourage pedestrian usage throughout the campus

  - Reconstruct portions of Brooks Street to provide more pedestrian friendly crossing opportunities. This would include colored cross walks, table tops and narrowed street sections.

  - Provide pedestrian countdown signal heads at major pedestrian crossings on Park and Regent Street.

  - Construct a new pedestrian walkway linking the future Braxton Parking Lot expansion with the hospital. Evaluate the need for the existing pedestrian crossing and remove if not needed.

  - Provide wider sidewalks (8-10 feet) on Brooks Street.

4.2 Traffic Recommendations

The traffic analysis indicates that there will be a number of improvements needed to the local roadway system in order to accommodate the projected growth. These improvements include the following:

- An additional eastbound lane on the south side of Regent from Brooks to Park Street. While this is shown as an improvement, it is outside the Meriter property and is assumed to be an independent city project.

- The addition of a new SB lane on Regent will also provide a pedestrian refuge island at the intersection of Brooks and Regent.

- Designate left/through and right turn lanes NB and SB on Mills Street at Regent.

- A separate right turn lane for Chandler EB at Park Street.

- Provide traffic calming measures on Brook Street through the campus.

4.3 Parking Recommendations

Based on the current parking supply and demand, additional parking is needed on the campus. The current parking ratio of .5 spaces per employee does not adequately provide for existing demand, much less future demand. The scheduled increase in parking will bring the parking ratio up to a more acceptable level of .72 spaces per employee.

- Parking should be distributed throughout the campus and not focused in any one area.
- Additional parking ramps should be placed to minimize the impact on existing neighborhood streets.
- Increase the parking supply to a more acceptable employee to parking space ratio.

- Increase fees for employee parking.
- Continue to discourage parking in the residential neighborhoods.

