

memo

**Lake Drive (STH 32)
Edgewood Avenue to Kensington Boulevard
Village of Shorewood
Milwaukee County
ID 2225-13-00 (Design)**

Date: December 8, 2021
To: Christine Hanna, PE, Project Manager, Wisconsin DOT
Cc: Project Files
From: Neal Styka, PE, PTOE, RSP1 – Kapur & Associates, Inc.
RE: Lake Drive Parking Study

Project Background

To understand how existing parking is utilized along the 1.3-mile Lake Drive (State Highway 32) corridor from Edgewood Avenue to Kensington Boulevard in Shorewood, Milwaukee County, Wisconsin; Kapur conducted a parking study on behalf of the Wisconsin Department of Transportation (WisDOT). The scope of the study focused exclusively on parking demand and capacity.

Within the study area are Atwater Park and Atwater Beach, which are located on the east side of Lake Drive across from Capitol Drive. According to the Village of Shorewood website, the five-acre park, which has 800 feet of shoreline along Lake Michigan, is a local and regional destination which hosts celebrations on holidays and concert series during the summer.

This memorandum evaluates public on-street parking on both sides of Lake Drive; the parallel streets of Harcourt Place, Ridgefield Circle, and Richland Court; and the side roads of Shorewood Boulevard, Jarvis Street, Wood Place, and Olive Street between Downer Avenue and Lake Drive. Existing parking restrictions were documented and are shown in **Appendix A**.

Study Methodology

The study recorded parking usage on one typical weekday and one weekend day in August 2021 for nine hours (10AM to 7PM). Kapur staff members walked the roadways once each hour recording the last three or four license plate characters of parked vehicles. The license plate characters were entered into a database that allowed the team to determine occupancy



and duration of public on-street parking. Furthermore, vehicles were classified as passenger car/truck, delivery truck, landscaping truck, and landscaping truck with trailer. The analysis assumed that each parked passenger car/truck will use 20 feet of curb space without blocking other vehicles, intersections, hydrants, crosswalks, and driveways. This approach was consistent with parking regulations in the Village of Shorewood. See **Appendix B** for a summary of parking regulations and parking space length based on those shown for Shorewood's Parklet Program.

Kapur collected the data on days with less than a 40 percent chance of precipitation predicted two days prior. The first data collection day was Saturday, August 7th. The weather was cloudy, and the temperatures were in the low 70s. Around 2PM, thunderstorms rolled in, and the last count for that day was the 1PM hour. Next Saturday, August 14th, the weekend study resumed at 2PM and concluded at 7PM. That day, the weather was sunny with highs in the upper 70s.

The weekday study was conducted on Thursday, August 12th with temperatures in the 80s and partly sunny skies. In the late evening of Tuesday, August 10th, a large storm left the area without power and branches knocked down primarily on the sidewalks. On August 12th, the traffic signals at Capitol Drive and Lake Drive were in flash mode with queues developing at peak periods. However, the storm damage did not appear to affect parking as there was very little debris in the road, and vehicles were still able to park.

Parking Utilization

Parking utilization was calculated by determining how many 20-foot-long parking spaces fit within the areas of posted parking restrictions and parking regulations. These 20-foot legal parking spaces were cataloged. Vehicles parked legally and illegally were recorded. **Appendix C and D** show legal and illegal parking observed and the vehicle types occupying the parking space each hour for both the weekend and weekday study days. The most common form of parking violation was parking in a no parking zone either posted or by regulation. These violations were most common in the area around Atwater Park. The second most common violation was landscaping trucks and trucks with trailers blocking driveways and parking too close to other objects mostly due to their larger size.

Parking Occupancy

Hourly:

Parking occupancy was calculated for each direction on each block. It was calculated by adding together all the parked vehicles (legal and illegal) and dividing it by the total number of legal spaces. The illegally parked vehicles were included because they contribute to the total number of vehicles on a block regardless of whether they were legally parked or not. **Appendix E and F** show the hourly occupancy rate by block and direction for weekends and weekdays. The highest occupancy rates were observed along Lake Drive between Capitol Drive and Jarvis Street and on Harcourt Place regardless of time or day.

On the weekend between the hours of 11AM and 7PM, both sides of Lake Drive between Capitol Drive and Jarvis Street were never less than 50% occupied. The same is true for Harcourt place between 12PM and 7PM. In those segments and the segment of northbound Lake Drive between Jarvis Street and Woods Place, several hours had occupancy greater than 100%. This was possible because there were vehicles illegally parked or parked more densely than the allotted 20-foot parking spaces. The segments of Lake Drive between Edgewood Avenue and Shorewood Boulevard, Olive Street and Kensington Boulevard, and southbound Lake Drive between Jarvis Street and Wood Place never exceeded 25% occupancy. Parking occupancy on Wood Place, Olive Street, Ridgefield Circle, and eastbound Shorewood Boulevard never exceeded 50% for the duration of the day. Whereas on Richland Court and Jarvis Street, occupancy rates approached 100% during parts of the day.



During the weekdays, a similar pattern emerged where the highest percent occupancy was on both sides of Lake Drive between Capitol Drive and Jarvis Street, as well as on Harcourt Place. Like the weekend, both sides of Lake Drive between Edgewood Avenue and Shorewood Boulevard had very low occupancy (less than 25%). Except for southbound Lake Drive between Beverly Road and Newton Avenue, which had an occupancy rate between 25-50% for one hour, many of the segments in this section had no parked vehicles for one or more hours. On Lake Drive between Wood Place and Kensington Boulevard, the occupancy rate was less than 50% the entire day except for southbound Lake Drive between Wood Place and Olive Street in the 11 o'clock hour in which it was 51-75%. All the side streets included in the study had occupancy rates less than 50% the entire day except for Harcourt Place. On Harcourt Place, the occupancy rate was above 50% for seven of the nine study hours.

Daily Average:

The daily average occupancy rate was calculated for each block and direction. It was calculated by averaging the individual occupancy rate per hour for each location. The daily averages, along with the average number of vehicles compared to the number of legal 20-foot parking spaces, for weekend and weekdays are shown in **Appendix G and H**.

On a weekend, the occupancy rate for Harcourt Place and Lake Drive between Capitol Drive and Jarvis Street was calculated to be between 76-100%. Richland Court, westbound Jarvis Street, and Lake Drive between Jarvis Street and Olive Street (except for southbound Lake Drive between Olive Street and Wood Place) are at approximately half capacity or slightly higher. For the remainder of the study area, the weekend daily average never exceeds 25%.

The average occupancy was lower on a weekday than the weekend. On the weekday, only Harcourt Place had an occupancy rate greater than 75%. The highest occupancy besides Harcourt Place was once again by Atwater Park on Lake Drive between Capitol Drive and Jarvis Street (51-75%) and eastbound Jarvis Street between Lake Drive and Downer Avenue (26-50%).

Parking Duration

As part of the study, the length of time a vehicle stays in one location was measured. It was calculated by recording the last three or four characters of a vehicle's license plate every hour. Using this information, the duration of each vehicle was determined. Then the average for each block and direction was calculated from the individual durations for both weekend and weekday study days (see **Appendix I and J** respectively).

The average weekend parking duration was in the 1-2 hour range or less for most of Lake Drive except for the block between Wood Place and Olive Street (2-3 hours), northbound Lake Drive between Olive Street and Marion Street (3-4 hours), southbound between Lake Bluff Boulevard and Kensington Boulevard (2-3 hours), and southbound between Menlo Boulevard and Newton Avenue (2-3 hours). The longest weekend parking duration was on southbound Ridgely Circle (4-5 hours). Due to a thunderstorm, the weekend study was split into two Saturdays. The split may have influenced durations and may have artificially limited the maximum duration to 5 hours since it is unlikely that the same vehicle would be in the same location on two separate occasions.

The average weekday parking duration was similar to the weekend duration in most locations. For most of Lake Drive, it was in the 1-2 hour range except for between Wood Place and Kensington Boulevard. On the east side of that segment, parking duration ranged from 2-3 hours all the way to 4-5 hours (between Olive Street and Marion Street). Several of the side streets had longer weekday parking durations than what was recorded on the weekend. The longer durations suggest that neighborhood residents are parking on the street for extended periods of time.

Removing Parking

One alternative for the Lake Drive corridor is to remove parking along one side of Lake Drive to accommodate on-street bicycle lanes in each direction. For this study, parking was removed from the west side because the east side has more



available parking near Capitol Drive. Additionally, if parking was removed from the east side, everyone trying to access Atwater Park would have to cross Lake Drive.

Scenario A:

Appendix K and L show the result of removing the daily average number of occupied spots on the west side of Lake Drive on a weekend or weekday and shifting them into the remaining parking spaces on the east side of Lake Drive. On an average weekend, if parking was eliminated from the west side and shifted to the east side, all the legal parking spaces on Lake Drive between Beverly Road and Marion Street would be filled. **Table 1 and 2** on the following pages show the percent change in existing percent occupancy per block and direction between the existing conditions and proposed scenarios. On a weekend, occupancy on the east side of Lake Drive between Beverly Road and Lake Bluff Boulevard would increase between 10% and 100% with the biggest changes occurring from Beverly Road to Shorewood Boulevard (100% increase) and between Olive Street and Lake Bluff Boulevard (73-89% increase). In this scenario, the segment between Capitol Drive and Jarvis Street would become 100% occupied, which is a 10% increase because it was already highly occupied. Segments of Lake Drive south of Beverly Road would see an 8-11% increase in occupancy.

On an average weekday, parking occupancy would increase on Lake Drive between Beverly Road and Olive Street by more than 50% with the exception of the portion between Capitol Drive and Jarvis Street which would increase by 32%. The remainder of Lake Drive would increase by less than 10% from existing occupancy rates.

In this scenario the occupancy on the sideroads would remain unchanged. Harcourt Place, Jarvis Street, and Richland Court have occupancies greater than 30% on a weekend and greater than 18% on a weekday. In general, the remaining side roads in the study all had lower occupancy rates.

Scenario B:

The other scenario evaluated was shifting parking onto the nearest side streets in the study area and the east side of Lake Drive as shown in **Appendix M and N**. On a weekend, Harcourt Place, Richland Court, and Jarvis Street would be close to 100% occupancy, and Lake Drive from Capitol to Olive Street would be more than 50% occupied. This is an increase of 45% to 70% for Richland Court and Jarvis Street while Harcourt Place would stay the same.

On a weekday, Lake Drive between Capitol Drive and Jarvis Street would be approximately 70% occupied as it is in the existing condition. Westbound Jarvis Street would be 100% occupied (an 82% increase), and eastbound Jarvis Street would be 60% occupied (a 30% increase). The other side roads within the study would see increases ranging from 0-15%.

Summary

- When looking at Lake Drive as a whole, there are two distinct segments: south of Capitol Drive (Edgewood Avenue to Capitol Drive) and north of Capitol Drive (Capitol Drive to Kensington Boulevard).
- Parking along Lake Drive is utilized most on the weekends and north of Capitol Drive especially by Atwater Park.
- There are currently sections of Lake Drive near Atwater Park where parking utilization exceeds the number of assumed 20-foot legal parking spaces.
- Parking south of Capitol Drive and on the side roads in the study area except Harcourt Place are primarily underutilized.
- The average parking duration on Lake Drive is in the 1–2-hour range for most locations on both weekdays and weekends.



Table 1: Weekend Occupancy Rate

	Segment	Side of the Road	Current % Occupancy - Appendix G	Scenario A: Shift to East Side Lake Drive - Appendix K	% Change (Scenario A to Existing)	Scenario B: Shift to Side Roads - Appendix M	% Change (Scenario B to Existing)
Lake Drive	Edgewood to Shepard	West	6%	No Parking	-6%	No Parking	-6%
		East	0%	8%	8%	8%	8%
	Shepard to Menlo	West	14%	No Parking	-14%	No Parking	-14%
		East	0%	10%	10%	10%	10%
	Menlo to Newton	West	13%	No Parking	-13%	No Parking	-13%
		East	11%	22%	11%	22%	11%
	Newton to Beverly	West	0%	No Parking	0%	No Parking	0%
		East	8%	8%	0%	8%	0%
	Beverly to Shorewood	West	0%	No Parking	0%	No Parking	0%
		East	0%	100%	100%	0%	0%
	Shorewood to Capitol	West	26%	No Parking	-26%	No Parking	-26%
		East	N/A*	N/A*	N/A*	N/A*	N/A*
	Capitol to Jarvis	West	95%	No Parking	-95%	No Parking	-95%
		East	90%	100%	10%	90%	0%
	Jarvis to Wood	West	50%	No Parking	-50%	No Parking	-50%
		East	57%	100%	43%	57%	0%
	Wood to Olive	West	20%	No Parking	-20%	No Parking	-20%
		East	50%	100%	50%	50%	0%
	Olive to Marion	West	0%	No Parking	0%	No Parking	0%
		East	11%	100%	89%	11%	0%
Marion to Lake Bluff	West	0%	No Parking	0%	No Parking	0%	
	East	0%	73%	73%	0%	0%	
Lake Bluff to Kensington	West	3%	0%	-3%	No Parking	-3%	
	East	0%	2%	2%	5%	5%	
Side Roads	Shorewood	South	11%	11%	0%	11%	0%
		North	16%	16%	0%	32%	16%
	Ridgefield	West	6%	6%	0%	6%	0%
		East	13%	13%	0%	13%	0%
	Harcourt	West	89%	89%	0%	89%	0%
		East	N/A*	N/A*	N/A*	N/A*	N/A*
	Richland	West	50%	50%	0%	95%	45%
		East	N/A*	N/A*	N/A*	N/A*	N/A*
	Jarvis	South	30%	30%	0%	100%	70%
		North	36%	36%	0%	100%	64%
	Wood	South	10%	10%	0%	10%	0%
		North	8%	8%	0%	8%	0%
	Olive	South	N/A*	N/A*	N/A*	N/A*	N/A*
		North	0%	0%	0%	0%	0%