The recommendations for parking and traffic are shown in **Exhibit 4.1.**

4.4 Improvement Phasing

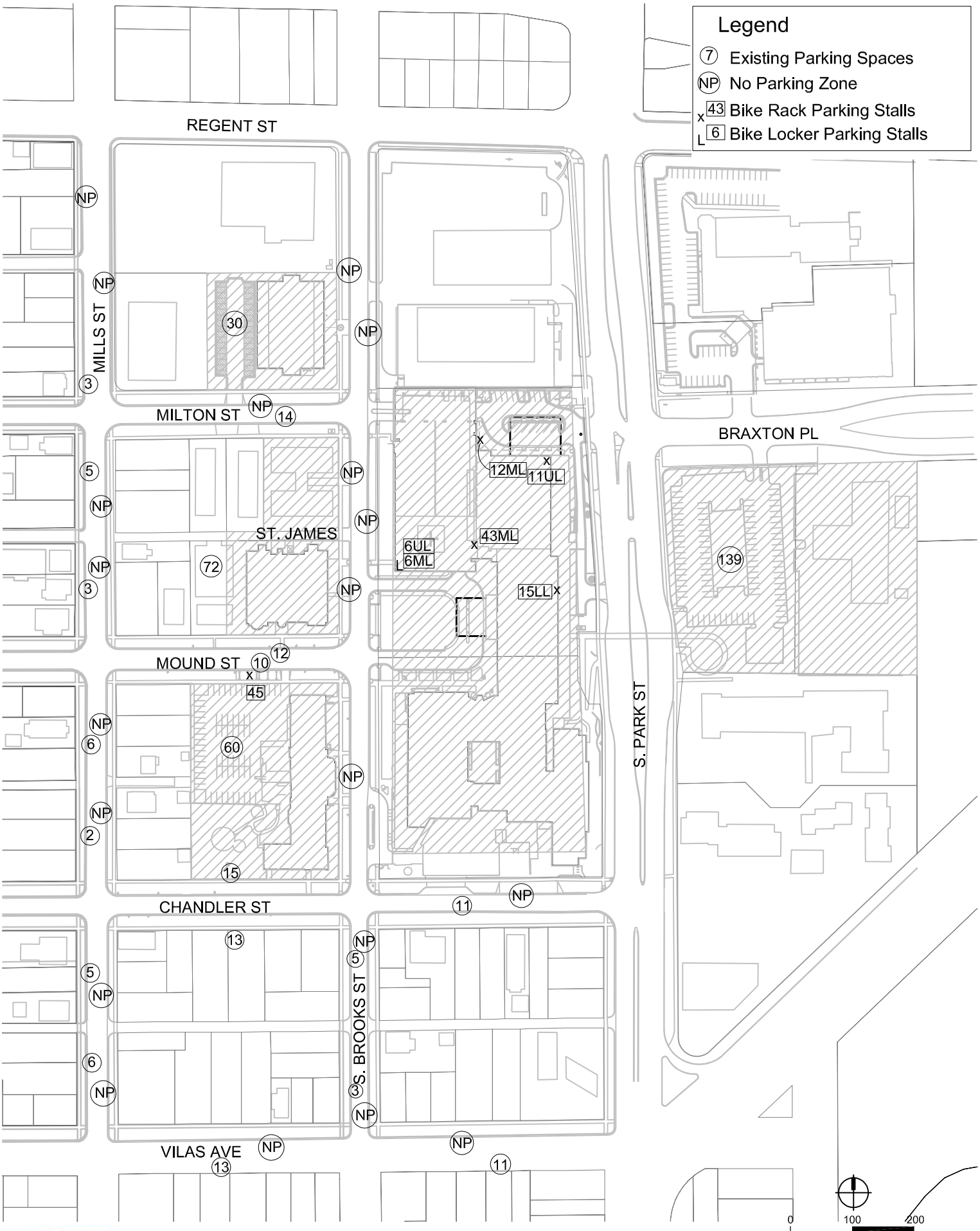
Campus improvements will be constructed over a 10 year period. The first phase of improvements will be the construction of the traffic calming and pedestrian measures on Brook Street. These are anticipated to be implemented within the next year or two. The second phase of improvements will be the construction of the Braxton medical office building and parking on Park Street. This will be completed within the next three to five years. This will be followed by improvements to Longfellow and McConnell during the latter part of the 10 year master plan improvements. The additional parking will be phased in with the improvements. The TDM measures will be initiated through the duration of the project. The internal traffic measures (traffic calming and streetscaping on Brook Street) will be done in the first phase of the project. External traffic improvements (intersection widening and improvements to Park and Regent) are expected to be completed by the city during the third phase of the project.