*= No Parking Currently Allowed



Table 2: Weekday Occupancy Rate

	Segment	Side of the Road	Current % Occupancy Appendix H	Scenario A: Shift to East Side Lake Drive - Appendix L	% Change (Scenario A to Existing)	Scenario B: Shift to Side Roads Appendix N	% Change (Scenario B to Existing)
Lake Drive	Edgewood to Shepard	West	6%	No Parking	-6%	No Parking	-6%
		East	8%	15%	7%	15%	7%
	Shepard to Menlo	West	0%	No Parking	0%	No Parking	0%
		East	0%	0%	0%	0%	0%
	Menlo to Newton	West	0%	No Parking	0%	No Parking	0%
		East	0%	0%	0%	0%	0%
	Newton to Beverly	West	8%	No Parking	-8%	No Parking	-8%
		East	8%	15%	7%	15%	7%
	Beverly to Shorewood	West	0%	No Parking	0%	No Parking	0%
		East	20%	80%	60%	20%	0%
	Shorewood to Capitol	West	16%	No Parking	-16%	No Parking	-16%
		East	N/A*	N/A*	N/A*	N/A*	N/A*
	Capitol to Jarvis	West	57%	No Parking	-57%	No Parking	-57%
		East	68%	100%	32%	68%	0%
	Jarvis to Wood	West	25%	No Parking	-25%	No Parking	-25%
		East	14%	71%	57%	14%	0%
	Wood to Olive	West	20%	No Parking	-20%	No Parking	-20%
		East	17%	100%	83%	17%	0%
Olive to Marion	West	0%	No Parking	0%	No Parking	0%	
	East	11%	11%	0%	11%	0%	
Marion to Lake Bluff	West	8%	No Parking	-8%	No Parking	-8%	
	East	9%	18%	9%	9%	0%	
Lake Bluff to Kensington	West	3%	No Parking	-3%	No Parking	-3%	
	East	12%	15%	3%	15%	3%	
Side Roads	Shorewood	South	7%	7%	0%	7%	0%
		North	13%	13%	0%	23%	10%
	Ridgefield	West	19%	19%	0%	19%	0%
		East	20%	20%	0%	20%	0%
	Harcourt	West	78%	78%	0%	78%	0%
		East	N/A*	N/A*	N/A*	N/A*	N/A*
	Richland	West	5%	5%	0%	9%	4%
		East	N/A*	N/A*	N/A*	N/A*	N/A*
	Jarvis	South	30%	30%	0%	60%	30%
		North	18%	18%	0%	100%	82%
	Wood	South	10%	10%	0%	10%	0%
		North	8%	8%	0%	23%	15%
	Olive	South	N/A*	N/A*	N/A*	N/A*	N/A*
		North	11%	11%	0%	22%	11%

*= No Parking Currently Allowed



APPENDIX A

Parking Restrictions





RESTRICTION

- NO RESTRICTION
- 2 HR PARKING 8 AM - 6 PM EXCEPT SAT, SUN AND HOL
- 2 HR PARKING 8 AM - 6 PM EXCEPT SAT, SUN AND HOL: NO PARKING DEC 1 - MAR 1
- NO PARKING 10 PM TO 5 AM
- NO PARKING 7 AM - 9 AM, 4 PM - 6 PM, 10 PM - 5 AM
- NO PARKING ANY TIME
- NO PARKING ANY TIME / NO PARKING THIS SIDE OF STREET
- NO PARKING BETWEEN SIGNS 4 PM TO 6 PM EXCEPT SAT, SUN AND HOLIDAYS
- NO PARKING DEC 1 TO MARCH 1
- NO PARKING NORTH TO CORNER
- NO PARKING THIS SIDE OF STREET
- NO PARKING THIS SIDE OF STREET 10 PM TO 5 AM
- NO PARKING THIS SIDE OF STREET 7 AM TO 9 AM EXCEPT SAT AND SUN
- NO PARKING THIS SIDE OF STREET 7 AM TO 9 AM EXCEPT SAT AND SUN OR 10 PM TO 5 AM
- CROSSWALK; DRIVEWAY; STREET

N

0 300 600

Feet

APPENDIX B

Parking Regulations



Policy No. #34	Page 1 of 6
Title: Parklet Program	
Authority: Shorewood Village Board	
Date of Issue: 1/22/18	Updated: 12/17/18

The Village Board is adopting Policy No. 34 for the purpose of establishing guidelines for the review, approval and administration of a Parklet Program within the Village of Shorewood.

The Village of Shorewood defines parklets as a sidewalk extension located in the parallel parking space adjacent to a sidewalk curb that provides more space for the permitted business to use for seasonal outdoor seating or related amenities. Parklets support local businesses by expanding seating capacity and encourage pedestrian activity by creating new space for people to gather.

For the purpose of this policy, parklets shall be an extension of a business or businesses used by their customers for sit down restaurant and beverage dispensing businesses only.

I. Eligible Locations (Exhibit A Map)

- a) Oakland Avenue, between Capitol Drive northward to Glendale Avenue.
- b) Oakland Avenue, between Edgewood Avenue to Beverly Road.
- c) No more than 10% of the available parking spaces on each side of each street block (block to be defined by address range) may be occupied by parklets.

II. Ineligible Locations

- a) Within 20 feet of a bus stop.
- b) Within 4 feet of vehicle approach, such as parking lot, driveway or alley.
- c) Within 15 feet of an intersection
- d) Within the intersection of Capitol Drive where no encroachment into storage or turning lanes shall be permitted.
- e) Within 10 feet of a fire hydrant, per §500-14A.
- f) Within 6 feet of an inlet.
- g) At businesses not located along the front property build-to line (zero setback).
- h) Businesses having front or side patios will not be eligible for a parklet, unless they can demonstrate severe space limitations.

III. Program Criteria

- a) Parklets shall be allowed between April 1 – November 15.
- b) Parklets shall be removed within 3 days after November 15 each year.
- c) The Village has the right to order immediate removal should road repairs or construction be required, or emergency utility repairs. An emergency contact shall be provided with the application.
- d) When designing a parklet, access to space should be planned in a way that does not direct foot traffic through tree pits and other village landscaping.
- e) The parklet may not block or impede any existing utilities such as street lights, fire hydrants, utility boxes, manhole covers or inlets.
- f) The Village requires a minimum 5-foot pedestrian way along the public sidewalk.
- g) Use of the parklet shall be limited to **7:00 a.m. to 10:00 p.m. Sunday through Thursday and 7:00 a.m. to 11:00 p.m. Friday and Saturday.**
- h) The parklet shall be closed off to the public when the business is not open.
- i) Amplified music is prohibited. (Noise complaints that are not addressed shall be a reason for revoking the required Special Privilege Permit or cause for non-renewal.)
- j) Signs, advertising or other branding is prohibited.
- k) Applicants shall provide current liability insurance **in the sum of \$2,000,000 general liability** to be kept on file with the Village, **listing the Village of Shorewood as additional insured.**

IV. Additional Criteria considered at Village Board Discretion

- a) The Village Board may revise the number of parklets per block.
- b) The Village Board may consider current parking conditions or other existing conditions in vicinity.
- c) The Village Board may consider any other relevant factors deemed appropriate.
- d) **Each parklet shall be evaluated on its individual merits. Meeting the criteria established in this policy manual does not alter the Board's discretion to accept, reject or modify any application at the Board's sole discretion.**

V. Parklet Construction Requirements

All parklets shall be comprised of a structural platform capable of being removed on a seasonal basis and shall meet the following requirements. (Refer to Exhibit B for deck platform cross section requirement.)

- a) Maximum area to be occupied: **2 parking space lengths, 40 feet total.**
- b) Parklets may not extend beyond a business façade width. Bollards and wheel stops may be placed beyond 40 feet, but within front façade width.
- c) Parklets shall be limited to 6-foot depth.
- d) Parklets shall be flush (level) with sidewalk.
- e) Decorative railings shall be required on three sides at a 42-inch height minimum.

- f) The parklet platform shall have a minimum 6-inch horizontal clearance notch at the gutter line, which shall be continual underneath the platform to insure storm water drainage. A vertical clearance notch of at least 4 inches is preferred at the face of the curb. Any framing parallel to the curb shall include adequate drainage passages.
- g) Parklets may not be bolted to street, curb or gutter.
- h) Flexible reflective bollards shall be located at each outer corner, placed 7 feet from curb and at least 4 feet high.
- i) Durable wheel stops that cannot be easily pushed around shall be required at a distance of 4 feet from each end of the parklet. Any parklet side adjacent to an approach does not require a wheel stop. Wheel stops and bollards may not be bolted or attached in any way to the street, curb or gutter.
- j) The applicant shall have no more than one week to complete construction onsite.
- k) Quality exterior materials and design elements, including at least one planter on each end of the parklet shall be required. All wood or other exposed surfaces shall be “finished” (painted or stained).
- l) The parklet shall be ADA compliant and ADA accessible with a minimum of 3-foot clearance to access the parklet from the sidewalk.

VI. Application/Approval Process

To obtain approval for a parklet, qualified business owners must submit a written application for a Special Privilege Permit with accompanying fee payment. Special Privilege Permits must be renewed on an annual basis. Applications must include the following:

- a) Special Privilege Permit Application Submittal Requirements:
 - a. Emergency contact information.
 - b. Site plan showing parklet, public sidewalk and building line, with all dimensions, to scale.
 - c. Material description, elevation and cross section per Exhibit B.
 - d. The Village will provide a written notification of the proposed parklet, with site plan and dimensions, to neighboring businesses, property owners and residents.
 - i. Notice shall be given to businesses, property owners and residents within 100 lineal feet on each side of the business and shall include businesses, property owners and residents on the opposite side of the street, paralleling the distance of the business side, as shown in Graph A.
 - ii. Notice shall be provided not less than 14 days prior to the scheduled Village Board meeting.
 - iii. Applicant shall post notice letter on business window or door for public to see, not less than 14 days prior to the scheduled Village Board meeting.

- iv. Annual renewal applications for previously approved parklets should be filed with the Village by February 1st of each calendar year, in order to obtain approval for spring installation. Unless noted, all renewal applications shall meet the full application requirements established within this policy, including Board approval.

Graph A



- b) Special Privilege Permit Application, Review and Approval Requirements:
 - a. Review by Public Works Director and Chief of Police
 - b. Approval by Design Review Board (first time or if design changes)
 - c. Review by Building Inspector for structural elements
 - d. Review by Planning Director for program criteria
 - e. Final approval by Village Board
- c) Building Permit Application, Review and Approval Requirements:

A building permit application shall be submitted for review to the Planning & Development Department and only issued once the design is approved by the Design Review Board and the Special Privilege Permit is approved. The building permit application must be submitted with the Special Privilege Permit attached.
- d) Parklet Inspection Requirements:
 - a. A rough inspection of the framing shall be scheduled and performed by a building inspector before the deck boards are assembled.
 - b. A final inspection shall be required after the work is complete, including required bollards and wheel stops.
 - c. The parklet may not be occupied before the final inspection is approved.

EXHIBIT A

EXHIBIT A Parklet Eligible Locations - Shorewood

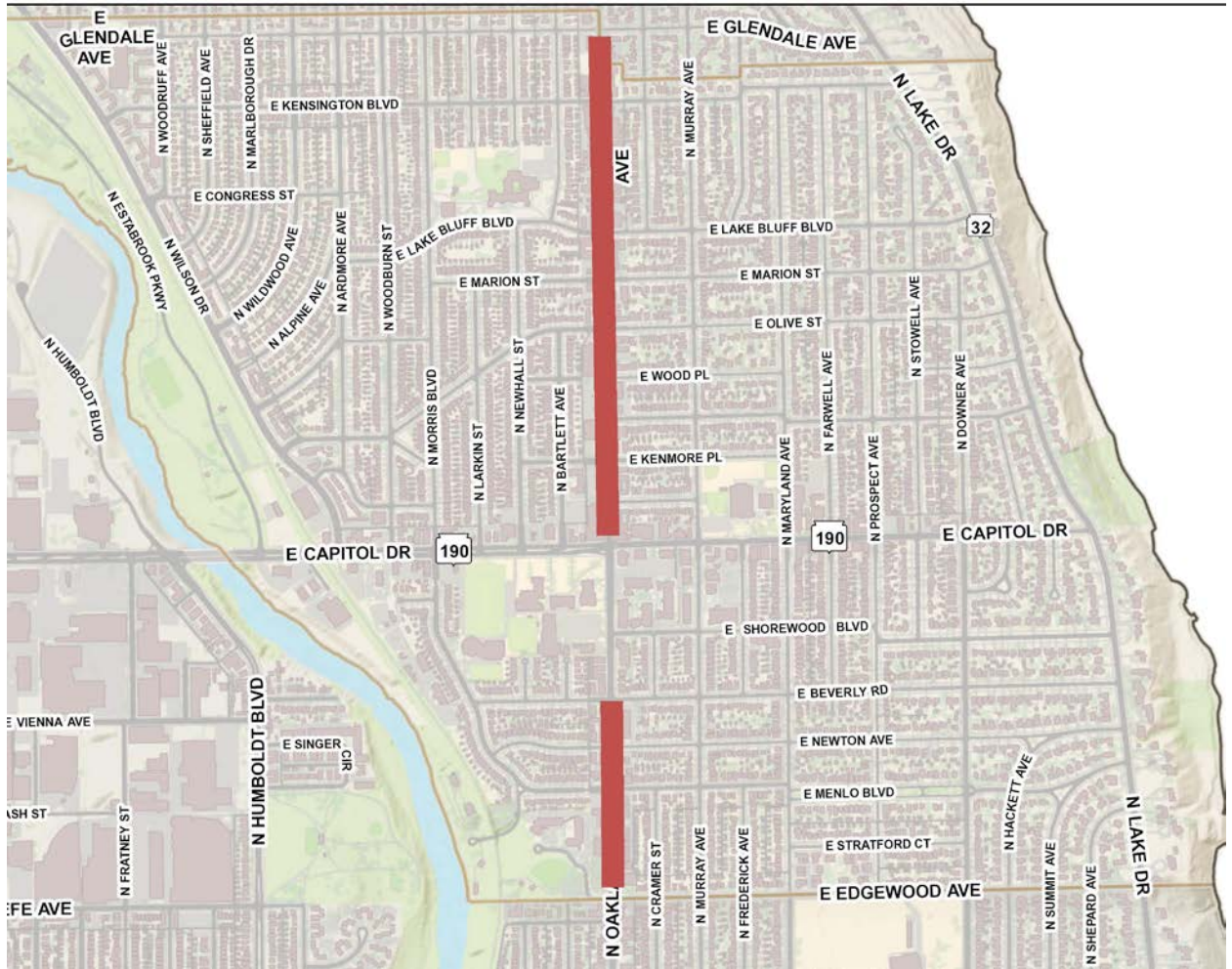
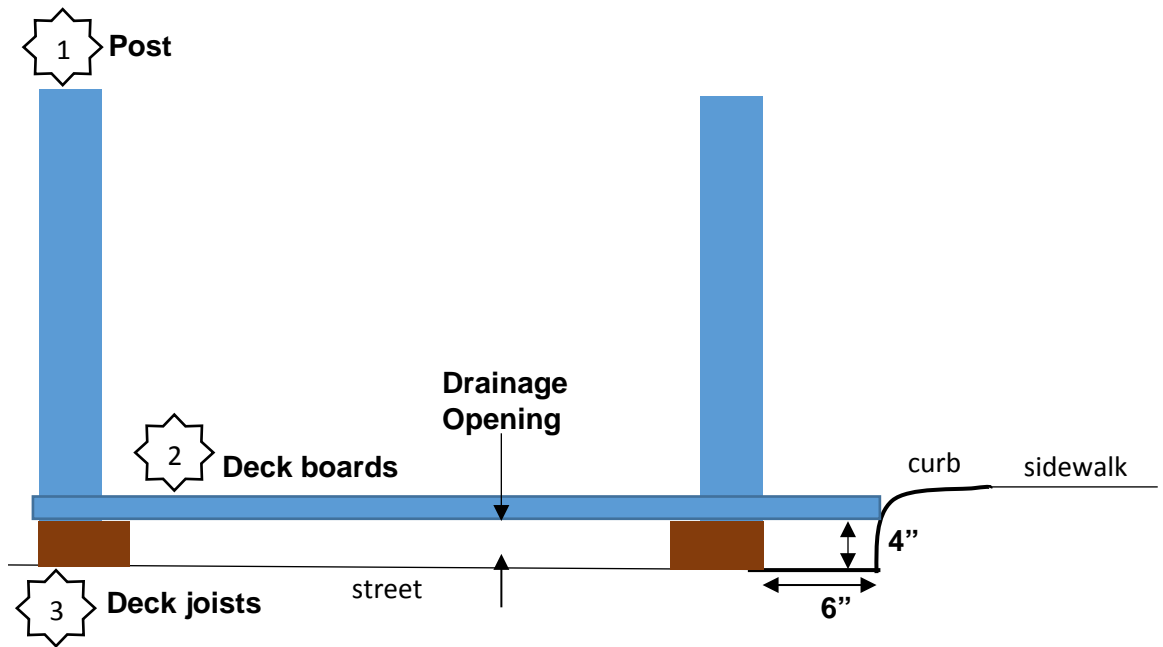