Meriter Hospital Transportation Study

Existing Transit Service

June 2008
Project #2326

EXHIBIT 2.1

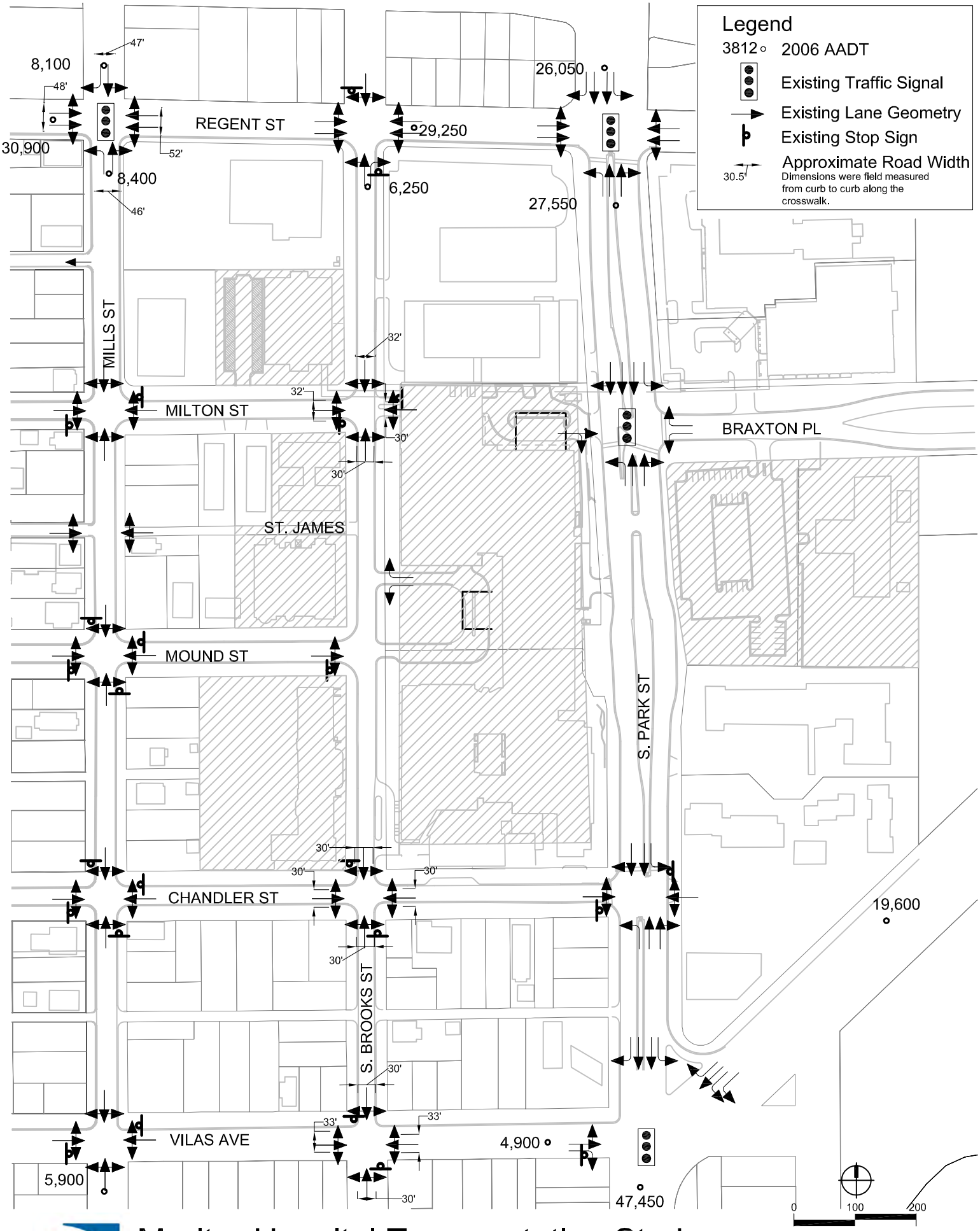


Meriter Hospital Transportation Study

Existing Bike, Pedestrian, and Parking Accommodations