EXHIBIT B

PARKLET CROSS SECTION
DECK PLATFORM REQUIREMENTS




APPENDIX C


Weekend Hourly Vehicle Types

**WIS 32 (Lake Drive)
Village of Shorewood**

**Vehicle Type
Saturday, 8/7/2021
Saturday, 8/14/2021**

10 am - 11 am

 Passenger Car/Truck




 Passenger Car/Truck - No Parking Zone



**WIS 32 (Lake Drive)
Village of Shorewood**




**Vehicle Type
Saturday, 8/7/2021
Saturday, 8/14/2021**

11 am - 12 pm

-  Passenger Car/Truck
-  Passenger Car/Truck - No Parking Zone
-  Landscaping Truck






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Feet



**WIS 32 (Lake Drive)
Village of Shorewood**

**Vehicle Type
Saturday, 8/7/2021
Saturday, 8/14/2021**

12 pm - 1 pm




-  Passenger Car/Truck
-  Passenger Car/Truck - No Parking Zone
-  Delivery Truck




**WIS 32 (Lake Drive)
Village of Shorewood**

**Vehicle Type
Saturday, 8/7/2021
Saturday, 8/14/2021**

1 pm - 2 pm

-  Passenger Car/Truck
-  Passenger Car/Truck - No Parking Zone
-  Delivery Truck







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Feet
WISCONSIN DEPARTMENT OF TRANSPORTATION


**WIS 32 (Lake Drive)
Village of Shorewood**


**Vehicle Type
Saturday, 8/7/2021
Saturday, 8/14/2021**


2 pm - 3 pm

-  Passenger Car/Truck
-  Passenger Car/Truck - No Parking Zone
-  Landscaping Truck
-  Landscaping Truck with Trailer - No Parking Zone



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Feet








WISCONSIN DEPARTMENT OF TRANSPORTATION 

**WIS 32 (Lake Drive)
Village of Shorewood**

**Vehicle Type
Saturday, 8/7/2021
Saturday, 8/14/2021**

3 pm - 4 pm

-  Passenger Car/Truck
-  Passenger Car/Truck - No Parking Zone
-  Delivery Truck
-  Landscaping Truck with Trailer
-  Landscaping Truck with Trailer - No Parking Zone









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WISCONSIN DEPARTMENT OF TRANSPORTATION
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**WIS 32 (Lake Drive)
Village of Shorewood**


**Vehicle Type
Saturday, 8/7/2021
Saturday, 8/14/2021**

4 pm - 5 pm

-  Passenger Car/Truck
-  Passenger Car/Truck - No Parking Zone
-  Delivery Truck
-  Landscaping Truck
-  Landscaping Truck with Trailer
-  Landscaping Truck with Trailer - No Parking Zone



0 300 600
Feet






kapur

**WIS 32 (Lake Drive)
Village of Shorewood**

**Vehicle Type
Saturday, 8/7/2021
Saturday, 8/14/2021**

5 pm - 6 pm


-  Passenger Car/Truck
-  Passenger Car/Truck - No Parking Zone
-  Delivery Truck - No Parking Zone



N

0 300 600

Feet






kapur

**WIS 32 (Lake Drive)
Village of Shorewood**

**Vehicle Type
Saturday, 8/7/2021
Saturday, 8/14/2021**

6 pm - 7 pm

-  Passenger Car/Truck
-  Passenger Car/Truck - No Parking Zone
-  Landscaping Truck



0 300 600
Feet
WISCONSIN DEPARTMENT OF TRANSPORTATION
kapur




APPENDIX D

Weekday Hourly Vehicle Types

**WIS 32 (Lake Drive)
Village of Shorewood**

**Vehicle Type
Thursday, 8/12/2021**

10 am - 11 am


-  Passenger Car/Truck
-  Passenger Car/Truck - No Parking Zone
-  Landscaping Truck




**WIS 32 (Lake Drive)
Village of Shorewood**


**Vehicle Type
Thursday, 8/12/2021**

11 am - 12 pm

 Passenger Car/Truck

 Passenger Car/Truck - No Parking Zone











0 300 600
Feet
WISCONSIN DEPARTMENT OF TRANSPORTATION


**WIS 32 (Lake Drive)
Village of Shorewood**

**Vehicle Type
Thursday, 8/12/2021**

12 pm - 1 pm







-  Passenger Car/Truck
-  Passenger Car/Truck - No Parking Zone
-  Delivery Truck
-  Delivery Truck - No Parking Zone
-  Landscaping Truck
-  Landscaping Truck - No Parking Zone
-  Landscaping Truck with Trailer
-  Landscaping Truck with Trailer - No Parking Zone



**WIS 32 (Lake Drive)
Village of Shorewood**

**Vehicle Type
Thursday, 8/12/2021**

1 pm - 2 pm






-  Passenger Car/Truck
-  Passenger Car/Truck - No Parking Zone
-  Delivery Truck
-  Landscaping Truck
-  Landscaping Truck - No Parking Zone
-  Landscaping Truck with Trailer



**WIS 32 (Lake Drive)
Village of Shorewood**




**Vehicle Type
Thursday, 8/12/2021**

2 pm - 3 pm

-  Passenger Car/Truck
-  Passenger Car/Truck - No Parking Zone
-  Delivery Truck
-  Landscaping Truck
-  Landscaping Truck - No Parking Zone








0 300 600
Feet



**WIS 32 (Lake Drive)
Village of Shorewood**




**Vehicle Type
Thursday, 8/12/2021**

3 pm - 4 pm

-  Passenger Car/Truck
-  Passenger Car/Truck - No Parking Zone
-  Delivery Truck
-  Landscaping Truck
-  Landscaping Truck - No Parking Zone



0 300 600
Feet



WIS 32 (Lake Drive) Village of Shorewood

Vehicle Type
Thursday, 8/12/2021

4 pm - 5 pm

- Passenger Car/Truck
- Passenger Car/Truck - No Parking Zone
- Delivery Truck
- Landscaping Truck
- Landscaping Truck with Trailer







0 300 600
Feet
WISCONSIN DEPARTMENT OF TRANSPORTATION
kapur

**WIS 32 (Lake Drive)
Village of Shorewood**

**Vehicle Type
Thursday, 8/12/2021**

5 pm - 6 pm

-  Passenger Car/Truck
-  Passenger Car/Truck - No Parking Zone
-  Landscaping Truck
-  Landscaping Truck with Trailer





0 300 600
Feet
WISCONSIN DEPARTMENT OF TRANSPORTATION
kapur

**WIS 32 (Lake Drive)
Village of Shorewood**

**Vehicle Type
Thursday, 8/12/2021**

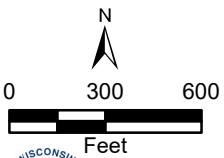
6 pm - 7 pm

 Passenger Car/Truck


 Passenger Car/Truck - No Parking Zone



0 300 600
Feet



WISCONSIN
DEPARTMENT OF TRANSPORTATION



APPENDIX E

Weekend Hourly Occupancy

WIS 32 (Lake Drive) Village of Shorewood

Parking Occupancy
Saturday, 8/7/2021
Saturday, 8/14/2021

10 am - 11 am

- 0%
- 1-25%
- 26-50%
- 51-75%

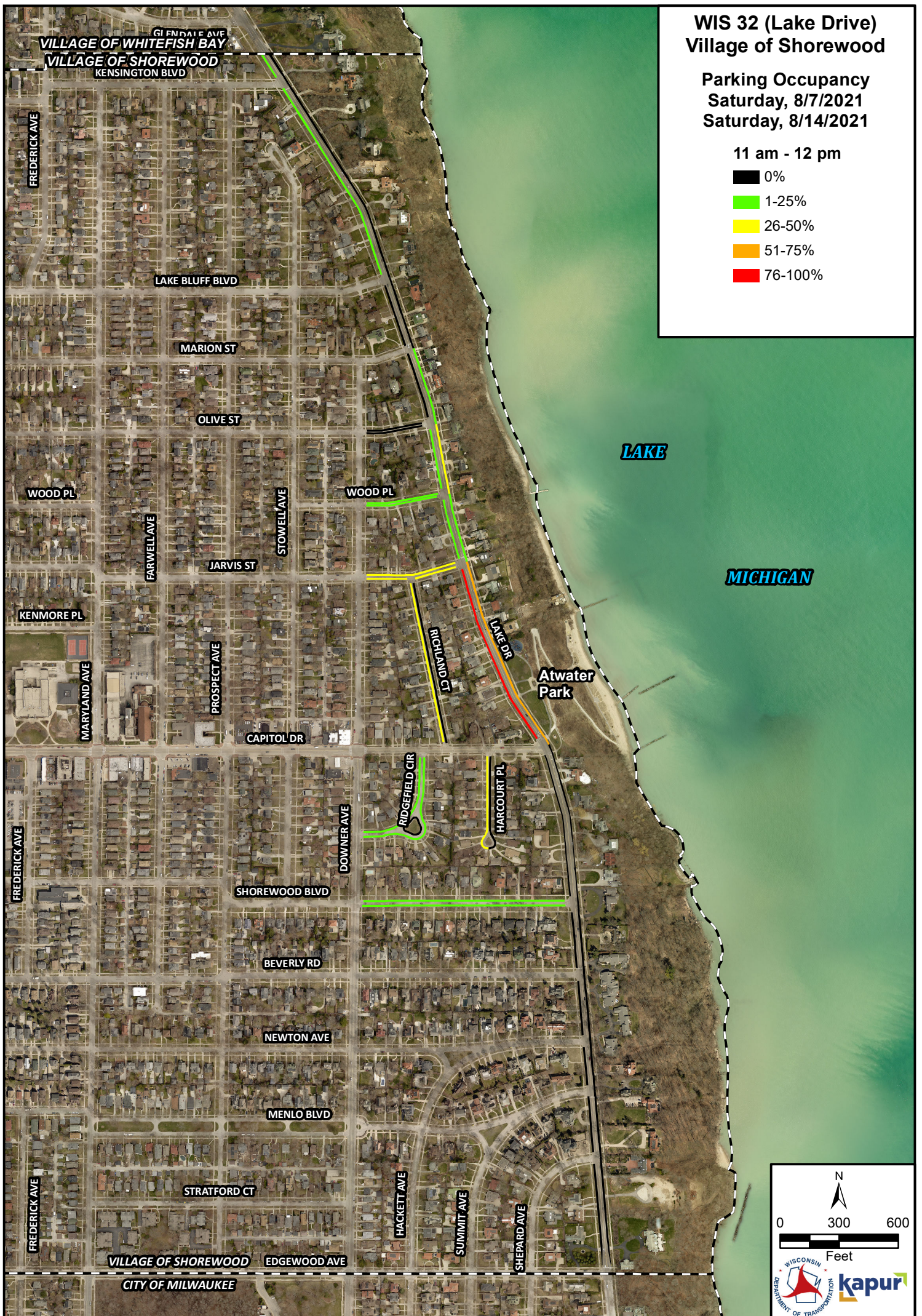


WIS 32 (Lake Drive) Village of Shorewood

Parking Occupancy
Saturday, 8/7/2021
Saturday, 8/14/2021

11 am - 12 pm

- 0%
- 1-25%
- 26-50%
- 51-75%
- 76-100%



0 300 600
Feet
WISCONSIN DEPARTMENT OF TRANSPORTATION
kapur

**WIS 32 (Lake Drive)
Village of Shorewood**

**Parking Occupancy
Saturday, 8/7/2021
Saturday, 8/14/2021**

12 pm - 1 pm

- 0%
- 1-25%
- 26-50%
- 51-75%
- >100% (*over utilization)



0 300 600
Feet

**WIS 32 (Lake Drive)
Village of Shorewood**

**Parking Occupancy
Saturday, 8/7/2021
Saturday, 8/14/2021**

1 pm - 2 pm

- 0%
- 1-25%
- 26-50%
- 51-75%
- 76-100%
- >100% (*over utilization)