June 2008
Project #2326

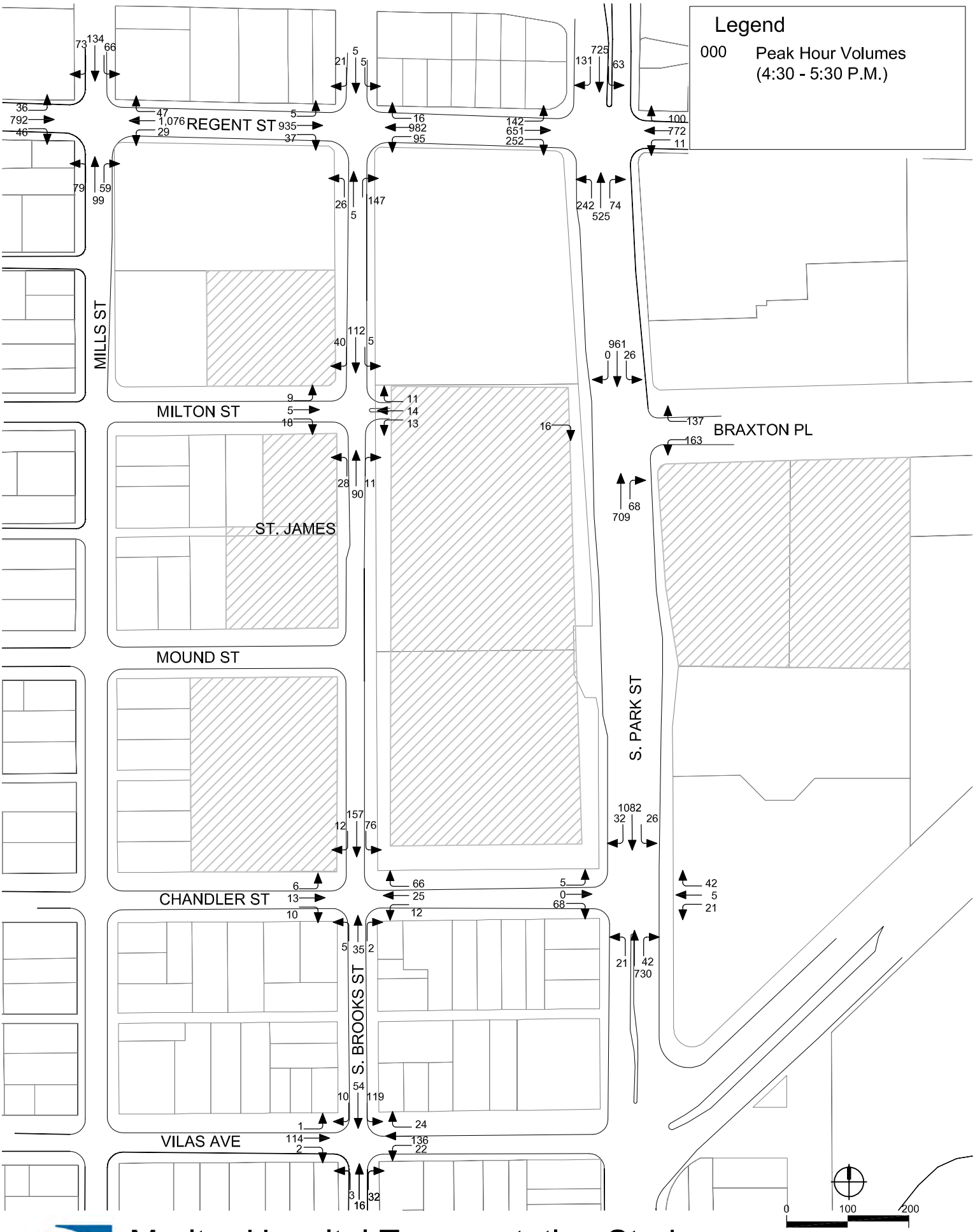
EXHIBIT 2.2



Meriter Hospital Transportation Study

June 2008
Project #2326

Existing Roadway Geometry, Traffic Control and Daily Traffic Volumes EXHIBIT 2.3



Meriter Hospital Transportation Study

2008 Peak Hour Traffic Volumes

June 2008
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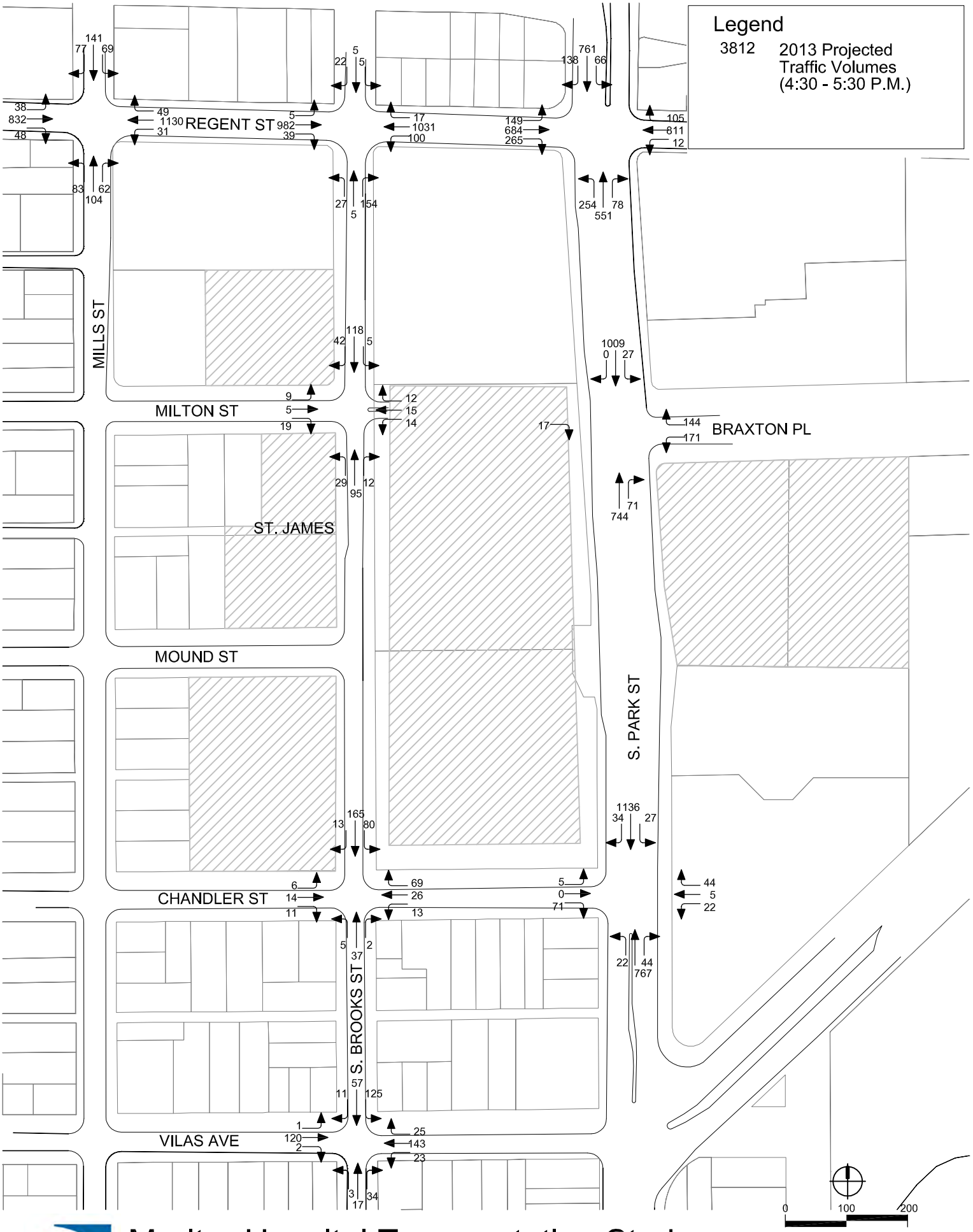
EXHIBIT 2.4