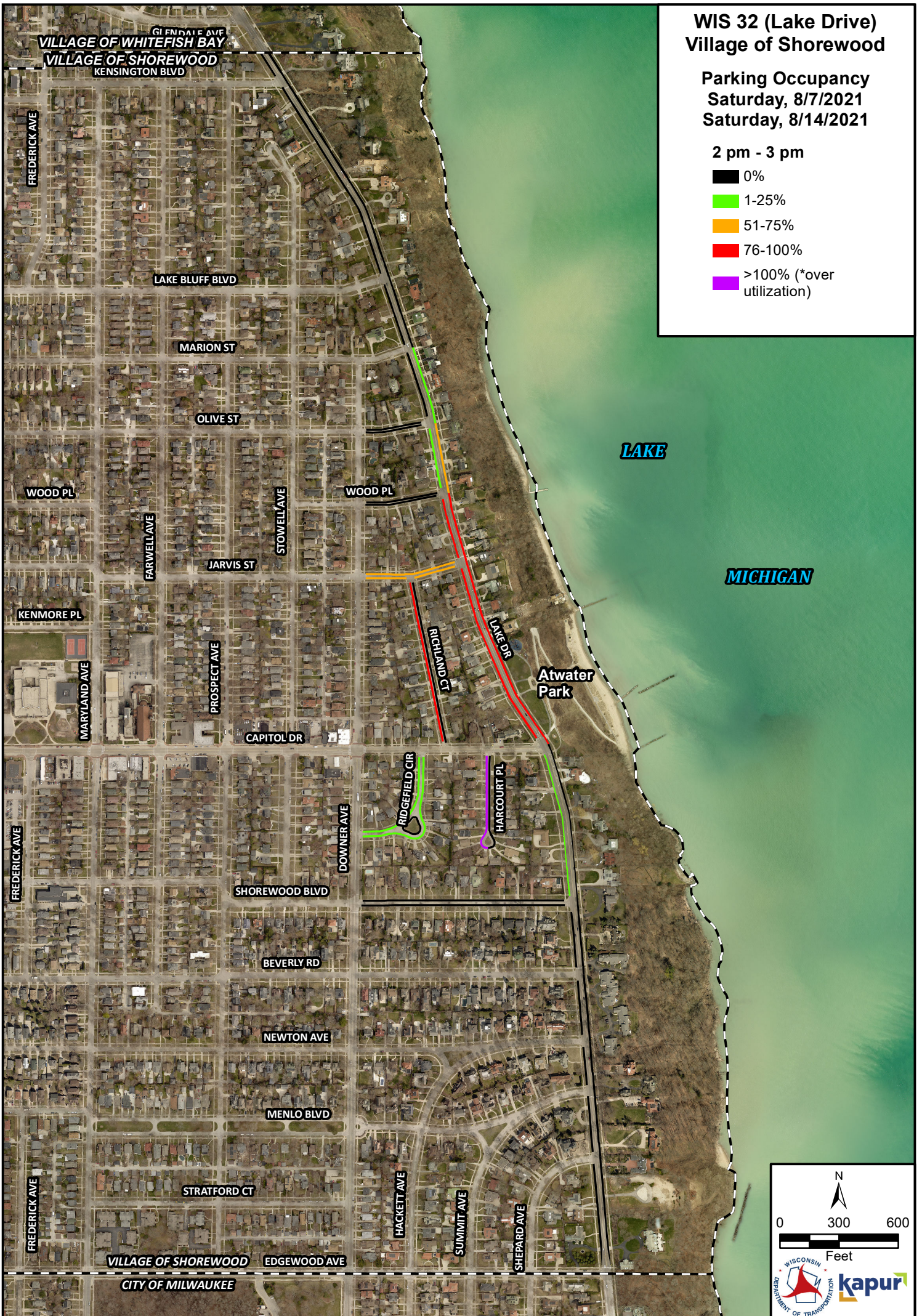
0 300 600
Feet

WIS 32 (Lake Drive) Village of Shorewood

Parking Occupancy
Saturday, 8/7/2021
Saturday, 8/14/2021

2 pm - 3 pm

- 0%
- 1-25%
- 51-75%
- 76-100%
- >100% (*over utilization)



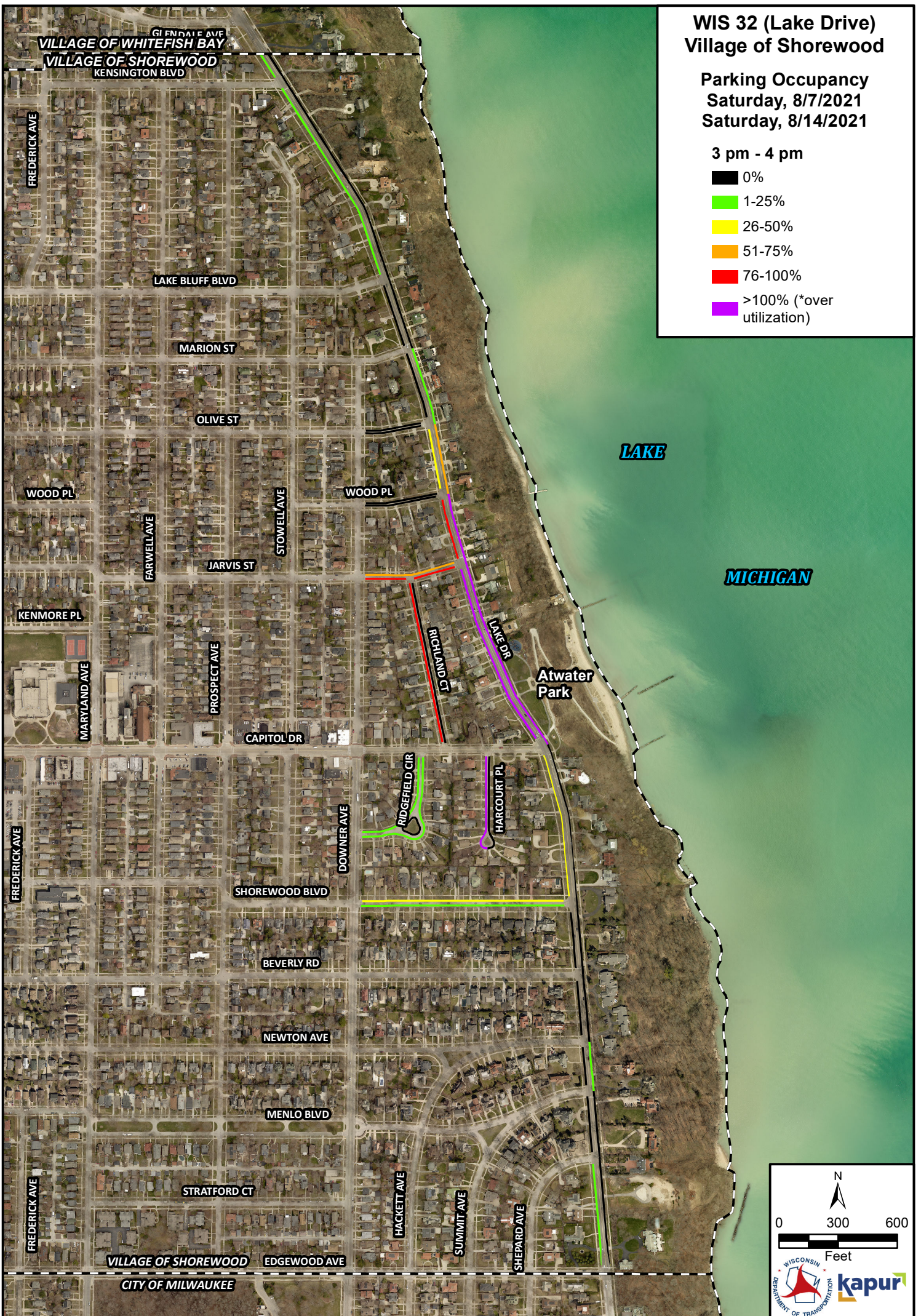
0 300 600
Feet
WISCONSIN DEPARTMENT OF TRANSPORTATION
kapur

**WIS 32 (Lake Drive)
Village of Shorewood**

**Parking Occupancy
Saturday, 8/7/2021
Saturday, 8/14/2021**

3 pm - 4 pm

- 0%
- 1-25%
- 26-50%
- 51-75%
- 76-100%
- >100% (*over utilization)



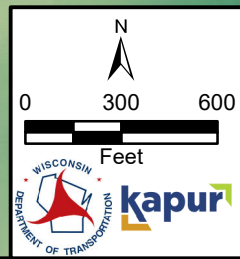
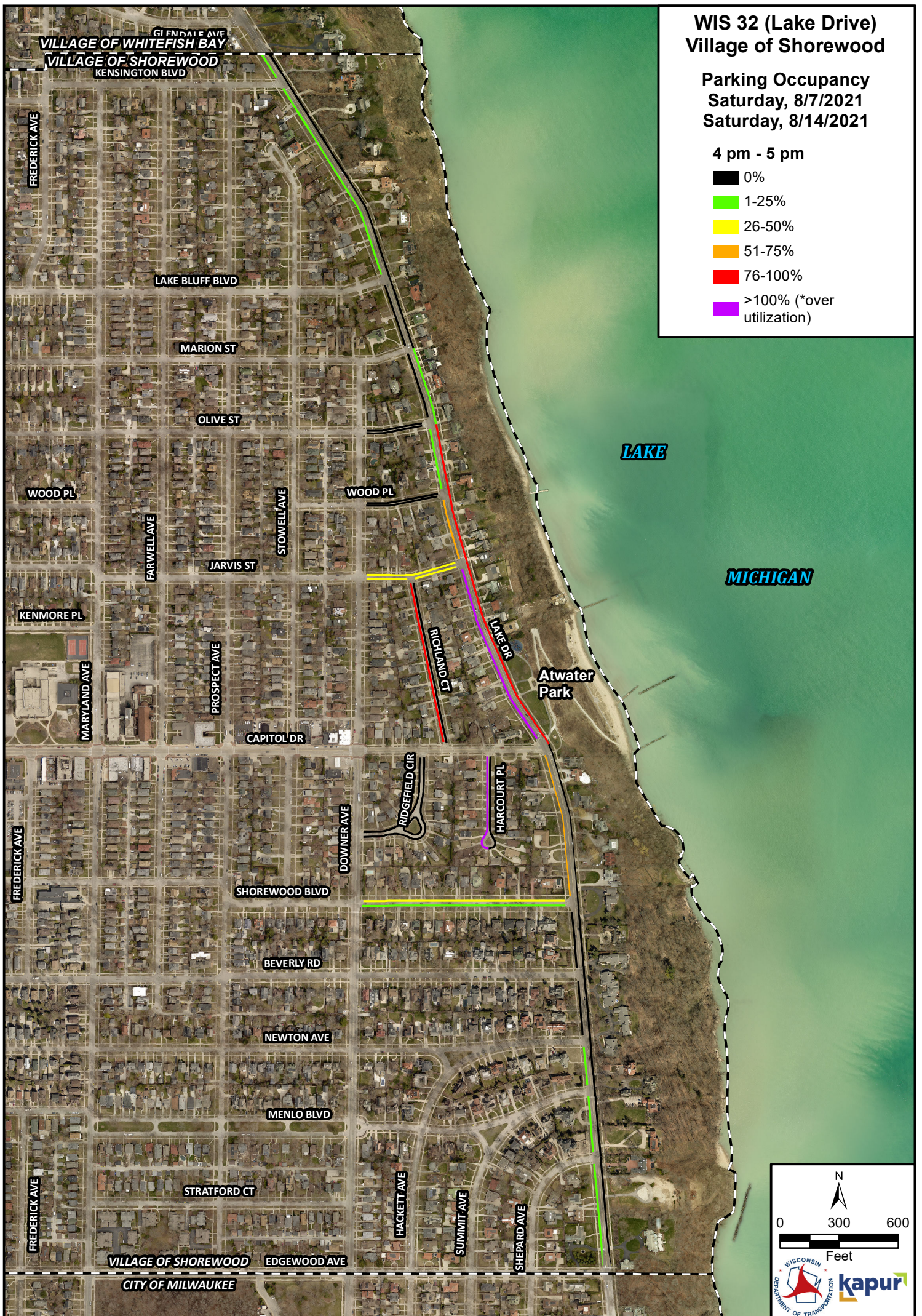
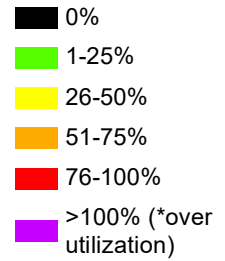
0 300 600
Feet