Meriter Hospital Transportation Study

2013 Background Traffic Projections

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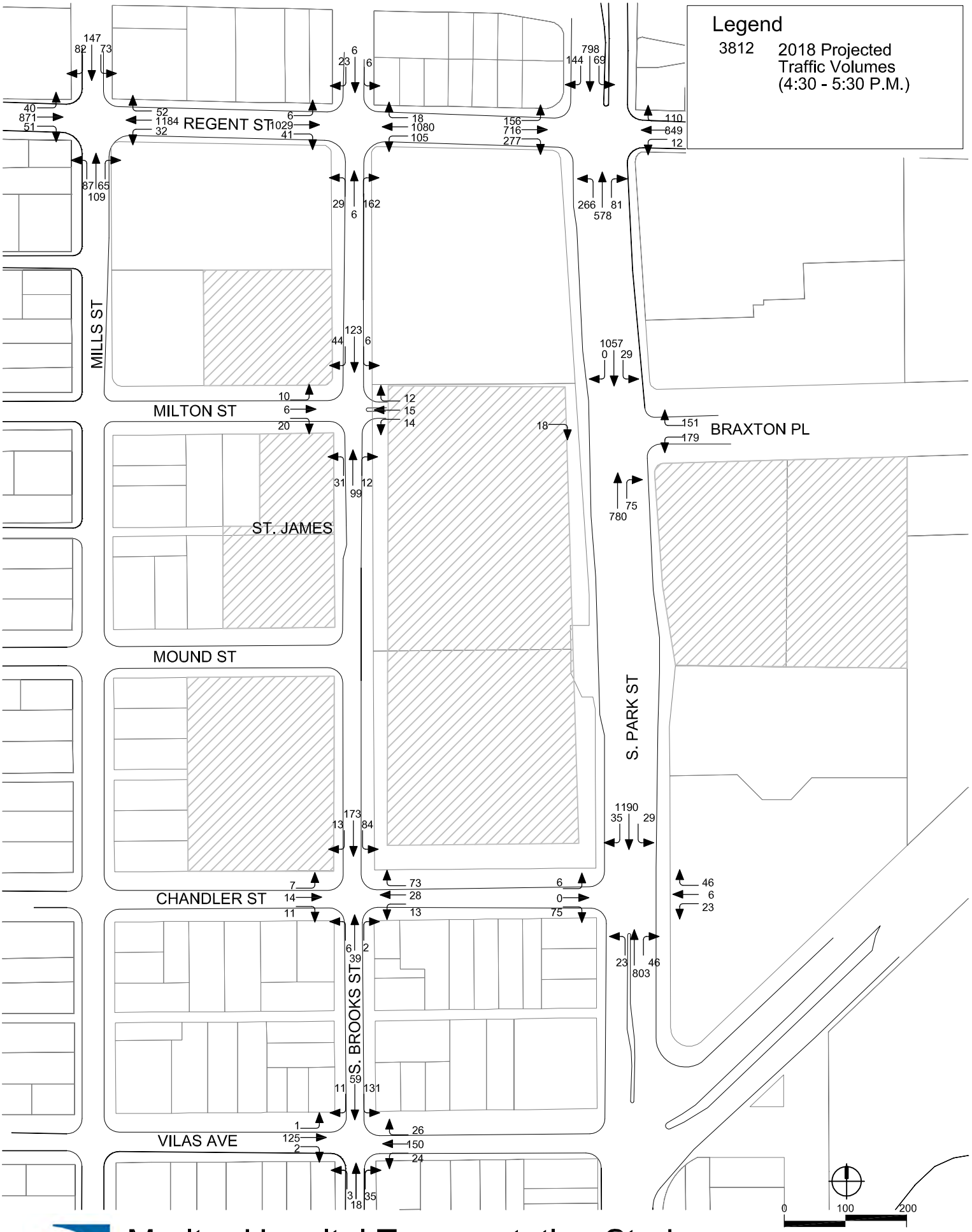
EXHIBIT 3.2



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2018 Background Traffic Projections