WISCONSIN
DEPARTMENT OF TRANSPORTATION

**WIS 32 (Lake Drive)
Village of Shorewood**

**Parking Occupancy
Saturday, 8/7/2021
Saturday, 8/14/2021**

4 pm - 5 pm

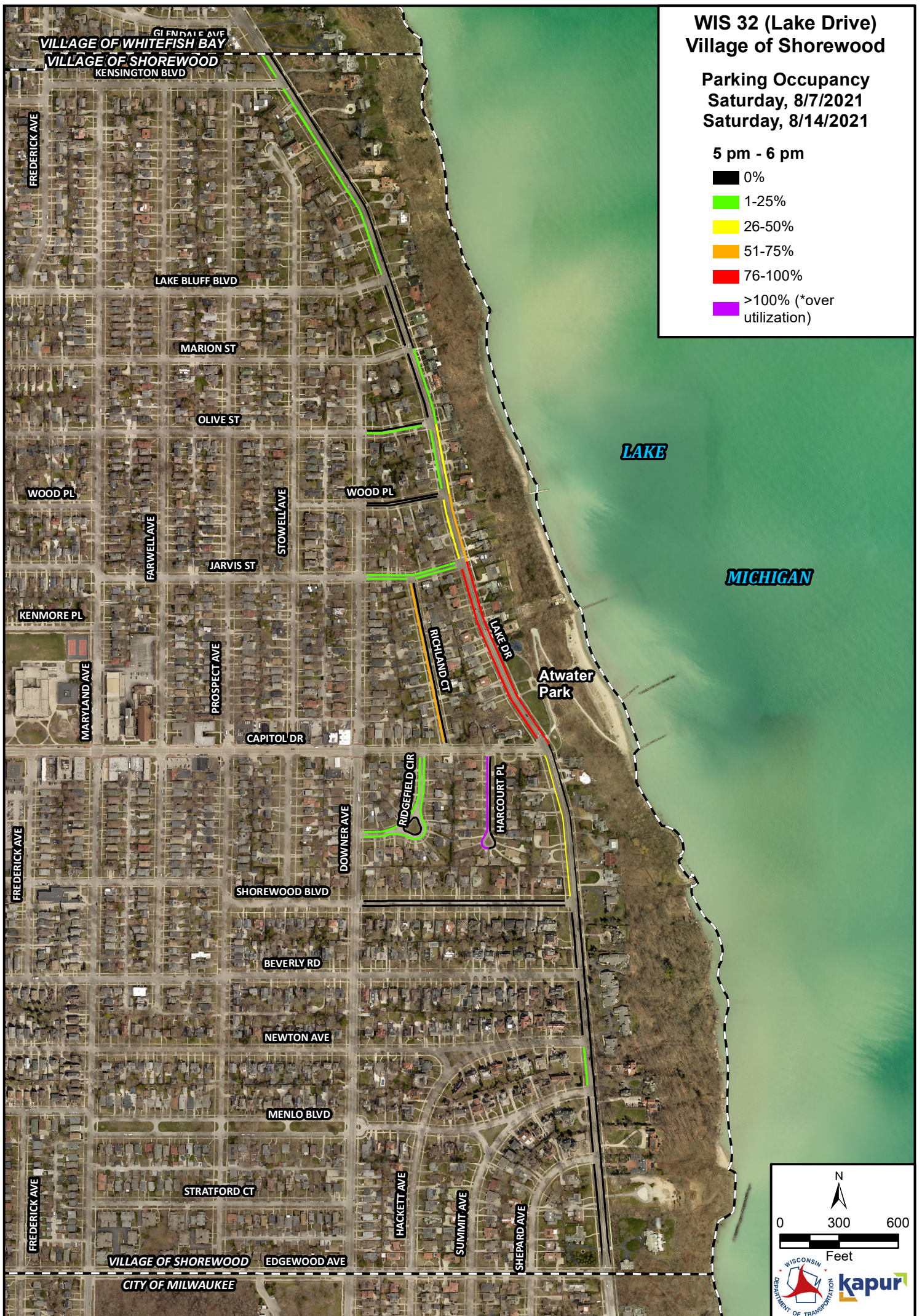


WIS 32 (Lake Drive) Village of Shorewood

Parking Occupancy
Saturday, 8/7/2021
Saturday, 8/14/2021

5 pm - 6 pm

- 0%
- 1-25%
- 26-50%
- 51-75%
- 76-100%
- >100% (*over utilization)



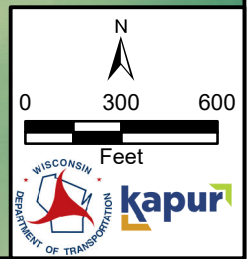
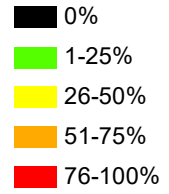
0 300 600
Feet

WISCONSIN DEPARTMENT OF TRANSPORTATION
kapur

WIS 32 (Lake Drive) Village of Shorewood

Parking Occupancy
Saturday, 8/7/2021
Saturday, 8/14/2021

6 pm - 7 pm



APPENDIX F

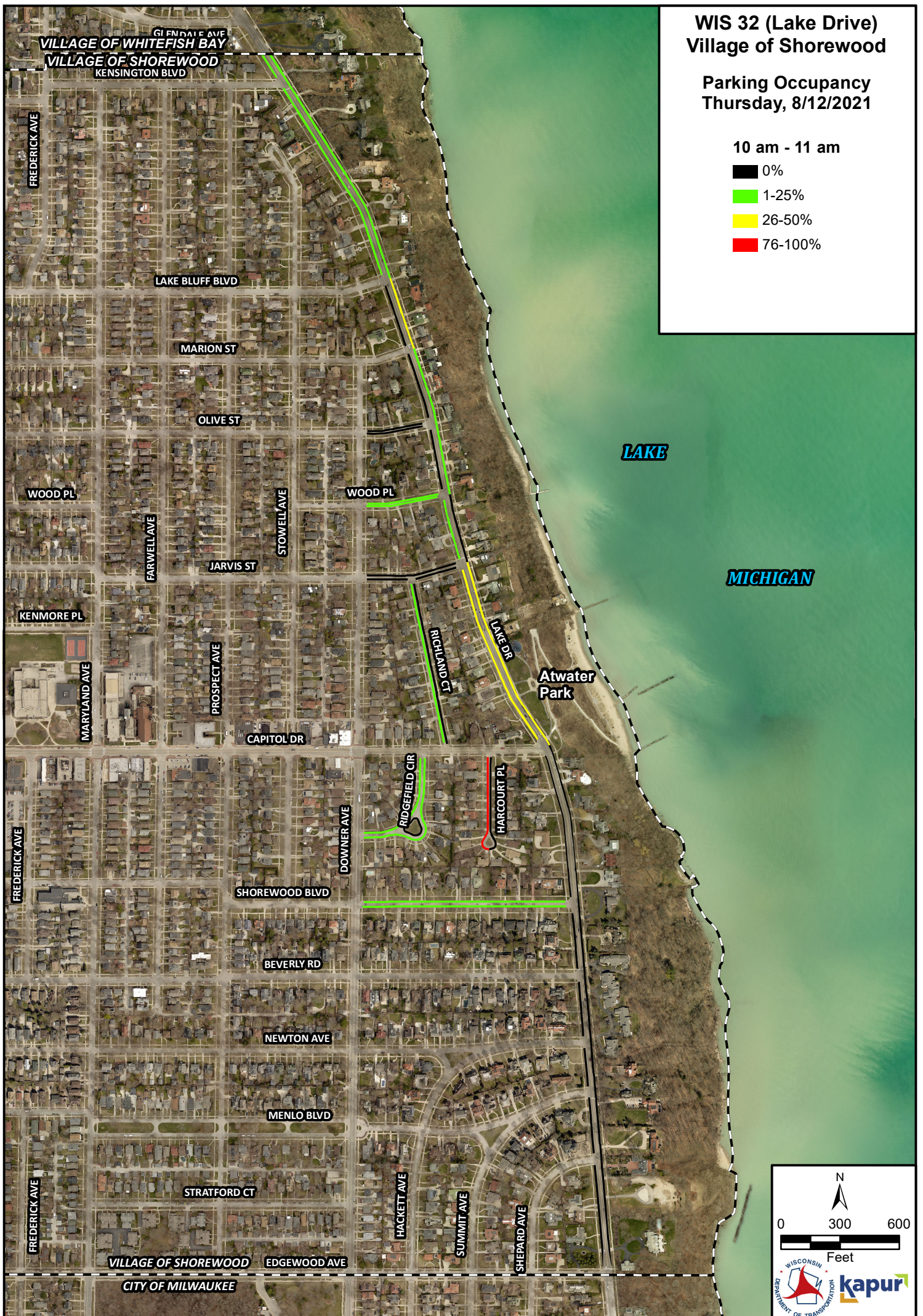
Weekday Hourly Occupancy

WIS 32 (Lake Drive) Village of Shorewood

Parking Occupancy
Thursday, 8/12/2021

10 am - 11 am

- 0%
- 1-25%
- 26-50%
- 76-100%



0 300 600
Feet

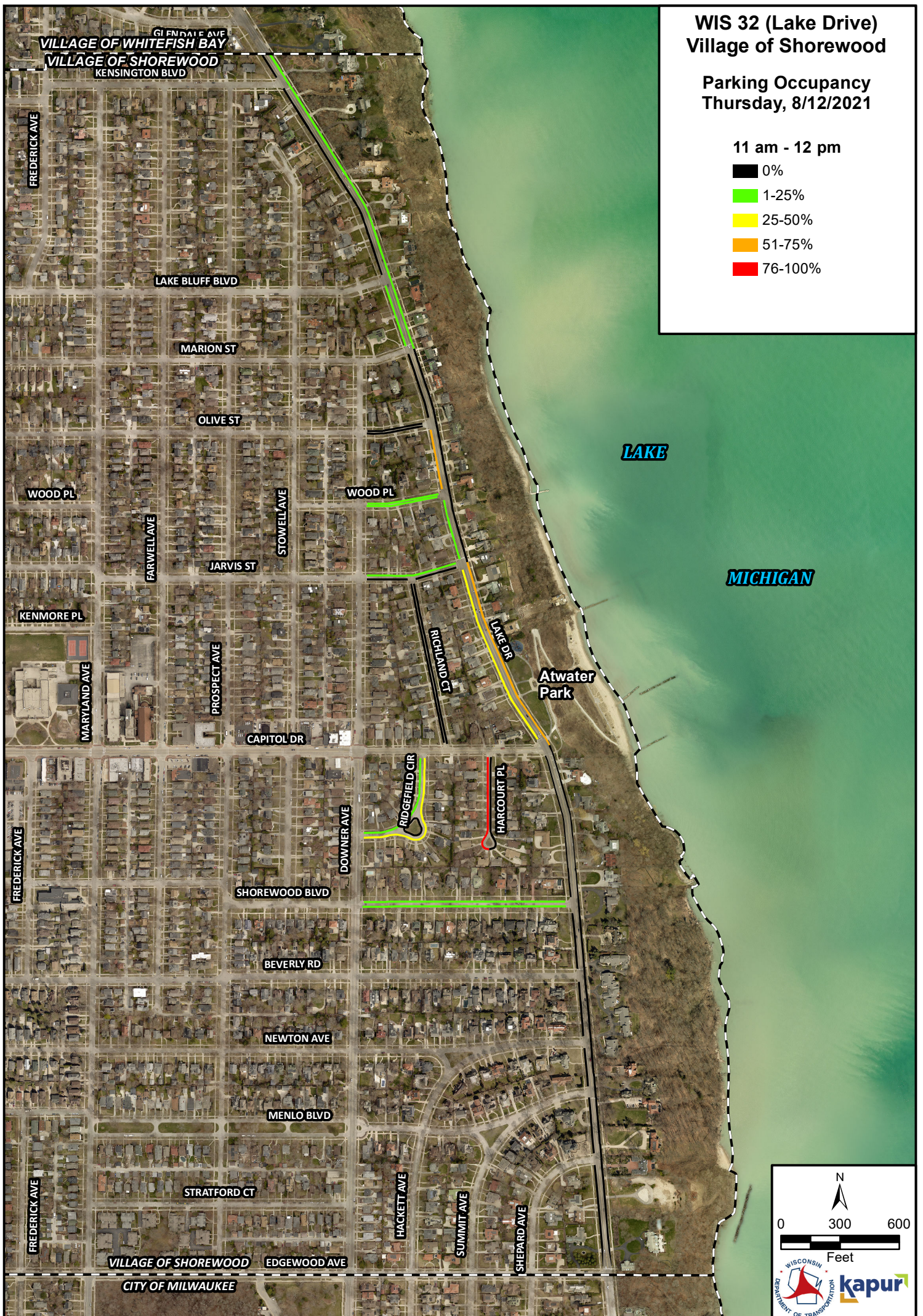
WISCONSIN DEPARTMENT OF TRANSPORTATION **kapur**

WIS 32 (Lake Drive) Village of Shorewood

Parking Occupancy
Thursday, 8/12/2021

11 am - 12 pm

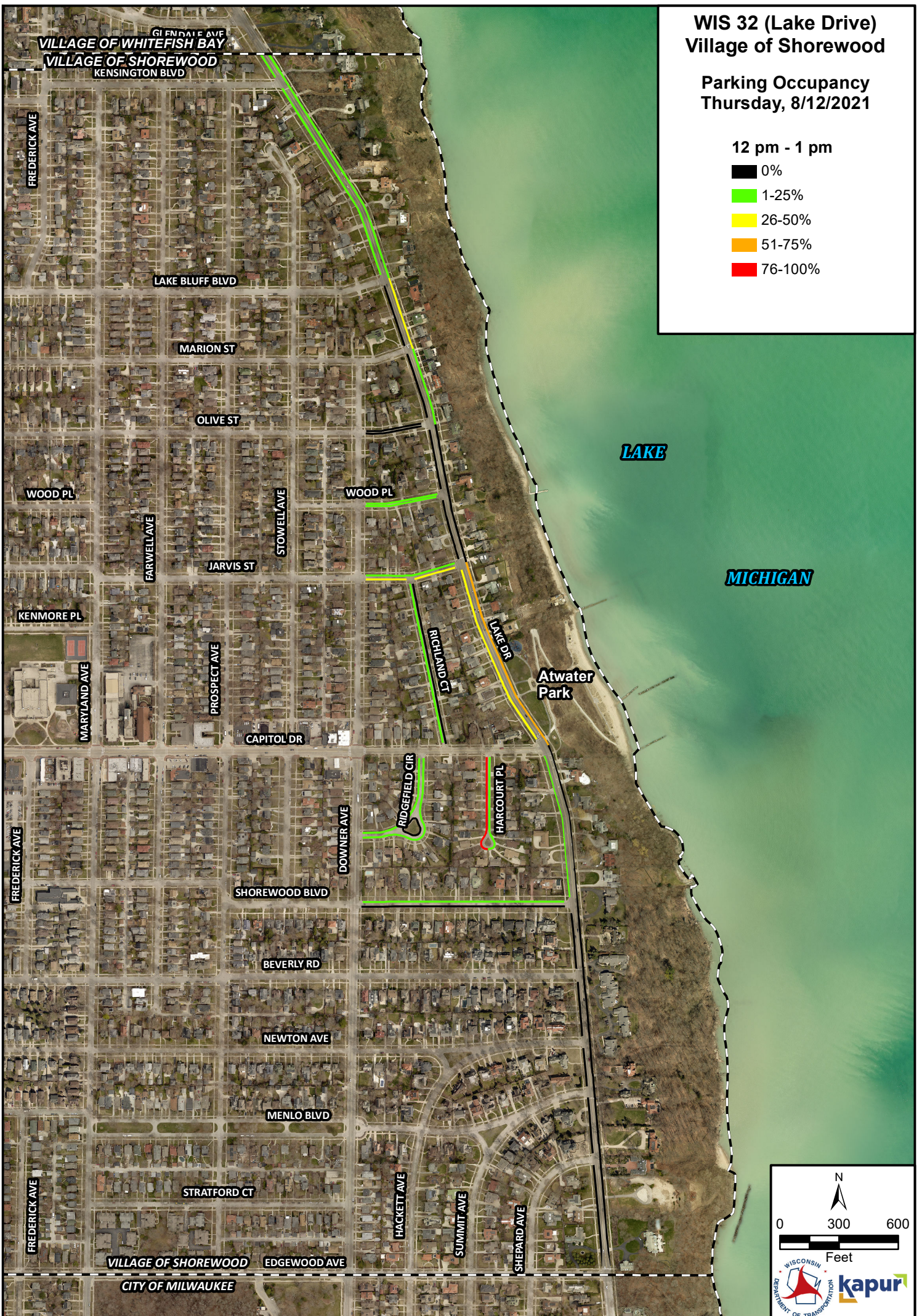
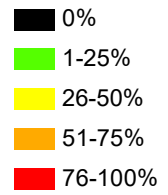
- 0%
- 1-25%
- 25-50%
- 51-75%
- 76-100%



WIS 32 (Lake Drive) Village of Shorewood

Parking Occupancy
Thursday, 8/12/2021

12 pm - 1 pm



0 300 600
Feet

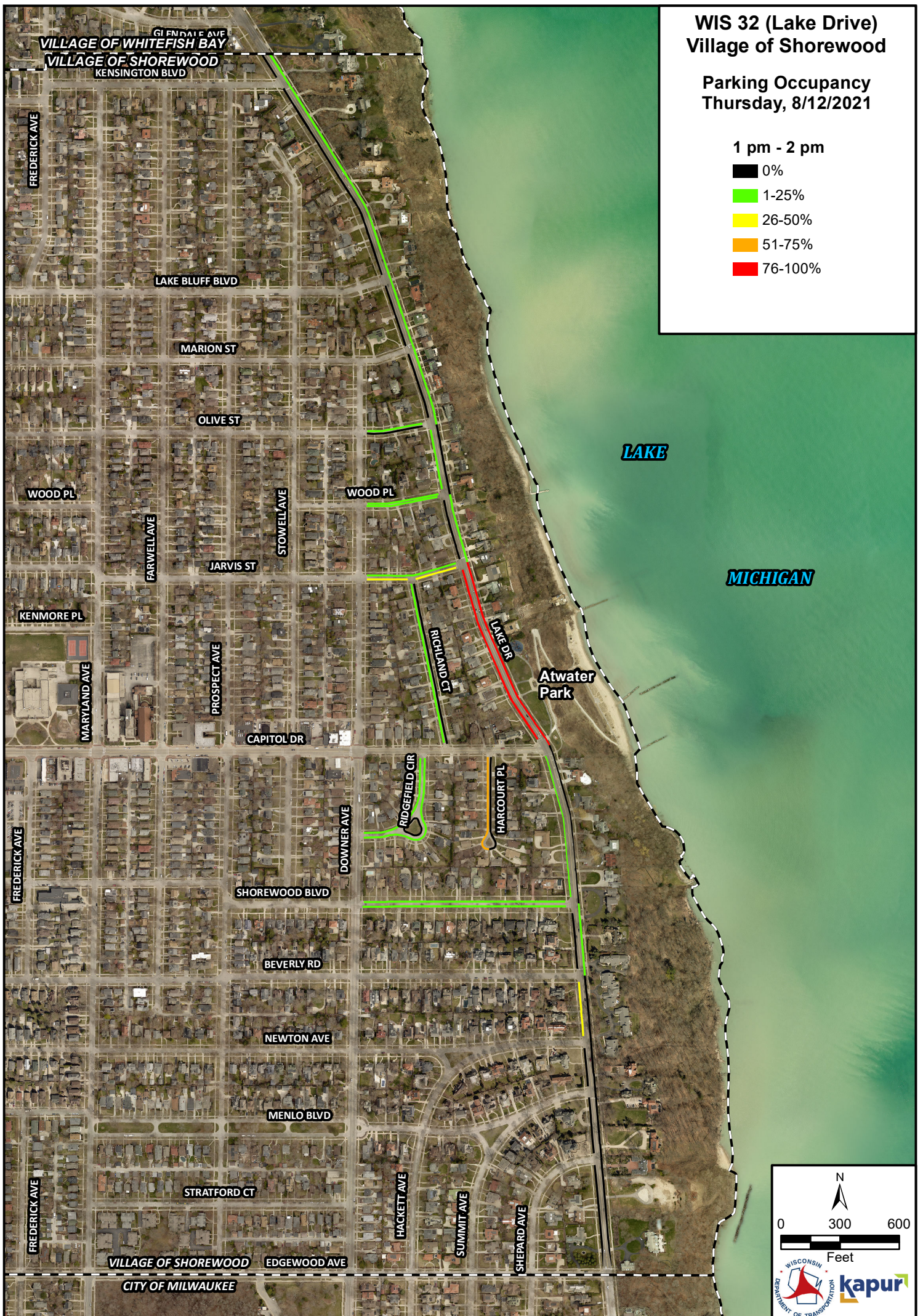
WISCONSIN DEPARTMENT OF TRANSPORTATION
Kapur

WIS 32 (Lake Drive) Village of Shorewood

Parking Occupancy
Thursday, 8/12/2021

1 pm - 2 pm

- 0%
- 1-25%
- 26-50%
- 51-75%
- 76-100%



WIS 32 (Lake Drive) Village of Shorewood


Parking Occupancy
Thursday, 8/12/2021

2 pm - 3 pm

- 0%
- 1-25%
- 26-50%
- 76-100%
- >100% (*over utilization)



0 300 600
Feet



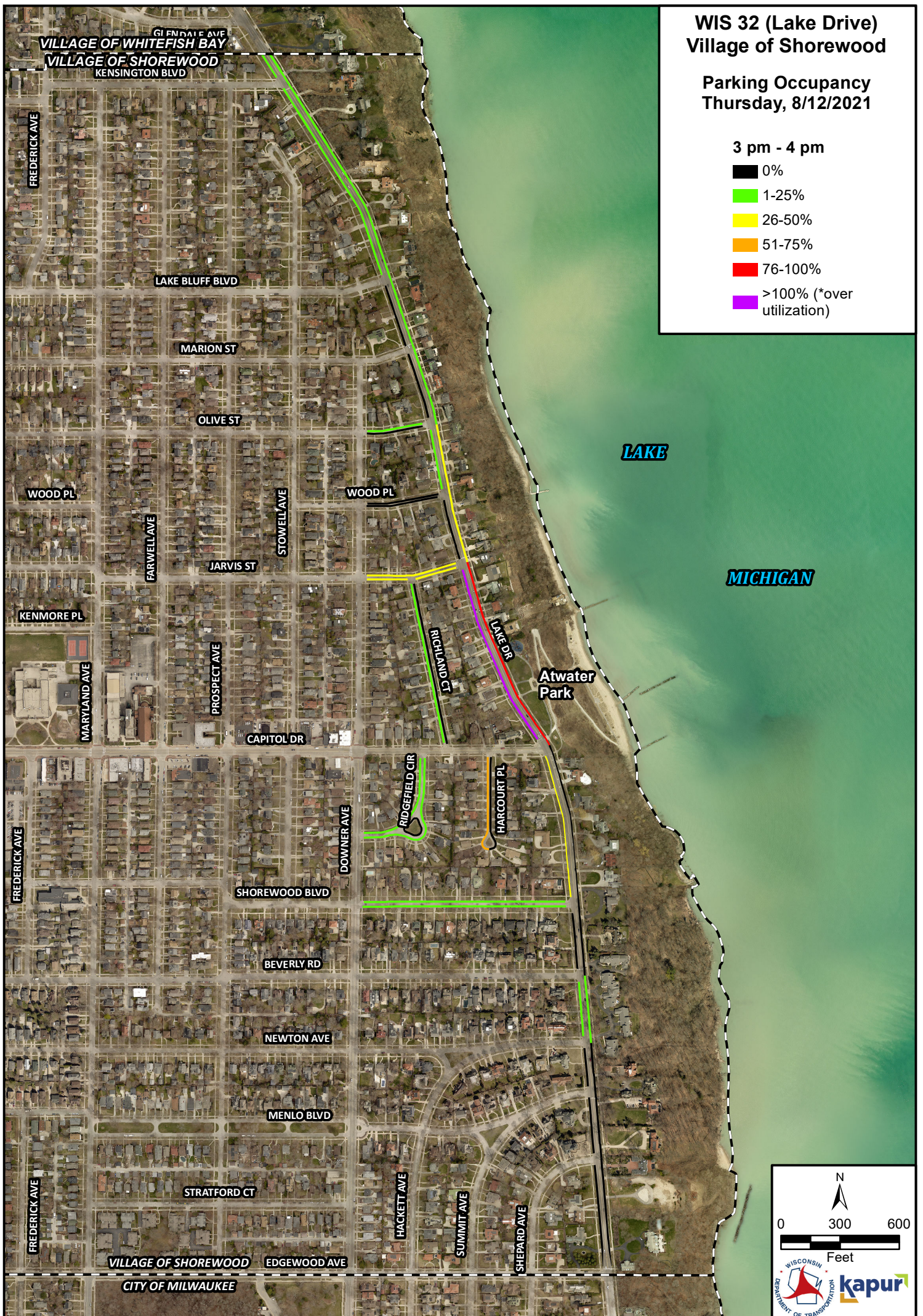
kapur

**WIS 32 (Lake Drive)
Village of Shorewood**

**Parking Occupancy
Thursday, 8/12/2021**

3 pm - 4 pm

- 0%
- 1-25%
- 26-50%
- 51-75%
- 76-100%
- >100% (*over utilization)



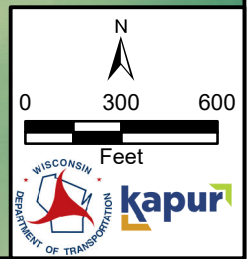
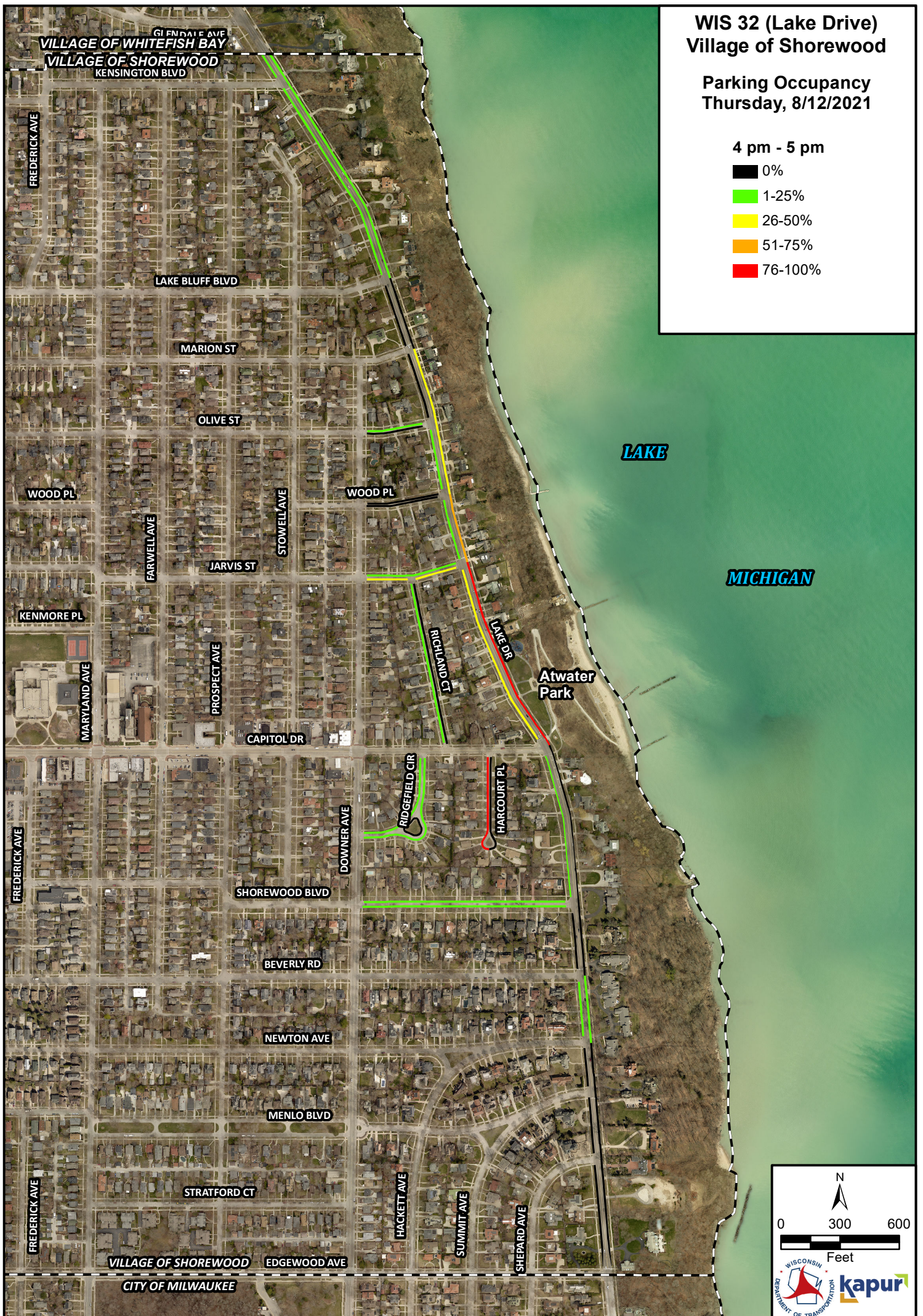
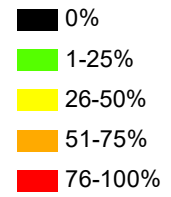
0 300 600
Feet

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DEPARTMENT OF TRANSPORTATION