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EXHIBIT 3.3

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Trip Distribution

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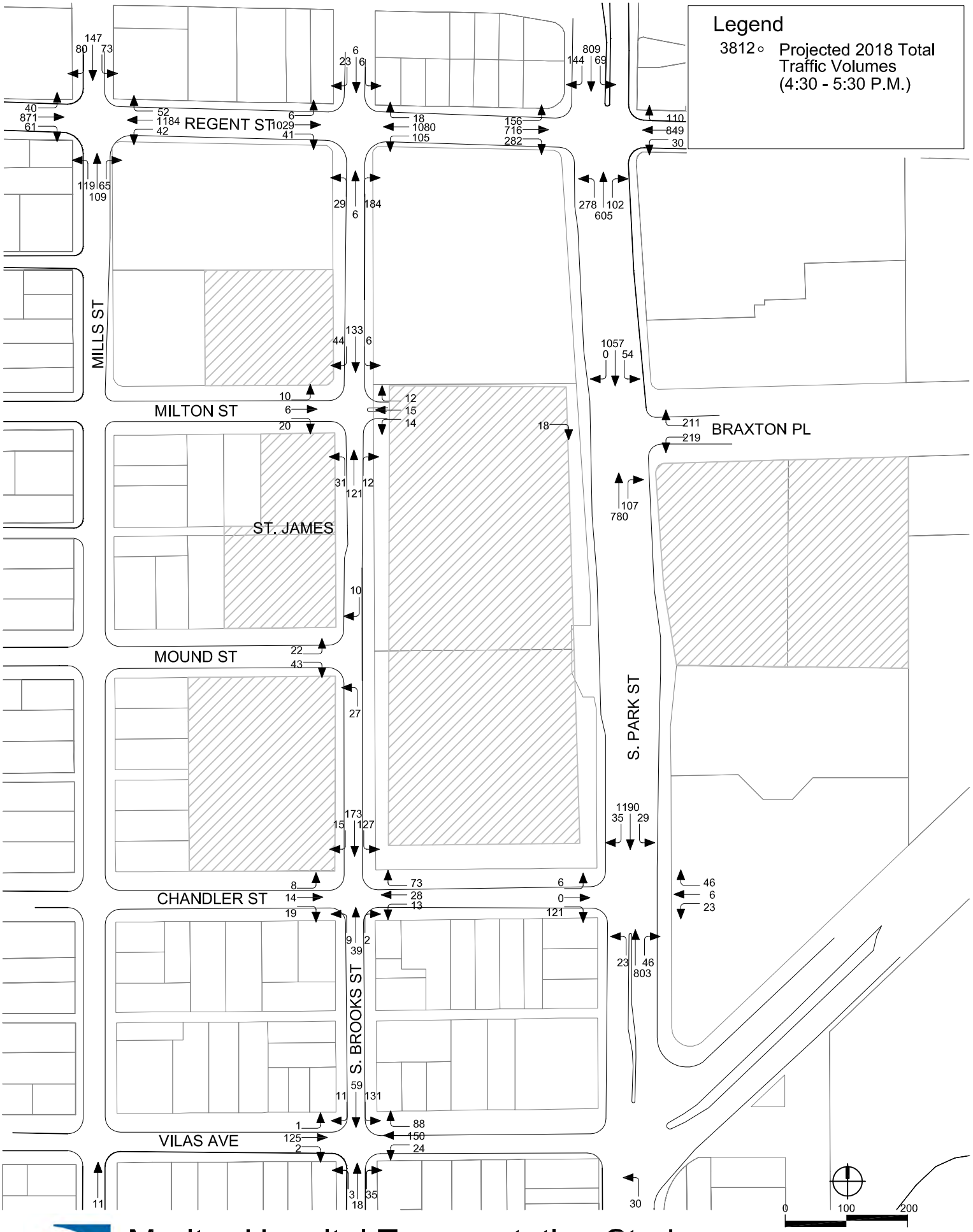
EXHIBIT 3.5



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2018 Total Traffic Conditions Intersection Analysis