WIS 32 (Lake Drive) Village of Shorewood

Parking Occupancy
Thursday, 8/12/2021

4 pm - 5 pm



WIS 32 (Lake Drive) Village of Shorewood

Parking Occupancy
Thursday, 8/12/2021

5 pm - 6 pm

- 0%
- 1-25%
- 26-50%
- 51-75%



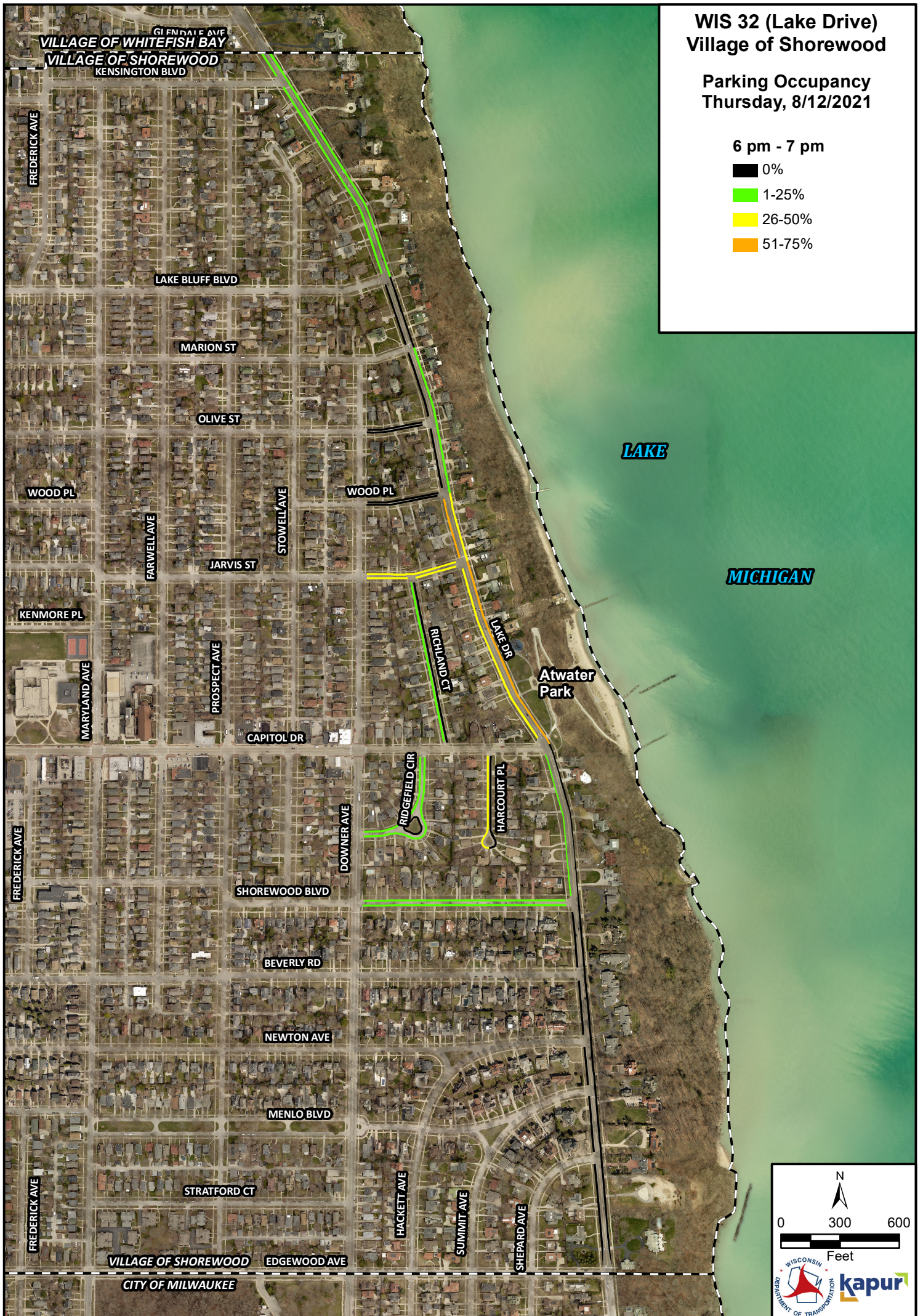
0 300 600
Feet
WISCONSIN DEPARTMENT OF TRANSPORTATION
kapur

WIS 32 (Lake Drive) Village of Shorewood

Parking Occupancy
Thursday, 8/12/2021

6 pm - 7 pm

- 0%
- 1-25%
- 26-50%
- 51-75%



0 300 600
Feet

WISCONSIN
DEPARTMENT OF TRANSPORTATION
kapur

APPENDIX G

Weekend Average Occupancy

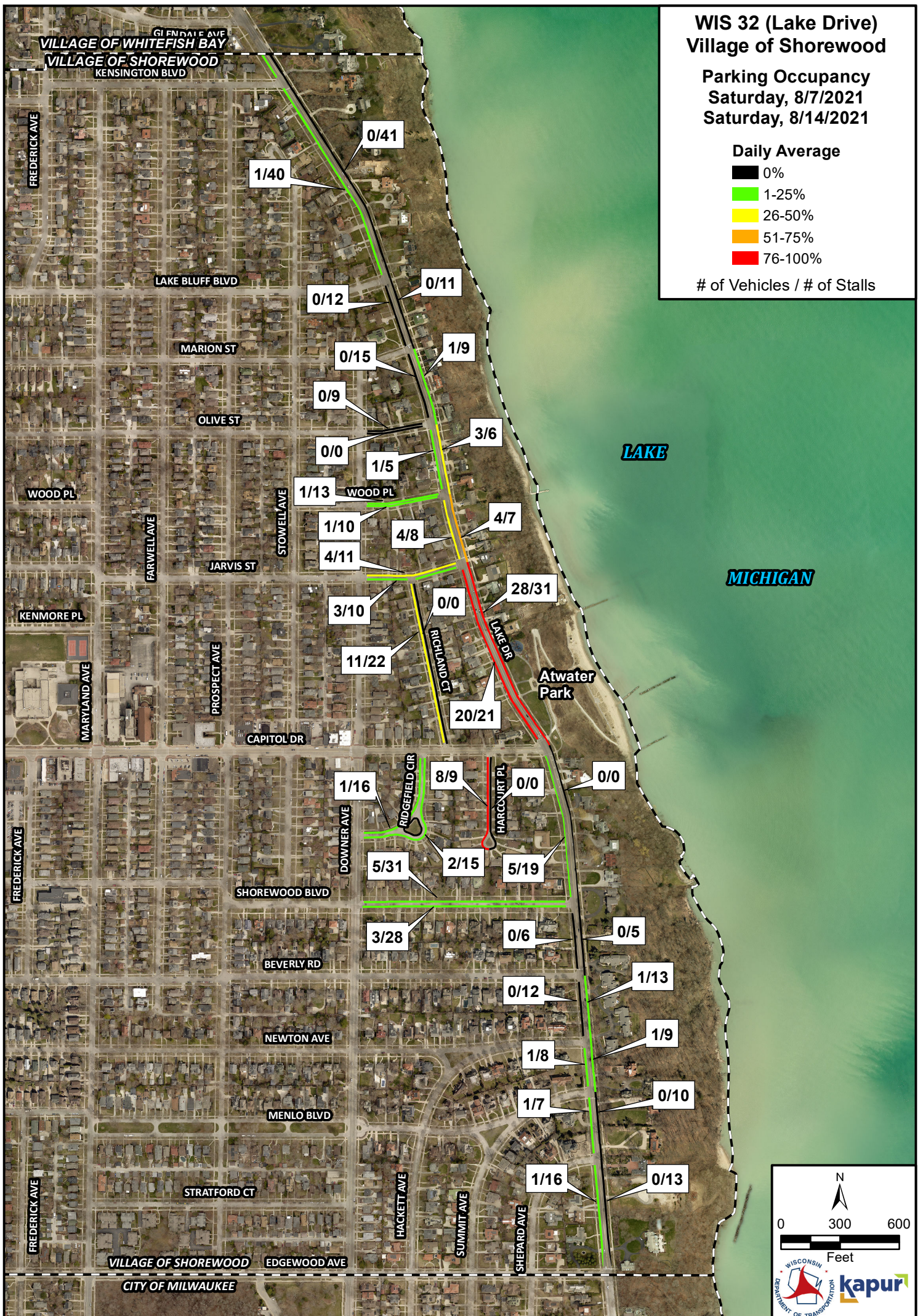
WIS 32 (Lake Drive) Village of Shorewood

Parking Occupancy
Saturday, 8/7/2021
Saturday, 8/14/2021

Daily Average

- 0% (Black)
- 1-25% (Green)
- 26-50% (Yellow)
- 51-75% (Orange)
- 76-100% (Red)

of Vehicles / # of Stalls



0 300 600
Feet

WISCONSIN DEPARTMENT OF TRANSPORTATION
kapur

APPENDIX H

Weekday Average Occupancy

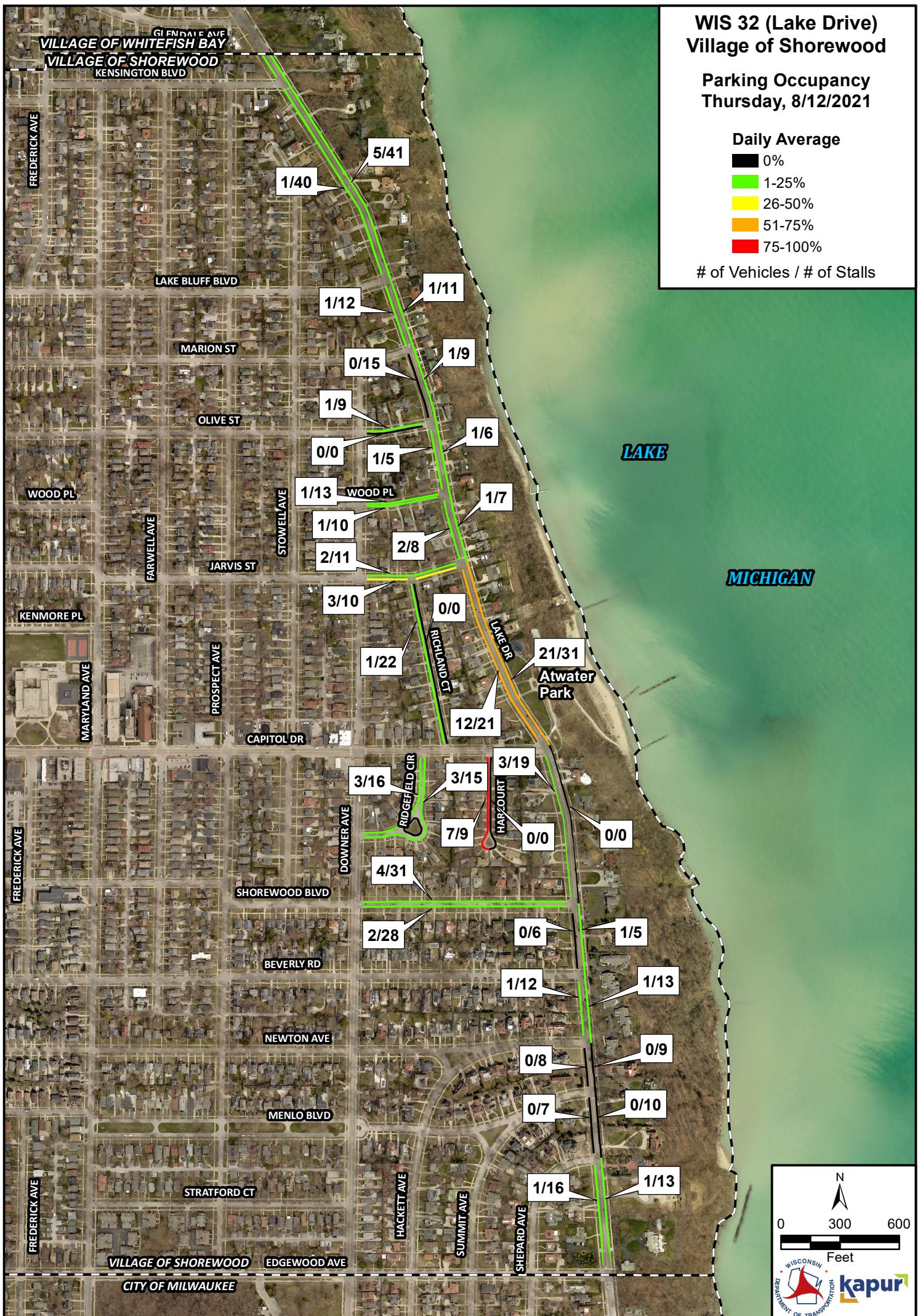
WIS 32 (Lake Drive) Village of Shorewood

Parking Occupancy
Thursday, 8/12/2021

Daily Average

- 0%
- 1-25%
- 26-50%
- 51-75%
- 75-100%

of Vehicles / # of Stalls

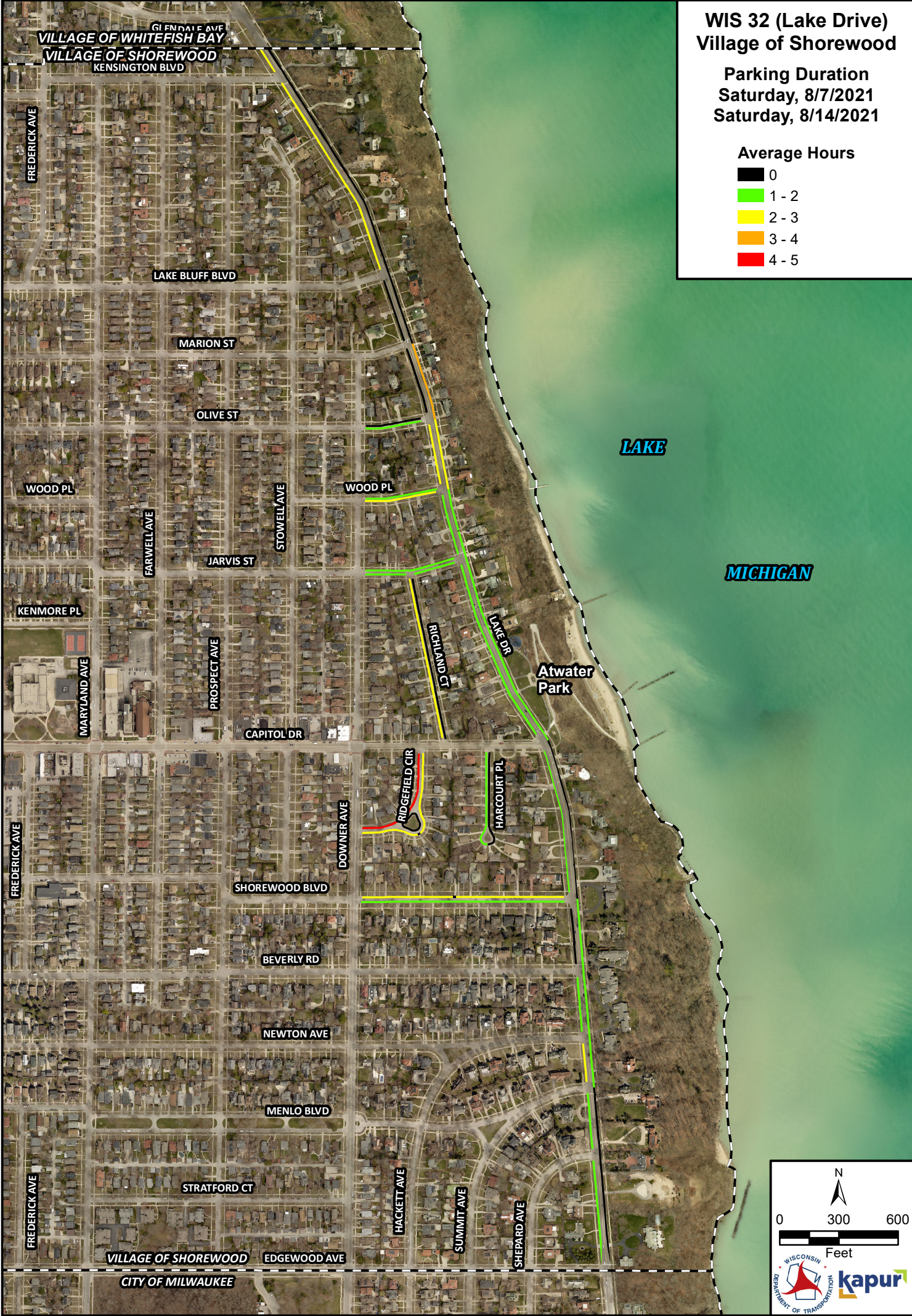
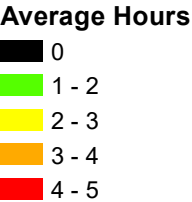