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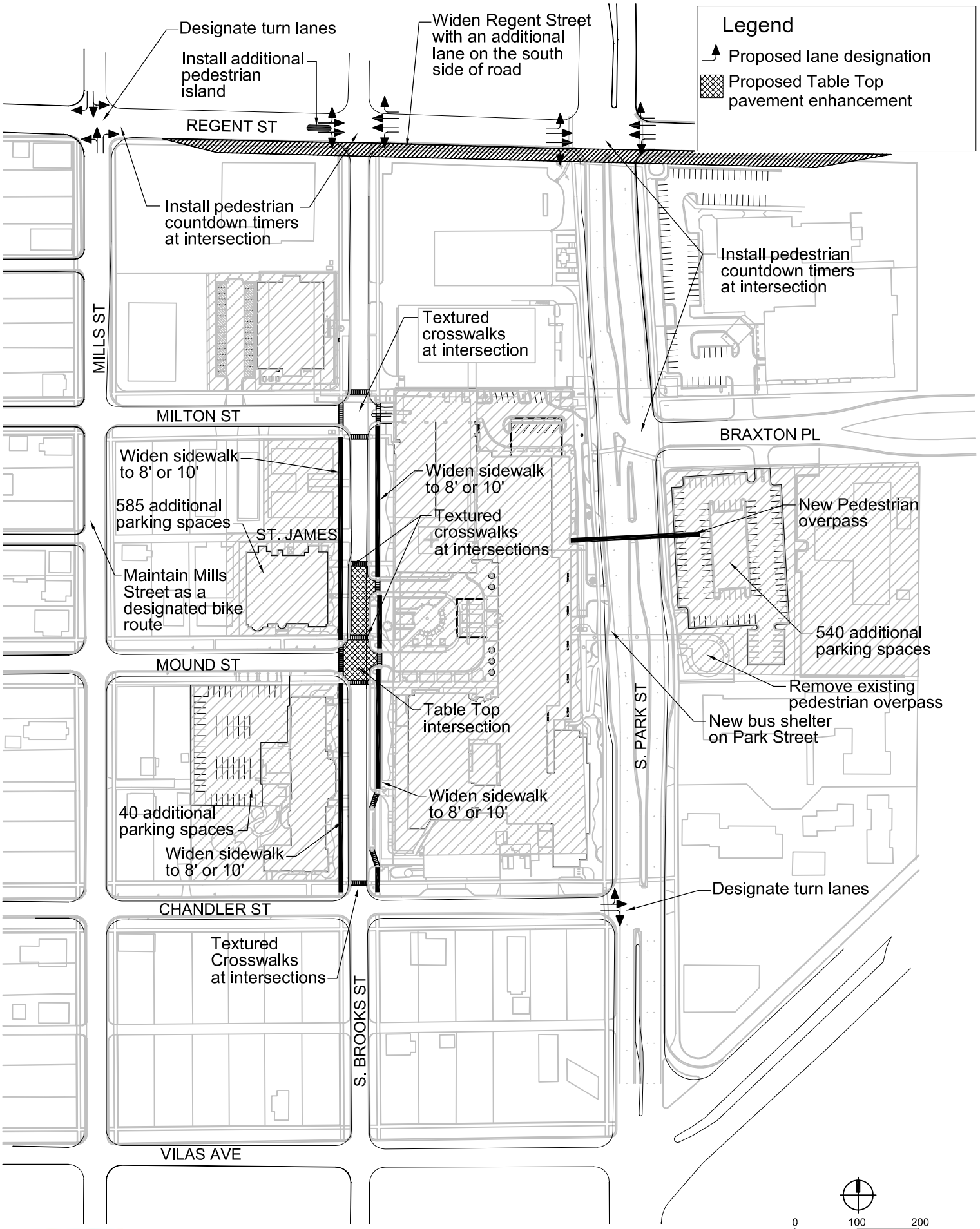
EXHIBIT 3.7



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Summary of Recommendations

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Project #2326

EXHIBIT 4.1

APPENDIX A

LOS A is the highest level of service that can be achieved. Under this condition, intersection approaches appear quite open, turning movements are easily made, and nearly all drivers find freedom of operation. At signalized intersections, average delays are less than ten seconds. At unsignalized intersections, average delays are less than ten seconds.

LOS B represents stable operation. At signalized intersection, average vehicle delays are ten to twenty seconds. At unsignalized intersections, average vehicle delays are ten to fifteen seconds.

LOS C still represents stable operation, but periodic backups of a few vehicles may develop behind turning vehicles. Most drivers begin to feel restricted, but not objectionably so. At signalized average vehicle delays are 20 to 35 seconds. At unsignalized intersections, average vehicle delays are 15-25 seconds.

LOS D represents increasing traffic restrictions as the intersection approaches instability. Delays to approaching vehicles may be substantial during short peaks within the peak period, but periodic clearance of long lines occurs, thus preventing excessive backups. At signalized intersections, average vehicle delays are 35 to 55 seconds. At unsignalized intersections, average vehicle delays are 25 to 35 seconds.

LOS E represents the capacity of the intersection. At signalized intersections, average vehicle delays are 55 to 80 seconds. At unsignalized intersections, average vehicle delays are 30 to 50 seconds.

LOS F represents jammed conditions where the intersection is over capacity and acceptable gaps for unsignalized intersections in the mainline traffic flow are minimal. At signalized intersections, average vehicle delays exceed 80 seconds. At signalized intersections, average vehicle delays exceed 50 seconds.