APPENDIX I

Weekend Duration

**WIS 32 (Lake Drive)
Village of Shorewood**

**Parking Duration
Saturday, 8/7/2021
Saturday, 8/14/2021**



0 300 600
Feet

kapur

APPENDIX J

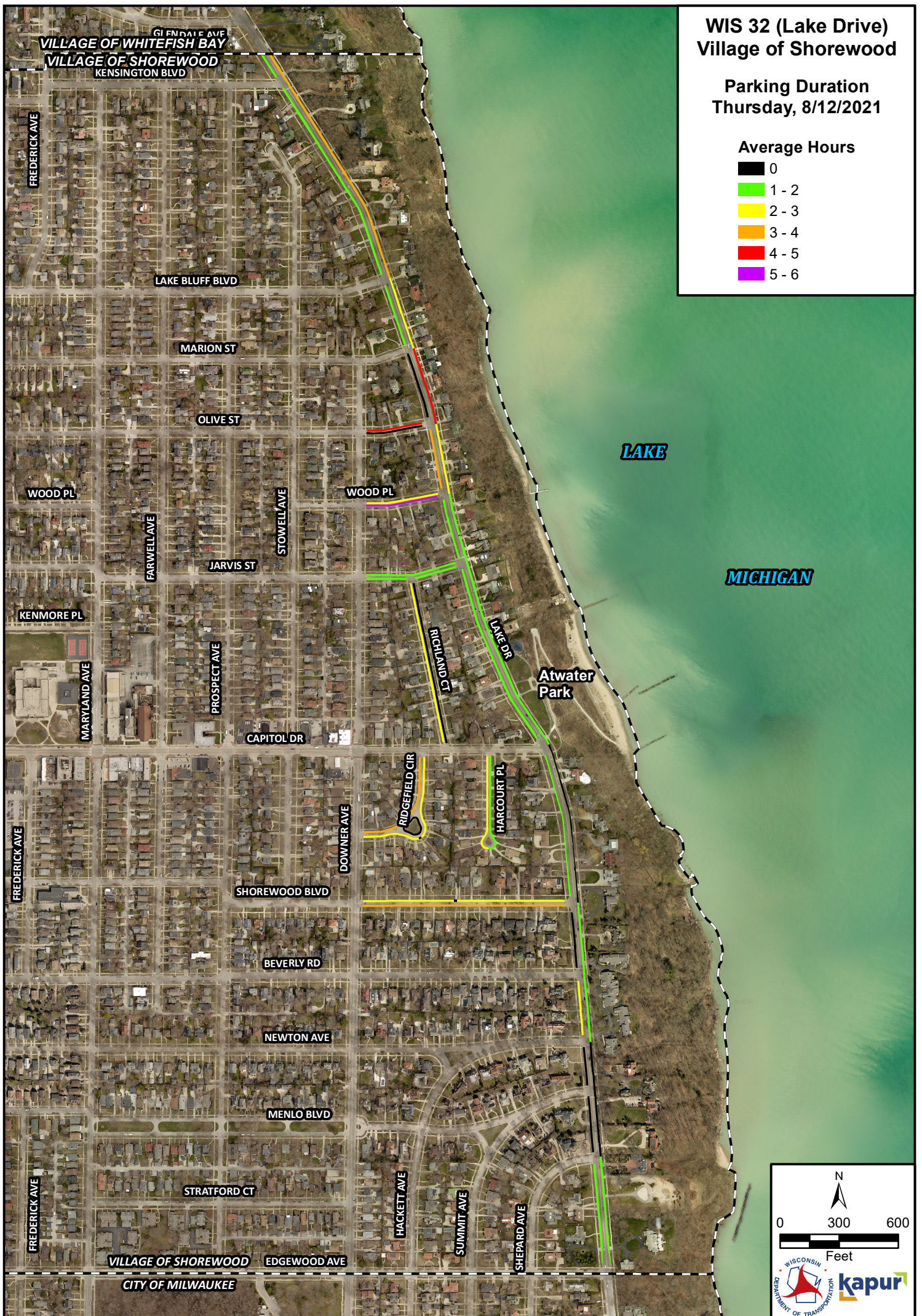
Weekday Duration

**WIS 32 (Lake Drive)
Village of Shorewood**

**Parking Duration
Thursday, 8/12/2021**

Average Hours

- 0
- 1 - 2
- 2 - 3
- 3 - 4
- 4 - 5
- 5 - 6



0 300 600
Feet

kapur

APPENDIX K

**Scenario A - Weekend Build Year 2026 Parking Occupancy:
Parking Shifted to East Side of Lake Drive**

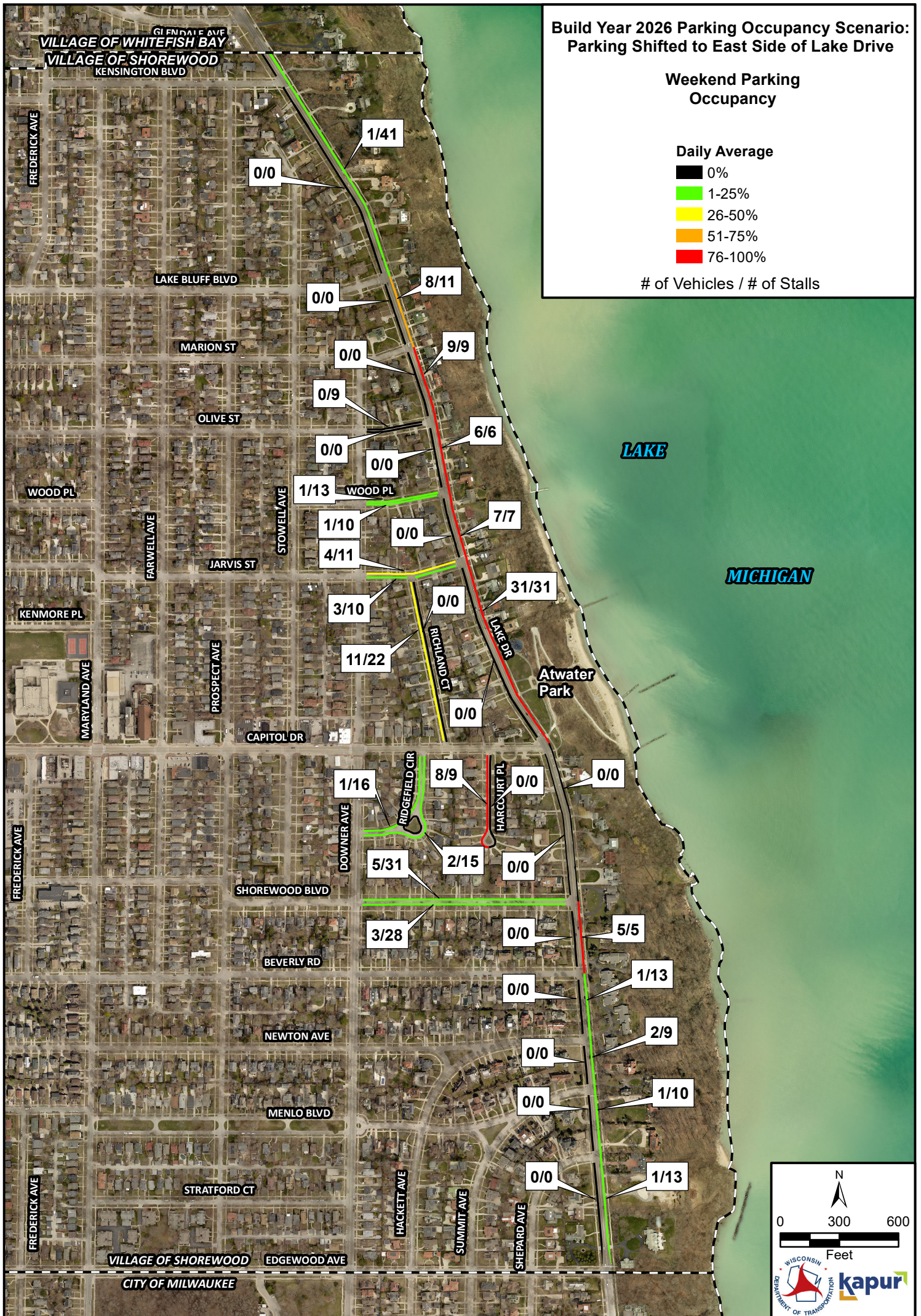
**Build Year 2026 Parking Occupancy Scenario:
Parking Shifted to East Side of Lake Drive**

**Weekend Parking
Occupancy**

Daily Average

- 0%
- 1-25%
- 26-50%
- 51-75%
- 76-100%

of Vehicles / # of Stalls



APPENDIX L

**Scenario A - Weekday Build Year 2026 Parking Occupancy:
Parking Shifted to East Side of Lake Drive**

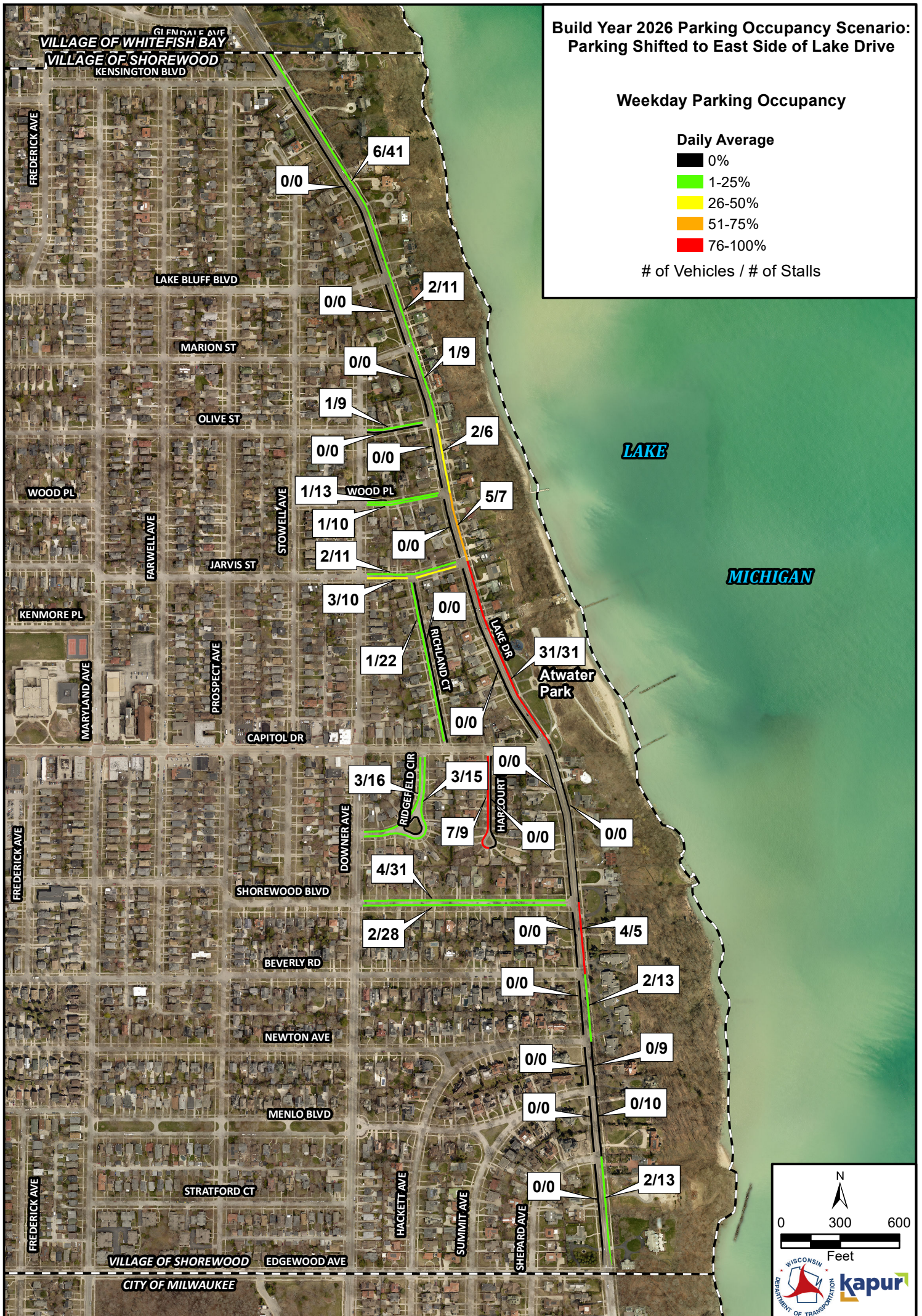
**Build Year 2026 Parking Occupancy Scenario:
Parking Shifted to East Side of Lake Drive**

Weekday Parking Occupancy

Daily Average

- 0% (Black)
- 1-25% (Green)
- 26-50% (Yellow)
- 51-75% (Orange)
- 76-100% (Red)

of Vehicles / # of Stalls



0 300 600 Feet

WISCONSIN DEPARTMENT OF TRANSPORTATION

APPENDIX M

**Scenario B - Weekend Build Year 2026 Parking Occupancy:
Parking Shifted onto Side Streets**

APPENDIX N

**Scenario B - Weekday Build Year 2026 Parking Occupancy:
Parking Shifted onto Side Streets**

